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GEOGRAPHY:

FORMS, RELATIONS OR SPACE?

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SUMMARY: In this work we first find an explanation of the difficulty which exists up to the present day of finding a clear and universally acceptable definition of this science. Secondly, we propose a material object for Geography: the forms of the Functional Geographical Units; and a formal object: the relations which cause these forms; and finally we relate the importance that space has in Geography as a social demand factor, given the fundamental spacial character of the Functional Geographical Units.

The object of this work is to expond the "explanation" which we have found for a real and painful fact -because of the sterility it produces- in the history of Geography: the absence of a clear and universal definititon of this science.

We shall begin by narrating a real situation which happened to us while taking part in the work session of the "Working Group on Landscape Synthesis" in 1985 in Dessau (East Germany) This Working Group belongs to the International Geographical Union.

Among the topics discussed there, was the presentation of a Glossary to work on Landscape from a geographical point of view, in which a series of definitions were stated about the basic concepts for this Working Group. Firstly, we looked for the definition of Geography, sciece in which the investigations were being carried out. Our surprise at not finding it, moved us to ask for it to theGeographers who had elaborated the project. The answer was ever more surprising: "the express decision had been taken that the definition for Geography would not appear in our Glossary". The anecdote wos completed when we observed some other concepts to be defined, for example: "Ecology", "Environment", "Ecosystem".... (LOPEZ, M.L. and LOPEZ, S. 1986, Documentos Aljibe, 2ª Serie Nº 3 pages 33/34).

Naturally, this is an anecdote, but,... it is representative for any Geographer who has worked in epistemological themes.

The definition of a science suffers changes throughout its history, giving more importance to certain aspects, or in other cases, to details which become necessary on the widening of the scientific frontier. These variations indicate the vitality of science and the advance of its component knowledge.

This is not the problem with Geography, whose problem, we inssist, is painful through being sterile.

From the earliest definition of Geography as "description of the Earth, very definite changes have been made, making for greater accuracy. According to Professor Teran:

> "Geography was in the first place defined, following its etymological derivation, as description of the Earth, and this elementary definition still remains, fossilized, in the text-books. The term Earth was substituted by the expression Earth´ s surface, and with the idea of makin its character more scientific, the adjective rational was introduced into the description. This was done by Richthofen, who described Geography as the rational and explicative description of those parts of our planet.where earth, water and sky como together. But the expression Earth´ s surface es not yet

> sufficient if its character of spacial differentiation is not defined (...)
>
> Other definitions are also insufficient although it will be necessary to retain some parts of them to arrive at an integral and full definition of geographical science. This is what happens with the definition of Geography as the science of the localization of physical, biological and human phenomena on the Earth' s surface". (TERAN, M. 1960, pp. XXIII-XL).

Some changes do not introduce any divisions within geographical science; one understands that as knowledge of the Earth became more profound, Geography should limit its field; this was not the totality of the Earth, but only its surface. And, with respect to the description, the only valid kind would be causal, to be, therefore, within the scientific field, as in any other science.

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We can also include in the variants that of spacial differentiation, as it is an indoubted fact that, on describing the Earth's surface, we find, as the first element to connote, the physiognomical differences of geographical space.

Another outlook takes the definition of Geography as the science of localization of phenomena... which definition, from our point of view, changes the object of the science. It is not that we do not consider localization of phenomena to be a part of Geogrphy, but that we cannot define the object of Geography as localization, in the same way that we would not define Chemistry as the science of molecular valencies, although of course they are studied.

We thus come to the fundamental problem, which is, in our opinion, to determine what is the object of the Geography.

Profesor Vilá Valentí, in his article of 1971-73, ¿A new Geography"? summarizes very well the three great divisions which can be seen in Geographical Science since the end of the 19th century.

> "It would be erroneous to suppose, despite the relatively small number of authors and geographical centres who present material from 1883-1939, a

the approaches are going to play an important part, both in methodology and in the conceptual definition of our own matter. During some decades, the study of the relations between the physical environment -in the sense of "inanimate"- and living beings, became the most important combination of themes. In this cas, Geography is, fundamentally, an Ecology.

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A third group of authors gives importance that, in Geography, has the study of the areas, which appear on the Earth´ s surface. In this way, what we can call the "chorographical tendency" is reinforced, without doubt the oldest in our subject. Bearing in mind the two points previously established -study of objects or study of relationships- the analysis of areas is really an intermediate case.

Only to a certain extent do these "areal phenomena" occur on the Earth´ s surface; we mean, forming part of it, shaping it, giving geographical originality to a certain sector. We are not speaking strictly or exclusively of objects or relationships. In part thay really exist, but in part they only occur within the limits of the investigator´ s mind, as the result of a certain approach.

If we study the area of distribution of one, or a few phenomena, we come to a fact which presents, to a certain extent, an objectivity. But the analysis of a region, with the complexity with which it was conceived in the first two or three decades of our century, takes us away from objective facts. Only a partial or overall consideration can give us the impression that the region constitutes a complete object.

This bring us to the difficulty of defining it within concrete limits. Really, the region is left halfway between the real and the abstrat, between objective facts and subjective considerations" (VILA VALENTI, 1971, pages 12 and 13)

This quotation from Professor Vilá is long, but we feel that it is worth reproducing for the clarity with which he shows the problems thatdivide the Geography. He does not speak of "division" but of "diversity", and he sees their origin in the different "objects under study" and "approaches" which the geographer must analise and bear in mind.

He states that of the three "tendencies", two are differentiated by their "object under study":

> 1) "Certain elements or aspects which appear on the Earth s surface", which then become, for certain schools, "Landscape".
>
> 2) "The relationships", "a science which studies relations more than objects". "In this case Geography is, fundamentally, an Ecology".
>
> 3) The thrid tendency is different, not for its "object under study", but for its "approach":"The study of areas", and the so-called "chorological tendency".

Professor Vilá does not speak of division, but, in fact, from this time on, Geography begins a search for identity, which we can observe in a great number of authors.

We have selected some, to help us to understand the real problem or problems which brought about this situation, in which, geographers do not dare to include in a glossary... a definition of the science in which they work.

We put forward especially the following works. In later articles we shall analise in detail the texts and definitions which we have collected -in this, for reasons for space,- we shall only give our conclusions.

We shall give both the titles and dates, as they seem to us most significant data.

In 1905 **Alfred Hettner**, published a much commented article entitled "The Nature of Geography and its methods".

In 1923, **Harlan H.Barrows** gave a speech to the Association of American Geographer with the title of "Geography as Human Ecology".

In 1949, **Hans Bobek and Josef Schmithusen** published, in Erdkunde, a work entitled:"Landscape in logical Geographical System".

In 1950, **Carl Troll** published an article entitled "Geographical Landscape and its Investigation".

In 1951, **Richard Hartshorne** published a new revision of an article which he had published in 1939, the title showing clearly the relations between Hartshorne and Hettner: "The Nature of Geography".

In 1960, **Manuel de Terán** published some general considerations, as an introduction to a greater publication on "Man and Earth"; the title of these general consideration is: "The present situation of Geography, and the possibilities of its future".

In 1963, the year in which he was named Honorary President of the Association of American Geographers, **Edward Ackerman**, gave a speech to this Association, entitled: "The frontiers of Geographical Investigation".

In 1964, **José Manuel Casas Torres** was invited to give the inaugural speech of the academic year 1964-65 in Zaragoza University, the title of such speech being: "The frontiers of the New Geography".

In 1971, **Juan Vilá Valentí** published the first part of the article (later to be continued in 1973) from which we have previously quoted: "A New GeograPhy?.

In 1978, **José Manuel Casas Torres** published an article in the "Revista Didáctica Geográfica" with the expressive interrogative: "A science always in crisis?".

In 1981, **Olavi Granö**, Rector of Turku University (Finland) published a work entitled: "The external influences and the internal changes in the development of Goegraphy".

Finally, in the 9th Conference of Spanish Geographers, we presented a communication entitled, "Concepts which structure Geography as a Landscape Science" which the "Revista Didáctica Geográfica" requested for publication in 1986.

In all of these works we have found a common denominator, the necessity that their authors find, both subjectively and objectively, of classifying and delimiting what Geography is. For this purpose, they often recur to their professional experience and to the reality which is nearest them.

We, basing our ideas on those which these authors express, and on our own conception and formulation of Geography, are going to show what, in our opinion, impedes the minimal clarity and coincidence in this science, so necessary in scientific knowledge throughout the ages.

We have to start from the fact that the division of Science into sciences, is a demonstration of the capacity that Man has to find methods to know reality , but we must also remember that the other side of this fact shows, in the same way the limitation of this capacity. To bear always in mind this double "slope" -positive, negative- of human reason, is of vital importance to understand the problems which have impeded the specification of what geographical science is, or is not. And this is so, because the structural level of Geography, within the division of the science, is a complex level, that is to say, a level which needs a previous advance and an in depth study of many other sciences.

To define a science is to clearly specify what it studies, from which point of view it studies it and, as a consequence, what are the most relevant and significant aspects which this science apports to general scientific knowledge.

For us, Geography studies the varied forms which the Earth's surface presents. But it studies them from the point of view of considering that forms as the result of the relations which exist on the Earth's surface between the geographical elements: space, time, energy, matter and life. The forms of the Earth's surface consist of material forms, composed of matter, thus occupying space; they are also frormed by the development of the different kinds of life -animal, vegetable and human- and so, time is an

important factor in their composition. Lastly, to appear, develop and disappear, those forms use energy.

We have stated that these forms originate from the relationships between the geographical elements, relationships established between certain quantities of each of these elements, under the organization of one of them, which we call the "Fuerza Rectora" (Leading Power), and which is raised to this status by the unstable balance of the geosphere.

The time that this "Fuerza Rectora" is able to maintain itself as such, is the lifetime of the Functional Geographical Unit and when the "Fuerza Rectora" changes, the Functional Geographical Unit and, therefore, the form of the Earth's surface in that space also changes (see LOPEZ, S. 1985, pp 25-27).

Thus, really, the forms of the Earth's surface are the sum of the Geographical Functional Units, originated by the working, that is to say the relationships, between certain quantities of the geographical elements, directed by one of these which is responsible, in the end, for the organization and the final form in a certain space and for a limited time.

It is a fact that the forms which constitute the variety of the Earth's surface are very diverse, that is to say, the Earth's surface is not a continuous form, but the varied forms are those which happen in a continuous way. The great problem in Geography has always been to establish objectively the delimitation of these forms, (see LOPEZ, S. 1985, pp. 40-48).

If we continue analysing Professor Vila's masterly synthesis, the fundamental directions in which the geographers look for the definition of Geography, are:

> 1.- Geography studies "Elements or Aspects" (what we call "forms"); thus Geography is a science of the Earth, or, in certain schools, that its precise object is the landscape.
>
> 2,- Geography is especially a science which studies "Relationships" and, in this case, it is, fundamentally, an Ecology.

3.- Geography studies "Areas" and, in this case, one speaks of "Chorography".

History seems to confirm, through the Bibliography, that no geographer has been able to demonstrate clearly and convincingly that any one of these "directions" has nothing whatsoever to do with Geography. But in the same way it confirms, as Professor Vilá so well shows, that the agreement about what Geography is, becomes more and more remote and difficult: "The problem of the diversity of Geography -and not only that of the geographers- becomes greater if we take into account other aspects, especially that of the objects under study, and the approaches which, in any case and in a direct way, the geographer must analyse and bear in mind".

Part of the scientific method of the division of the science into different branches, is that each science has its own object, not various; and, on the other hand, as knowledge has progressed so quickly and deeply, it has been seen that one object can be studied by different sciences, in accordance with the point of approach of each one. Thus, at the present time, sciences are differentiated by the objet and the point of view of its study, or, what is the same, what gives unity to a science and makes possible its clear definition, is the concretion of its object of study and the determination of the point of view from which this object is studied.

In this conceptual framenwork of Science, Geography cannot have three objects of study:

1.- Forms.
2.- Relations.
3.- Areas.

Profesor Vilá has already pointed this out, in our previous quotation, and says that when Geography studies "Relations" it is really Ecology, which is the same as saying that it is not Geography. When it studies areas, it is Chorography, and although it is oldest tendency, it connot be considered as Geography, as it has clearly another name.

What remains, therefore, as the object of Geography, is what he calls "elements" or "aspects", and which we call "forms". We think that these terms can be considered synonymous in this case.

However, we do not want to forget what we have just said about the fact that the other two aspects, Relations and Areas, undoubetdly belong to Geography.

Whit respect to Relations, they are inseparable from Geography, but not as the object of the science, but as the cause of its object; as we have already stated, we understand the forms of the Earth's surface, which we call Functional Geographical Units, to be the result of the relation between the geographical elements.

We also consider space to be specially important in geographical science, as forms are material and, therefore, occupy space.

We have often wondered how those authors who think that the Relations are the object of this science can speak of the importance of space in Geography. Does a relation occupy spac? What occupies space is the result of these relations as forms: city, port, farm, village, etc.

The Functional Geographical Units do not only occupy space, but we can also say that they create spaces: by their configuration, their dimensions, their alternation or their sucession, repetition or individuality.

Notwithstanding this importance, we have never thought that space could be the object of geographical science. We do consider it to be one of the most representative geographical elements and which is of most importance at present in geographical studies; precisely because the present-day society is concerned about spacial organization, or what has been called territorial organization. In the same way, at the present time, sciences like Physics, Chemistry or Thermodynamics are making interesting studies about time. Authors like Ilia Prigogine, Herman Haken, K. Popper, Martin Gardner, to speak about or explain the laws of thermodynamics, need to go into the concept of time and its relations with irreversible processes. But these scientists do not consider time as the object of their science. They only show to the other sciences, or to the general scientific knowledge, the new or interesting aspects that they discover.

Really, it is the geographical science which should respond to the social demand for territorial organization and planning. But not by studying space, but the Functional Geogrphical Units. As a consequence of a beter knowledge, it would be able to deduce and foresee the characteristics of the spaces crated by these Units: beautiful space, efficient space, useful space, potential space, valuable space, cheap space, etc.

Geography is a spatial science, but not because it studies space directly, but because its object, the Functional Geographical Units -different forms which compose the Earth's surface- occupy space and create space, or, what is the same, give certain characteristics to the space, precisely through their configurations or forms, and also through their groupings. (see LOPEZ, S. 1985, p. 24).

CONCLUSION

Geography is interested in forms, relations and space; but this does not mean that these completely different realities are, all three, the objecto of this science. It would be interesting to clarify the place that each one occupies in geographical science.

We propose the following:

a) that forms should be the material object of Geography.

b) that the relationships should be the formal object or point of view from which the material object should be studied.

c) that space should be considered in Geography as a fundamental geographical element in the composition of Functional Geographical Units. This fact is endorsed because, from olden times until our days, for different reasons, the social demand has shown special interest in it.

Thus, our explanation for the lack of unanimity in the definition of Geography, is that no clear differences have been established between the material object, the formal object and the most relevant aspect which Geography apports to general scientific knowldge.

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