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What is *Landscape*? Towards a Common Concept within an Interdisciplinary Research Environment

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What is *Landscape*? Towards a Common Concept within an Interdisciplinary Research Environment

Landscape; definition; interdisciplinary research.

Introduction

The term *landscape* is used by a diversity of scientific disciplines maintaining different concepts and definitions. What is meant by “total character of an area of the Earth” as the explanation of *landscape* by Alexander von Humboldt?¹ In palaeo-environmental research encompassing a wide range of disciplines, *landscape* is a crucial term. With increasing interdisciplinary research cooperation between dissimilar disciplines, a basis for communication must be established. This includes an awareness of the differences of understanding while using the same word.

The aim of this paper is to survey an assortment of concepts and understandings of *landscape* and to explore the possibilities of a common concept in an interdisciplinary palaeo-environmental research field, shared by scholars from the humanities and natural sciences alike. Our overall concept of *landscape* is aimed at a “dynamic space of social, cultural, and ecological significance, which develops interactively with the human societies occupying it.”² The formulation of various facets of *landscape* might serve for a better mutual understanding.

Etymology

According to OED, *landscape* is derived from the Dutch *landschap* as technical term for painters. The polysemous word *landscape* allows at least two readings in the English language: either the view or prospect of natural inland scenery, or its painted or drawn representation within a picture or portrait. Both can be used in a generalized sense and extended in various figurative meanings showing a tendency in either direction: it is meant as the view or prospect of something, object of one’s gaze, sketch of a faint representation, bird’s eye view, or depiction of something, whether visualized or verbalized.

The combining form *-scape* denotes as well a view or picture of a specific type determined by the first element. *Landscape* seems to be the comprehensive term for several co-occurrent derivative forms.³ Other languages have similar notions, such as the German

1 “A. v. Humboldt umschrieb unter dem Eindruck seiner Forsch[ung]sreisen L[andschaft] als ‘Totalcharakter einer Erdgegend.’” Schenk 2001, 619. Schenk obviously subsumes Alexander von Humboldt’s “Aspects of Nature” (“Ansichten der Natur” Humboldt 1849).

2 <http://www.uni-kiel.de/landscapes/> (full general information).

3 Other compounds with the suffixoid *-scape* are for example *cityscape*, *hardscape* (man-made elements of landscape architecture), *icescape*, *junglescape*, *mountainscape*, *mudscape*, *offscape* (a distant view), *roadscape*, *rockscape*, *seascape*, *snowscape*, *streetscape*, *townscape*, and *treescap* (OED passim).

Landschaft, Dutch *landschap*,⁴ Spanish *paisaje*, French *paysage*,⁵ and Italian *paesaggio*. The approach of this paper will be to maintain no linguistic, but disciplinary viewpoints with the aim of creating a combined notion of *landscape*.

Landscape within Disciplinary Contexts

The following chapters describe the term *landscape* from disciplinary viewpoints and are written by a specialist from the particular field. They mainly focus on three issues. The term *landscape* is set within its hierarchy of technical terms from the respective discipline. Several parameters are named by which *landscape* can be described. And the significance of human influence is given in order to show its integration within the concept of *landscape*.

Art History

Various disciplines support the view that reality is composed not only linguistically, but also visually from time immemorial. The world is the image of the world.⁶ Art history often deals with images of *something*. The reason is that most recent and historic pictures are objective and have a reference to reality, whether being artistic compositions or not. Landscape images are representations of landscapes, e.g. as drawing, painting, or photography. Representation means that the impression or illusion of a landscape evolves in the mind of the observer, although it should be clear that it is a two-dimensional object made of some colored stains. Surprisingly, the relation to reality is merely a secondary level of meaning, whether it is an image of a real or fictitious landscape.⁷ The real object⁸ is only important in a second instance; more important is its perception as demonstrated within images.

In contrast to a natural scientific, materialistic approach most art historians implicitly assume that *landscape* is something to be looked at. *Landscape* does not exist on its own, but rather needs a perceiving subject. *Landscape* comes into being through a constructive act, and only in the imagination of an observer. This does not mean that there is no physical foundation for *landscape*. But the notion of a distinct and conceptualized “something” evolves in the imagination, and structures and elements within an environment are likewise perceived as coherent (and interdependent), so that it is called a *landscape* being distinguishable from other *landscapes*. The criteria for coherence and distinctive features can be quite different, e.g. the same geographic area can be called “periglacial plain” or “romantic heath.”⁹

Art history deals with a two-fold act of construction: the dichotomy of “perceiving subject—landscape” equals the dichotomy of “perceiving subject—landscape image.” Several landscape paintings and pictures make this visible by showing obviously contemplative people standing with their back to the observer, similar to landscape paintings by C.D. Friedrich. These paradigms are rarely picked out as a central theme within reference literature concerning landscape paintings. Most contributions do not ask what *landscape* is, but begin with the image itself, even though there are counter-examples.

4 “as scenery and as the area under a particular regime of administration” Antrop 2005, 23, 25.

5 “homeland of those who created it” Antrop 2005, 23.

6 Wuketis 2010 comprises anthropological and cultural foundations of the “visualistic turn.”

7 See also Gombrich 1967.

8 “Ding an sich” (see Kant 1783, 62–63).

9 Hard 1964 elaborates on geography as arts.

Implicitly, however, it becomes clear that the dichotomy between observer and *landscape* is constitutive, not only for art historic reflections, but also relevant beyond disciplinary boundaries. It is a fundamental principle for recent scientific thinking.

Classical Archaeology

Landscape Archaeology is a sub-discipline of Archaeology, and at the same time a supra-discipline that bridges Archaeology to a number of related fields, embedding it in a wider scientific context.

Landscape-related research (in traditional German Classical Archaeology) rarely used to discuss theoretical concepts of *landscape*. The respective scholars might either take for granted that author and reader share a common concept of *landscape*, so that there is no need for a discussion, or the way in which *landscape* is regarded manifests itself by research results, so that it should be self-evident.

In earlier stages of the development of Classical Archaeology as a discipline, Ancient Art was at the centre of attention. *Landscape* was perceived as the backdrop or setting, whose characteristics would have shaped the mindset of its inhabitants and therefore the artist's expression. In German, the term *Kunstlandschaft* was coined in particular in respect to Greek art. Seen from an historical perspective, *landscape* and settlement archaeological questions played an important role already in earlier days of research in the late 19th century, lost importance from the 1920s onwards and were revived in recent times. In most cases, *landscape* is perceived and studied as cultural landscape. It is the result of human action and forms a contrast to towns, which were crucial for the town-based societies of Greek and Roman antiquity. It can be observed that interdisciplinarity was at the heart of the discipline since its formation. In an earlier stage of its development, *landscape* was understood mainly as natural environment from the 1960s onwards, while aspects of social and cultural history became increasingly important from the 1990s. Since then, the perception of space and spatial organization has played a more significant role.¹⁰

Prehistoric Archaeology

The concept of *landscape* in prehistoric archaeology is closely connected with the term *cultural landscape*. It focuses on the relationship of past peoples with environments. According to B. Bender "*landscapes* are created by people—through their experience and engagement with the world around them [...] The landscape is never inert, people engage with it, appropriate and contest it. It is part of the way in which identities are created and disputed."¹¹

In Germany, the very beginning of *landscape archaeology* is linked to R. Virchow who started an inventory of monuments at the end of the 19th century¹² resulting in the creation of the research field *Siedlungsarchäologie* (settlement archaeology). This process led to the establishment of the subject of "Prehistory" while regarding the genesis and development of *Siedlungsräume* (settlement space) of certain groups.¹³ C. Engel already used the term settlement archaeology in combination with nature and human, questions about ecological condition arose in addition to this.¹⁴ Researchers left behind

10 See LAC 2010, 5.

11 Bender 1993, 1.

12 See Kossack 1999.

13 Smolla 1979/80.

14 Engel 1930.

the ideologically influenced notion of the term after the Second World War. H.J. Eggers tried to start a discussion with a new journal which focused on the central method (cartography) of settlement archaeology.¹⁵ H. Jankuhn concentrated on the research of settlement activities in connection with settlement history. Settlement history is closely connected to settlement archaeology, but geography, history of vegetation, subsistence strategy and questions of social matters are also parts of it.¹⁶ W. Janssen's approach centered on interdisciplinarity. Methods and questions of formation and development of settlements and settlement landscapes were in the foreground.¹⁷ According to A. Gramsch, landscape archaeology focuses on *Raum* (space) and culture-nature relations. Economical, socio-political and societal functions of a landscape are part of the interpretation.¹⁸ In order to reconstruct the prehistoric *cultural landscape*, J. Lüning described the methods of the landscape archaeology.¹⁹ Landscape archaeology encompassed different fields of investigation, such as the archaeology of settlement, economy, social system and ecology. Archaeologists apply methods and sources both from the humanities (historical sources) and natural sciences (such as survey, geographical information system, geomagnetic, aerial photograph, radiocarbon dating and vegetation analysis). The aim of landscape archaeology is to reconstruct the whole system of human activities, for example agricultural and mine production, and the exchange and trade system represented by settlements within their social structure.²⁰

Ecology, Palaeoecology

Ecological systems are defined by three components: structure, organization and functioning.²¹ These components vary along temporal and spatial gradients, constituting complex dynamic systems, with hierarchical levels.²² Landscapes, as one of those hierarchical levels, include several lower levels of structuring, organization, and functioning, such as ecosystems, and are themselves included in an upper level of structuring, organization, and functioning of ecological systems, e.g. in a regional matrix.²³ All these levels are internally and externally in interaction and interdependence (e.g. genetic flux between populations forming metapopulations). If the *landscape* level is one level of human observation of ecosystems, *landscapes* exist without human perception. The *landscape* level is characterized by the heterogeneity of temporal and spatial dynamics of its components, providing a mosaic of ecological systems. Several parameters and processes are specific for this spatial scale, playing a role as factors of structuring, organizing, and functioning.²⁴ Such parameters and processes can be measured and quantified, at least in parts, as far as current scientific knowledge allows, e.g. species richness,²⁵ biodiversity,²⁶ biogeochemical flux, trophic chains etc. Moreover, one important feature of *landscape* scale is the role of human population,²⁷ notably as a main disturbance for ecological processes, inducing heterogeneity of *landscape* components.

15 Eggers 1951.

16 Jankuhn 1977.

17 Janssen 1988.

18 Gramsch 2003.

19 Lüning 1997.

20 Lüning 1997, 280.

21 Lévêque 2001; Frontier, Pichod-Viale, and Leprêtre 2004.

22 Burel and Baudry 2000.

23 Aronson and Floch 1996.

24 Blaschke 2006.

25 Steiner and Köhler 2003; Dauber et al. 2003.

26 Waldhardt 2003.

27 Burel and Baudry 2000.

Geography

The concept of *landscape* has been discussed as a key term since the beginning of the 20th century. Passarge²⁸ defined natural landscapes as a “district which so far as possible represents a unit according to its climate, vegetation cover, modeling of the surface, geological structure and soil. Generally, all mentioned characteristics do not coincide; some must however agree to unify, if a landscape is to result.”²⁹ Passarge³⁰ continues that *landscapes* cannot be seen as a “single oneness,” but rather can be broken down to “sectional landscapes” according to relief forms, waters, soils and vegetation cover. Even though *landscape* has always been defined as an entity, geographers have usually chosen which part of the landscape they research. Some focus on physical properties and others on more social aspects or time. The concept of *landscape* is often mixed up with *region*, but in the hierarchy of terms, *landscape* describes an integrated spatial view, following *region* and *zone* in size. A *landscape* features the same regional characteristics as its adjacent *landscapes*, but differs in factors like topography, drainage, land-use, type of settlement etc. Importantly, although *landscape* is a geographical unit of relatively small size, it is large enough to be a representative section of the earth surface, with anything smaller is no longer being representative. This might be the reason for its popularity among geographers as a powerful concept. This richness of detail leads to the conclusion that each *landscape* is unique, albeit that it belongs perhaps to a landscape type that combines other individual examples. This uniqueness becomes especially strong when human aspects are integrated in the concept.

Geology

The opening sentences of Charles Lyell’s “Principles of Geology” clarify that geologists perceive *landscape* as the result of external and internal forces acting on the structuring of the surface of the earth.³¹ The birth of modern geology in the 18th century is linked to James Hutton who investigated the geologic settings while clearing and draining his farmland. Besides inspecting various compositions of rocks, he observed the landscape with respect to processes that might have formed them. It led him to the concept of uniformitarianism, assuming that natural laws and processes acting on the earth now, acted likewise a long time ago.

Although frequently used, the term *landscape* (also *palaeolandscape*) is not clearly defined in geology. Most likely, geologists have a similar definition of *landscape* to physical geographers and use it in describing geomorphologic features encountered in a certain environment. However, in contrast to geographers, geologists perceive a mountain range as the result of tectonic forces and the ideal place to study ancient rocks. Moreover, geologists use *landscapes* as analogues for past environments and relate observed processes in modern landscape (e.g. erosion, or sedimentation) to past processes according to actualistic approaches. Thus, their process-oriented approach requires the development of a four-dimensional view on landscapes looking not only at the surface and the depths below, but also back in time.

From a geocentric viewpoint, geologists would argue that factors which shape the landscape are geological forces of tectonics and erosion. More recently, the discussion about *landscapes* in geological terms has reached the next level as the debate on the

28 Passarge 1919.

29 Fairbridge 1968, 629.

30 Passarge 1921.

31 “Geology is the science which investigates the successive changes that have taken place in the organic and inorganic kingdoms of nature; it enquires into the causes of these changes, and the influence which they have exerted in modifying the surface and external structure of our planet.” Lyell 1830, 1.

'Anthropocene' has started. Within this context, it is discussed when and to what extent humans became agents in the transformation of landscapes, and thus not only leave distinct geological traces (that might still be visible in millions of years from now), but also alter the earth system into another state.

History

Historians approach the concept of *landscape* through two different perspectives. If they address history as the study of events related to human affairs (OED), *landscape* will be considered as the place where anthropogenic and non-anthropogenic elements interacted.³² Considering men's action on landscape, research, for example, tries to find out how humans structured the available environment and why. Considering landscape's action on humans, research focuses on phenomena such as migrations. Apart from mobility due to political reasons (exiles, deportations etc.) environmental and climatic changes forced (and still force) people to move, at first as a question of survival. The increasing intensity of extreme weather events, sea-level rise and acceleration of environmental degradation triggered population movements within borders. This had great consequences for public health, food security, water availability etc., both immediately as well in the long term.³³

On the other hand, dealing with the "history of ideas,"³⁴ historians investigate how humans have perceived their landscape. The research focuses on different concepts people used in the past. As an example, ancient Greek sources testify that the concept of *space* was founded on the belief that the natural landscape was transformed to anthropized space by humans fighting against the 'wild' space.³⁵ This idea legitimized the human appropriation of the environment and its exploitation by men: "plants exist for the sake of animals and that the other animals exist for the sake of man," says Aristotle.³⁶

In conclusion, the approach of historians on *landscape* includes the analysis of complex interactions between human factors and natural ones and the investigation of the perception of the environment by humans in the past.

Discussion and Conclusions

The term *landscape* is of crucial significance within a broad range of disciplines.

Art historians use *landscape* either as artistic genre or as the construction of nature, shaped within the mind of an observer. The natural scientific perspective considers *landscape* as a certain level of spatial reality by naming particular factors which shape it. On the one hand, these are quantifiable parameters (or processes), such as species richness or biodiversity in ecology, or topography, drainage or land-use in geography. On the other hand, the human influence is often part of the definition of *landscape*, as can be seen by its socio-economic and cultural-political significance in historical analyses or settlement types in geography. And the influence of humans on *landscape* also affects the definitions of other disciplines, as can be seen in Classical as well as Prehistoric Archaeology. It seems as if the concept of a "dynamic space of social, cultural, and ecological significance, which

32 Bernard and Sattler 1997, 102.

33 See IOM (International Organization For Migration) 2011.

34 It deals with the expression, preservation and change of human ideas in time: "The history of ideas [...] is especially concerned with the manifestation of specific unit-ideas in the collective thought of large groups of persons" Lovejoy 2009, 19.

35 Bearzot 2010.

36 Aristotle, Pol. 1256b16–22; see also Aristotle, Ph. 194a35 and 200b3.

develops interactively with the human societies occupying it” works.³⁷ But the human influence proves to be essential in terms of the narrow viewpoint of our self-concept, because the human development within landscapes is a substantial part of our research projects. Besides, the definition of “total character of an area of the Earth,” as ascribed to Alexander von Humboldt, does not seem to fulfill our demands in a sufficiently comprehensive manner. The solution lies rather in scaling between both positions:

- Either the human influence is essential, because it is present within the discipline itself and thus an integral part of all definitions and researches,
- Or the human influence is part of the definition although not explicitly needed. Because humans tend to shape nature in terms of own ideas, the differentiation between *natural landscape* and *cultural landscape* becomes evident here,
- Or humans are not a part of the definition of *landscape*.

But humans are an integral part even within disciplines from the third category (geology, ecology) because nature is observed from human viewpoints and methodologies and is described with human-defined features. It is thus shaped within the mind of an observer as it is defined in art history. Consequently, *landscapes* are always shaped through today’s construction of landscapes, whether in or for modern or prehistoric times, and whether with or without humans.

37 See above (Etymology).

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