

SHORT COMMUNICATION

LANDSCAPE: WHERE GEOGRAPHY AND ECOLOGY CONVERGE

Freitas, S.R.

Laboratório de Vertebrados, Departamento de Ecologia, Universidade Federal do Rio de Janeiro, C.P. 68020, CEP: 21941-590, Rio de Janeiro, RJ, Brasil - E-mail:

sfreitas@biologia.ufrj.br

ABSTRACT

The word landscape is old and popular. It has many senses from territory to scenery. Geography uses this concept since Humboldt, which pointed out its spatiality and its physical and cultural characteristics. The geographical approach of landscape concept emphasizes relationships between natural and cultural processes in a spatial portion. Depending on physical or cultural/symbolic approaches, one of both processes will prevail. In ecological approach, the main characteristics to define landscape are spatiality, heterogeneity and relationship between elements, including men or not. Here we propose a unified landscape concept defining it as a heterogeneous space portion where relationship between natural and cultural processes occur.

Key-words: landscape, ecology, geography, nature, culture.

THE ORIGIN OF THE CONCEPT

The word landscape come from an ancient Indo-European idiom, brought out of Asia by migrant peoples thousands of years ago, and became the basis of almost all modern European languages (Latin, Celtic, Germanic, Slavic, Greek). The word was introduced into Britain some time after the 5th century AD by the Angles, Saxons and groups of Germanic speech. In addition to its Old English variations - 'landskipe', 'landscaef', and others - there is the German 'landschaft', the Dutch 'landscap', as well as Danish and Swedish equivalents. They all come from the same roots, but they are not always used in the same sense (JACKSON, 1984). The German 'landschaft', for instance,

can sometimes be a small administrative unit, corresponding to a district in size. As for the equivalent word in Latin languages, it derives in almost every case from the Latin 'pagus' meaning a defined rural district. In fact, the French have several words for landscape, each with shades of meaning: 'terroir', 'pays', 'paysage', 'campagne' (JACKSON, 1984). The Old English 'landscape' was used in the Dark Ages meaning a district owned by a lord or inhabited by people (MIKESELL, 1972). Thus, the ancient word to landscape was mainly associated to administrative division or territorial unit.

The modern uses of the word ('landskip', 'landscape') come from the end of XVI century and beginning of XVII century, when the influence of German and Dutch painters of landscape ('landschap') encouraged a recover and redefinition of landscape to express scenery representations, especially rural sceneries, or a particular scene. A popular conception of landscape has been a portion of land or territory that eye can apprehend in a glance, or area or scenery as seen by a human observer (MIKESELL, 1972). Until now, this landscape concept has been the popular conception of Portuguese 'paisagem', derived from a French 'paysage': 1. terrain space that it is reached in a glance; 2. painting, picture or drawing that represents a natural or urban landscape (FERREIRA, 1975).

THE LANDSCAPE CONCEPT IN GEOGRAPHY

In Geography, the landscape concept was matter of study since the beginning of XX century. Following tradition of Humboldt and other romantic naturalists, the word landscape was associated to relatively wide portions of space visually characterized by physical and cultural features sufficiently homogeneous to assume individuality (HOLZER, 1999). Carl Sauer, an American geographer, incorporated the word used in German geography, defining landscape as an area constituted of a distinct association of shapes, physical and cultural in same time (SAUER, 1998). The Sauer approach favored a morphological analysis of landscape, considering only the material aspects of culture. Nowadays, the cultural landscape considers subjective aspects of landscape, i.e., a meaning analysis or the value of landscape (MELO, 2001; SANTOS, 2002). TROLL (1997) considered landscape as a sector of earth's surface defined by a certain spatial configuration that results of an exterior aspect, of cluster of its elements and its external and internal relationships, limited by natural thresholds of other distinct landscapes. This definition is characterized by the functional approach, emphasizing the relationship between landscape elements that constitute an harmonious and interdependent cluster. TUAN (1979; 1980) considered landscape as an image, being a construction of mind and feelings. The Tuan approach is a fusion of functional and moral-aesthetic perspectives. To CORRÊA & ROSENDAHL (1998), cultural or geographic landscape results of action, along the time, of the culture on the natural landscape presenting simultaneously,

many dimensions that each epistemologic matrix favors. So, landscape has a morphological dimension, being a cluster of shapes created by nature and by human action; a functional dimension, presenting a spatial dimension; and a symbolic dimension, owner of meanings, expressing values, beliefs, myths and utopies. Thus, a multiplicity of meanings and values of landscape makes it difficult to understand this concept in its totality (PENNING-ROUSELL & LOWENTHAL, 1986).

In regards to the semantic plurality of the word 'landscape' along history, it is important to note that it always is associated to spatial sense (land, province, country, region, territory), as well as to notion of collection and group (GOMES, 2001). After all, landscape has been considered a hybrid conception, impregnated of nature and culture, natural and social processes (LUCHIARI, 2001). Depending on the approach, landscape can be linked to social and cultural matters or to natural processes. The meanings and values given to 'landscape' concept will favor one dimension more than others. However, it is possible define a concept of 'landscape' that fulfill all morphologic, functional and symbolic dimensions, without losing its identity. JACKSON (1984) defines 'landscape' as a composition of spaces created or modified by men to be used as foundation or background to our collective existence. Then, 'landscape' is a space created to accelerate or restrain natural processes. LUCHIARI (2001) supports this idea saying that 'landscape' always represents a material expression of sense given to environment by society. When JACKSON (1984) and LUCHIARI (2001) considered the interaction of men and nature, they approached a fundamental landscape property of relationship between cultural and natural elements. The relationship between elements is the basis of landscape definition used by TROLL (1997).

One use of 'landscape' concept in geography is to consider it as a dynamic system with spatial structure formed by natural and cultural elements (BOBEK & SCHMITHÜSEN, 1998). In this sense, landscape is an imprint made by civilization, and at the same time, a matrix because it participates in perception, conception and action schemes, i.e. of culture, that canalize the relation between society, space and nature (BERQUE, 1998). As BERQUE (1998) said, landscape as an imprint must be described through methodological instruments, if the subject which landscape relates to is abstracted. An example of these instruments is statistical quantification of landscape forms and the analysis of their relationships. To consider the direct relation of landscape with a collective subject, it is necessary to understand landscape in two ways. Landscape can be seen by an observer, caught by a conscience, evaluated by an experience, judged (and maybe reproduced) by an ethics and a moral, managed by a politics. On the other hand, landscape is a matrix, i.e., which determines this sight, this conscience, this experience, this esthetics and moral, this politics. So, landscape receives symbolic value, for instance, the cultural meaning of the polar landscape arises from its apparent invincibility by men (COSGROVE, 1998). This value given to landscape, which depends on its direct relation to subject, is called landscape perception (BRUNET, 1982). The analysis of landscape perception uses methods from social sciences because it depends on

the subject (PALMER, 1997).

THE LANDSCAPE CONCEPT IN ECOLOGY

FORMAN & GODRON (1986) brought the landscape concept to ecology based mainly on Troll's definition. They defined landscape as a heterogeneous land area composed of a cluster of interactive units that are repeated in similar form throughout. These interactive units could be geological forms, types of soil, local fauna, natural disturbance regimes, land use, and patterns of human clusters (FORMAN, 1995). To FORMAN & GODRON (1986) landscape has three basic characteristics: structure, function and change. This definition favors the morphological and functional dimension, forgetting the symbolic dimension and the cultural and social matters inherent to landscape concept. Thus, they disagree with the vision that landscapes do not exist a priori, as a nature data, but solely in relation to society (LUCHIARI, 2001).

To ZONNEVELD (1995), landscape is a complex of relationship systems, together forming a recognizable part of the earth's surface. He assumes that landscape is formed and maintained by the mutual action of abiotic and biotic forces as well as human action. Then he considers the role of men as an agent that produces and modifies a landscape. This definition is highlighted because all other ecological perspectives do not consider the human factor, a fundamental factor in the geographical perspective of landscape. NAVEH & LIEBERMAN (1994) also put humans into geosphere and biosphere. However, in ecological perspective generally the main characteristics to define landscape are spatiality, heterogeneity and interaction between elements (including men or not) (ALLEN & HOEKSTRA, 1992; METZGER, 2001; TURNER *et al.*, 2001). Landscape can be analyzed on multiple scales, so a bug in a leaf is in a landscape, as well as a forest fragment in a city (ALLEN & HOEKSTRA, 1992; ALLEN, 1998). A multiscale analysis favored by landscape can be the unique way to reduce the influence of change action of man, inherent to landscape. ALLEN & HOEKSTRA (1992) argue on fractal and multiscale properties of landscape showing that, in intermediate scales (for instance, forest fragments), human influence is larger than in continental scales, where topography is the main determinant of landscape structure. Then, it is expected that, in smaller scales (for instance, a bug landscape) and larger ones (for instance, global climate changes), human action should be weaker than in intermediate scales. In such case, relationships between natural and cultural processes constitute a gradient of influence on landscape foundation. Landscape is a relationship between nature and culture, but the more influent process will depend on the scale of study.

A UNIFIED LANDSCAPE CONCEPT

As in Geography as in Ecology, landscape concept is associated to spatiality, heterogeneity and relationships between natural and cultural processes in different levels depending on approach used. The ecological approach focuses spatiality, heterogeneity and relationships between natural processes (including men or not). The physical geography approach is characterized by focusing on spatiality and relationships between natural and cultural processes (mainly natural ones). The cultural and symbolic geography approach focus, at different levels, on relationships between natural and cultural processes (mainly cultural ones). Anyway, the difference between these approaches lies mainly on the perspective on morphological, functional or symbolic dimensions, used to study the same object, landscape. Then, landscape concept can be defined as a heterogeneous portion of space where relationships between natural and cultural processes occur. So, landscape emerges as a reconciliation possibility to geographical sciences *per se* and a contribution to represent natural and cultural elements encompassed by these sciences (GOMES, 2001). When landscape concept encompasses natural and cultural elements, it joins Natural and Social Sciences only in a spatial portion, and at the same time, with diverse approaches. In this sense, the sciences that study landscape, such as Cultural Geography, Geoecology and Landscape Ecology, have an open multidisciplinary field to discuss and to establish relationships favoring studies on different dimensions of landscape.

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