

## Interpreting Geography Science

### INTERPRETATION DES SCIENCES GEOGRAPHIQUES

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Received 7 January 2012; accepted 23 April 2012.

#### Abstract

The geography is an old and young science. Many people often feel confused and regard the geography knowledge as science of geography. With time goes, modern science of geography is endowed with its own new connotation and glows the new vigor. This essay discusses the nature of Geography Science, analyzing the value of Geography Science and going forward the development of Geography Science. It is the ultimate objective to illustrate and let people know and understand its functions.

**Key words:** Geography Science; Attribute; Value; Development

#### Résumé

La géographie est une science ancienne et jeune. Beaucoup de gens se sentent souvent confus et considèrent la connaissance la géographie comme science de la géographie. Avec le temps va, de la science moderne de la géographie est doté d'une nouvelle connotation propre et brille la nouvelle vigueur. Cet essai traite de la nature de la science Géographie, l'analyse de la valeur des sciences et de géographie à l'avenir le développement des sciences de la géographie. Il est l'objectif ultime d'illustrer et de laisser les gens connaître et de comprendre ses fonctions.

**Mots clés:** Science Géographie; Attribut; Valeur; Le développement

JIANG Naili (2012). Interpreting Geography Science. *Canadian Social Science*, 8(2), 63-68. Available from URL: <http://www.cscanada.net/index.php/css/article/view/j.css.1923669720120802.3380>  
DOI: <http://dx.doi.org/10.3968/j.css.1923669720120802.3380>

The Geography Science takes the humane environment, relationship between human and earth and region as its own study objectives. It is an integrated subject of nature and social science; establishing its unique and quite complete subject system. Mr. Kezhen Zhu has a very incisive opinion: "Geography is a science which focuses on the study of the formation; development; regional differentiation and layout of geography. It has both of distinct regional and integrated characteristics. It has obvious practical functions and has very close relationship with every department of national economy construction simultaneously."

Mr. Xuesen Qian expounded the connotation to Geography Science in the view of system theory; and pointed out that geography system is "open and giant system"; and is "one of ten modern science and technology system among nature science; social science; mathematics; systematic science; somatic science; science of thought; military science; behavior science and theory of literature and art. They have the same important roles." In 1964; American geologist William Pattison once put forward that there were four traditions in Geography Science; namely earth science tradition; humane-earth tradition; regional study traditional and space tradition. Modern professionals in China geographic field always view the regional and integrated characteristics as its unique features. With time going; as a prospective subject with long history; Geography Science's contents continuously renews and has its new connotation to its both traditional regional and integrated characteristics. Since the twenty-first Century; geographic science gives new vitality again especially after the emergence of remote sensing; geographic information system; and global position system.

## 1. ATTRIBUTES OF GEOGRAPHY SCIENCE

### 1.1 Comprehensive Attribute of Geography Science

The study subject of Geography is space system of earth's surface. Its core is regional system related with human and earth. Regional system includes human activities and geographic environment. Geographic environment is divided into natural geographic environment and humane geographic environment. It has remarkable natural and humane attributes. because there is complicated relationship between humane phenomenon, humane and natural phenomenon, it can be drawn a right conclusion under the circumstance that you can only synthesize the related factors, study its general features and focus on their mutual affect and interaction among the various elements. The compound is one of the basic natures of geography. Geography in essence is integrated, which stresses that the whole is more than the sum of the individual part. The issues that we faced are comprehensive. No comprehensive, no the existing value of Geography. Due to the territorial control, development strategy and sustainable development, all very well reflect the comprehensive, so is the geography could be used in these field.

### 1.2 Regional Attribute of Geography Science

Regional research is the most important field of Geography Science, which makes "Regional attribute" to be one of natures of Geography Science. As a scientific subject, Geography has abstract theory like others, and the theory should overpass specific region. The Regional attribute has been overstressed specific region research, which leads to such case that Geography Science rejects the research of general regional theory. It is reasonable and positive during the era of exploration of the Geography Science. It made human know various regions with different scales and types clearly. On such basic, supposing the specific region as research subject, it is necessary to establish theory system of regional Geography Science gradually. It is said that PRKD-Population, Resource Environment and Development. It is an improvement of geographic region that Modern Regional Science emphasizes on the deduction and quantitatively analysis from general to specific and regards the explanation and set a model as a central task of geographical area.

### 1.3 Soft Science Attribute of Geography Science

In computer study field, it can be divided into hardware and software part. Same as it, science can be divided into hard science and soft science. Hard science refers to the science which can analyze, measure and compute correctly, such as mathematics, physics, chemistry, engineering and technology science, etc; soft science refers to philosophy, theory, management and planning,

etc. soft science emphasis on resolving non-program problems with partial information. Geography Science, as a soft science, mainly refers to its role in making the strategy of city planning, regional planning and regional development, especially in making the strategy of regional development. The strategy of regional development, especially of realizing cohesive development of "Population-Resource-Environment-Economy" has achieved more and more attentions. It has different study for various subjects. Scientist of Geography, especially the scientist of Geography with the knowledge combining economic geography, natural geography and economy training, can integrate the strategy of regional development and its sub-strategy to make a research and put them on regional structure. At the same time, they can discuss strategy issue as well. Thus, Geography has obvious attribute of soft science, soft science can resolve hard issues. It has been paid more attention to the value with soft science attribute of Geography Science.

### 1.4 Project Attribute of Geography Science

Geography project refers to the development, protection, utilization and transformation of the geographical environment by people with specific purpose. It has general objective, and has been made in different stages and programs steps by steps with an order. In this process, the individual stage and project has its own feature. The overall goals directly have social benefits, economic benefits and ecological benefits, namely the geographic benefits. The geographical project focuses on realization from geography science to application technology of geography and to practice of geography. Geography Science has made the design and construction of geography project, directly provides the service to resolution of a certain specific issues. Professor Guihe Jing's landscape ecological design of desertification land and Professor GongFu Zhong's fishing pond construction theory of mulberry fishpond are successful examples of geography project designing.

## 2. THE VALUE OF GEOGRAPHY SCIENCE

As a form of human knowledge, science has its own intrinsic value. As one of the categories of science, Geography Science also has its own unique value. The existing of this sort of value is contributed to "object" properties of Geography Science, namely that "value" connotation. As one of the basic sciences, Geography Science has philosophy value, science value, application value and education value, which constitute the value network of Geography Science.

Modern Geography Science has taken shape since the 1960s with the social needs, the development of systemic science philosophy, and the appearance of advance technology as computer. It studies different organization

level within different earth's surface from the three aspects of spatial order, time series and motivation mechanism. It is on the stage of dispute, readjustment and improvement. Under the circumstance, exploring the value of has enormous meaning.

### 2.1 Philosophy Value

Philosophy is a kind of science studying the essence and laws of the world and probing the nature and the human society and their future development. Geography Science with its own features is capable to answer and resolve these issues that philosophy focuses on. Thus, it has certain philosophy value. The study of philosophy is not vague and abstract, it has regarded the objective world as foundation, its philosophy and basic theory dominate and effect research of geography science and has its anti-effect from geography objective word and Geography Science.

The process of geographic environment evolution is full of negative to negative law. Regional deferential of geography environment space is full of affiliation and quality change rule. The objective reality assume that the right of philosophy, and test the vale of philosophy itself. Since the beginning of Geography Science, it has been emphasizing on the relationship between human and earth and form various human-earth relationship theory. Through arduous study and theory thinking, scientists of geography draw a right conclusion that to realize bright future by the way of co-exist and co-creative of human and earth. Geography Science solves how to cultivate the subjective initiative partially. Philosophy (especially Marxist Philosophy) focuses on the initiative of human, how to play under the circumstance of humane and geography environment.

The means of Geography Science enrich the methods of philosophy. From the view of special study, Geography Science enrich the ways of knowing objective world by people, enriches the methods of philosophy. It can think and explore time issue from the aspect of special, which will facilitate the development of integrating time and space philosophy.

### 2.2 Science Value

Academician of Xuesen Qian attaches importance on the comprehensive study of Geography Science. He regards the geographical science as one of ten science and technology departments together with natural science, society as science, mathematics, science, system science, and human science, thinking science, military science, behavioral science and literary theory of the modern. Geography in the near modern science building has the important position. After all, the development of human geography broadens their horizons, sublimation of the whole of earth rational knowledge. Geography always has higher than the idea of overall local, correctly solves the problems all food, population, resources and environment, comprehensive issues. Complexity has an

important role. The 21st century is the world of global integration. All the solutions of the problems need a whole concept. Interdisciplinary attribute determines the role on comprehensive problem solving. Geography has the cross natural science and social science in solving the attribute, the existence of a large number of, a series of important, and social sciences and natural science itself unable to solve the problem and comprehensive play a special role.

Geography is one of the basic laws, and causes regional differentiation rule of law are inevitable connection. It can reveal other course oneself is difficult to be directly to reveal rule. Unknown as a long succession process, can find the time to process rules, it has set up a file in the peat formation, desertification research to be confirmed. Also, the application of the spatial distribution law of human diseases can find out some reason and usage. In addition, geographic comparison research provides for many humanities knowledge foundation and research material, not rich regional knowledge, no to all sorts of human geography of the law, they know it is difficult to have more in-depth research and development.

Geography Science is a micro science, the breakthrough of great theory which will directly promote the progress of other subjects. Docuchief (a geography scientist) has put forward "Natural Regional Zone" theory, which directly derived "Genetic Science" (genetic view of the soil science). The synthetic study itself is a theoretical breakthrough. The uplift of The Qinghai-tibet Plateau affects the natural environment and human activities. It played a key role to the mechanism of Asian environment evolution. Geography Science takes special system of earth's surface as its study objective, it is not the field that the any other science (or subject)once studied. One of earth's surface issues is special system. Therefore, Geography Science has an irreplaceable role of the other subject.

### 2.3 Education Value

Geography Science has special and important role to the education of students and the public scientific knowledge, scientific spirit, and scientific thought. Regard to the value of this aspect, the < Geographical Education International Charter > issued by the Geography Education Committee of the International Federation of Geography specially introduced the contribution of Geography Science to Education. The education role of Geography Science was divided into two parts in this charter. Geography Science is an important media of individual education and it also has great contribution to international education, environment and development education. "It is necessary for Geography Science to cultivate active and responsible citizens today and in the future."

Geography Science dedicated to the contribution to cultivate reading and writing competences, oral competence, computing competence and graphical ability of students. It also is helpful for the development

of personal qualities and social communication ability, especially space measure of daily life and acknowledge of international affairs. The United Nations Seminar on environment and development, held on March 18, 1991 in Geneva, pointed out: “the key to protect the sustainable development of world is to put forward environment education to all mankind in every stage. The more knowledge mastered by intelligent who can understand information; the more chances to reduce significantly the damage of environment and prevent the emergent issues in the future. Thus, the primary task is to enforce education system of every country, especially developing countries as a premise of environment and development education.” The contribution of Geography education is to ensure that people pay attention to the affects of human and social behavior and to get accurate information and skills, making right decisions to the issues of environment and setting up a set of environmental ethics as a guide to action.

#### 2.4 Application Value

The application value of Geography Science mainly refers to the role of economic construction and social development, which is “Geography Construction”, including traffic transportation, information, telecommunication, post and telecommunications, energy and power, weather forecast, water resources, environmental protection, urban construction, disaster prevention and prediction, etc..

The application value of the Geography Science mainly contributes to the “Soft Science value”, partially to the “Hard Science value”. It is predicted that Geography Science will play more and great role in the future. The value is not limited in providing referential information, but directly participate in solving a series of interaction issues related with human social and natural. Among of them, Geography Science will play a bigger role to sustainable development and its strategic study.

Academician Xuesen Qian put forward that Geography Science System is a great systematic project, and he especially stressed: Geography Science is very important to our Chinese socialism construction, it is necessary to develop Geography Science in China under the circumstance of constructing socialism China. And emphasized that Geography Science is an integration of natural and social science, the important tasks of China Geography Science Construction lies in the co-work of Geography Science professionals. We need to unite the government departments, select meaningful research subject and put forward positively suggestions of Geography professional trough the investigation. It is an important channel to develop geography theory and improve social status of the subject. Experiences of the past decades have fully proved that

Previous decades of experience have fully proved that Geography Science can solve many problems

synthetically and fulfill the following tasks.

Firstly, one of important study contents and important achievements is the division of natural geography and economic geography region. It has provided scientific basis for utilization of natural and development of production correctly and scientifically.

After the liberation, they have made great effects, such as natural geography regional division held by our country three times, several provincial and countryside economic regional division, agricultural regional division and city regional division, etc..

Secondly, Geography scientists have participated in the environmental protection and landscape ecological construction. Geography Science has made great achievements in the protection of natural ecological environment and landscape ecological construction. It was praised and paid more attentions by “Human-Biosphere” organization in the process of rural ecological system construction in Southern area via environmental analysis forecast and regional ecological design. It has played an important role in the “South-to-North Water Diversion” project, the Three Gorges project, and some more geographic projects design of specific region, etc..

Thirdly, the role of Geography Science in Regional Development Forecast and Risk-decision has emerged. Geography Science forecasts the future by skillfully applications of “Causality method”, “Compurgation method”, “Historical method” and “Analogy method”. But because of the complexity of the geography object, more forecast will be limited in specific region, such as earthquakes, volcanoes, landslides, debris flow, flood, drought, wind disaster, cold, tsunamis, typhoon etc. And these forecast themselves with many uncertainties, so the decision on that basis is a risk decision. But this kind of decision on has shown some effect.

Fourthly, it is used to participate in territorial control and the land planning of utilization. It can provide basic scientific basis for rational utilization and development of territorial land resource in order and space. The leading developed countries in the world have attached great importance to the territorial control work, Geography Science act for a major role. Such as Japan’s three time’s execute of comprehensive land development plan, the former Soviet Union’s land resource survey, American’s land utilization issues which adopted Geographer Hudson’s plan, German’s “Regional Regulation Law”, France’s National Land Resource Survey, British land utilization survey, Sweden’s local region regulation, and land planning in China and its regional district. Overall, Geography Science played an important role in those fields. Especially it is more obvious in time and space order. It is also a leading task that Geography Science will play in the future.

Fifthly, it is used for Tourism Planning and Design. Many experiences and achievements have shown that Geography Science has played a key role in regional

tourism system which is combined with tourists, natural environment, the cultural environment, management organization and management professionals. It makes plan and design on basis of tourism resource cultivating and evaluation. At the same time, it also study the effects that the tourism burden to the stability of geography system.

Sixthly, it is used to participate in practice of regional governance, contribute to regional development. Regional governance is different from the general planning, which includes "plan-design-practice" the whole governance process, it facilitate Geography Science services the practice more, and participated in the transformation of nature and economic construction. Many geography professionals played an important role in the regional governance in large scale of "Yellow River and Huai River Plain, Yellow Land Plateau, Three-River Plains" during the Seventh-Five Planning. Geography professionals will participate in modernization of country actively and follow clearly the philosophy of "symbiosis of human and earth, co-creative of human and earth" in the future.

Seventhly, regional study provides a basis for policy making. The achievements or conclusions of regional study can provide background material for the country diplomacy, regional trade, domestic economic and cultural construction, which can provide a basis for the international conventions and domestic policy. It has been shown its value in the research of geopolitical issue of the Antarctic.

### 3. TENDENCY OF GEOGRAPHY SCIENCE

The development of Geography Science is huge. These are the long term application and research field such as resource and environment issue, land development and development issues. It is also the requirement of exploring global change and sustainable development issues in the new century. In 21 century, the development of Geography Science must innovate; the extent of innovation is huge. The achievements of technology reform is expanding its application in the study of Geography and teaching practice, which derives some new field and application field. Geographer must be familiar with remote control, GIS technology, Mathematical model.

#### 3.1 The Penetrating and Joint with Its Adjacent Discipline will be Broaden Widely

The earth's surface is both study object of Geography Science and the main stage of human activities. All sorts of natural factors and social factors are interlaced. Ecological science, environmental science, economic science produces and grows here. They melt with Geography Science and have close affiliation. Taking a example, the study object of environment science is also the survival space of mankind, ecological science study the mutual relationship between the biological

and environment, the development of economic science must lie on natural environment. All of them can not be separated from a certain geography environment. They make a systematic synthesis and analysis by applying the theory and technology of systematic engineering science, such as dissipative structure theory, the collaborative learning, system theory, control theory. Therefore, large scale synthetic study with interdisciplinary and multiple level, so that to promote the modernization of Geography Science. It is a inevitable tendency to widen the study research of Geography Science and new growing point continuously and to make the philosophy of modern synthesis, combining the original attribute and "synthesis-analysis-re-synthesis", more specific and programmed.

#### 3.2 The Development of Geography Science's Branch Discipline More Reasonable, Coordination and Unity

Dualism thoughts exist in Geography Science in long term, separating nature geography from humane geography, not only influences and hinders the integrated study development of Geography Science, but also is not beneficial for the solving of issues which appear in population, resource; environment, economy and society conflict.

It is also difficult to cross, penetrate and integrated with other adjacent subjects. Therefore, it is a strong wish and objective reality to eliminate the gap between "No-mankind's Nature Geography Science and "Anti-nature" humane Geography Science overcome the dualism and develop united Geography Science when it is in the process of empirical study on Geography Science and the theoretical research and its modernization construction of Geography.

#### 3.3 Geography Process Research on Micro-Mechanism in Geography Science Will Be Further Developed

There is a difference in essence between the integration of modern and ancient Geography Science. It is a synthesis on the basis of fully analysis research and a dialectical synthesis of system. Only does further study its forming mechanism, change law, structure characteristics in every single part of studying Geography Science, can you truly understand the full Geography Science, analyze its type, forecast its change, adopt effective countermeasure to coordinate and control its development process. Thus, the interface study of every sing system will be paid special attention.

#### 3.4 Closely Combining the Actual Practice, Expanding Its Application and Study Field Continuously

It is the application and study mainstream of current Geography Science and is also a key stage for serving society to apply Geography Science study in the following fields, such as resource survey, land measure, city and

countryside planning, land governance, environment protection, disaster prevention and anti-disaster, tourism development and agriculture production base construction, etc. Geography Science has made a due contribution to global issues and will make more contribution in the future with the development of technology science Under the circumstance of need of economic development and construction for every country and region and the management and protection of environment, especially its study and implement of sustainable development and <21 Century Agenda>. Geography Science will be a foundation discipline with substantial fundamental theory and applied theory, but a applied discipline associated production practice and regional development study.

### 3.5 Continuously Innovating Its Study Method and Means

It is the requirement of the times and also a road that one must go through to expand Geography Science with applying the newest modern technology science. Especially the development and improvement of both geography information system and geography information science is the key. Geography information science and technology has become an irrevocable means and composition of geography study in developed countries. Geography information system, a integrated production of traditional science and modern technology, is promoting the development of Geography Science in China and many fields of national economy. Many new methods of technology related to special data analysis expand the application field of geography information system. In recent years, It shows the features and status of Geography Science that the efforts geographers have made. They have made a research on development of geography information technology and its expanding and application, global change, the study of the earth systematic science

and sustainable development, etc..

Modern Geography Science should be a dialectical synthetic Geography Science and an integrated Geography Science combing advanced comprehensive thought, thinking model, synthetic panel and technology. Geography Science has laid solid foundation for making high level decision since it is good at regional study and synthetic and macro expound and prove objectively. Geography Science professionals should make suggestions for big construction issues of our country and play bigger role to help people understand Geography Science well since geography professionals have comprehensive knowledge and competences.

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