

DOTTORATO IN
PAESAGGIO E AMBIENTE



SAPIENZA
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The Landscape as Union between Art and Science

Alexander von Humboldt and Ernst Haeckel

Book of Abstracts

Many worldwide institutions have celebrated during the year 2019 the 250th anniversary of the birth of Alexander von Humboldt and the centennial of Ernst Haeckel's death. Their contribution in the natural sciences, their cosmopolitan view and transdisciplinary approach offer an exemplary demonstration of the importance of interconnected systems. The concepts of what von Humboldt called "Naturgemälde" and Haeckel defined as "Ecology" imply global connections between biotic and abiotic realms. The pandemic has on one hand interrupted the celebrations and on the other, somehow amplified the importance of those contributions.

The PHD programme in Landscape and Environment of Sapienza University in Rome wants to discuss our current knowledge in the areas of landscape design and environmental theories and their relationship with the original concepts and insights of these two key figures. Researchers, philosophers, scientists, explorers and artists at the same time, their thinking attests the importance of holistic connections and of keeping together the scientific, humanistic and artistic approaches. The international conference wants to evaluate the modernity of their thoughts in our present time, their legacy in the theory and practice of landscape design.

The Wit of Landscape

Franco Farinelli, Geographer, Bologna

The concept of landscape enters to take part in geographic analysis thanks to Alexander von Humboldt. In the second volume of his *Cosmos*, which appeared in Berlin in 1847, the year before the movements which will bring in Germany the bourgeoisie to power, he traces the story of the models that have governed, from the outset, the vision of the world on the part of humanity. The whole reconstruction revolves around the strategic value held in the model of the landscape. Humboldt's true goal was that of tearing the German bourgeoisie away from its "vacuous poetic games", as Franz Mehring will later say, to provide it instead a knowledge which is capable of guaranteeing, through scientific knowledge, the control of the world. The field in which the realization of the humboldtian project takes place is the field constituted by the totality of the bourgeois public sphere. Humboldt decided not upon political but cultural revolution, hinging precisely on the concept of landscape and on the structural mutation of its function from aesthetic to scientific. This was a mutation that could only be realized starting from the artistic image, the sole image of nature then known to the bourgeoisie. In fact, it was necessary to transform bourgeois culture starting from its aesthetic matrix, to change pictorial knowledge, to which that culture was limited, into natural science, suited to domination and not solely to mere representation. The landscape, the pictorial view, was, according to Humboldt's strategy, the instrument of this transformation.

Nature, Science and Art in the Work of Ernst Haeckel

Rainer Willmann, Zoologist and Ecologist, Gottingen

Humboldt's aesthetic approach to science and Goethe's views about the relation between science and art determined Haeckel's thinking and work after his study years. Humboldt had written that „a common [...] bond runs through all of living nature.“ According to him, the task of the natural scientist was to describe the unified whole but also to consider the aesthetic features of nature. Haeckel, who was a gifted artist, went even further than Humboldt in combining science and art. Traveling and indulging in nature's beauties accompanied him the rest of his scientific life.

Like Humboldt and Goethe, Haeckel viewed everything as a part of a unified whole. He interwove descriptive biology, the theory of evolution including its philosophical outcome, the joy of nature and art. In his main work, the „*Generelle Morphologie der Organismen*“ from 1866, he developed a new comprehensive system of the sciences. He pointed out that a purely descriptive biology is no longer justified, its main task now lying in the field of explanations. This led him to state that „all true philosophy is science and all true science is philosophy“.

He developed a monistic view, and a unifying core principle he took was development. One of the main dualistic views he fought was the separation of mind and matter (or of body and mind). With Darwin's and Wallace's detection of natural selection as a main trigger of evolution Haeckel had a materialistic scientific foundation that he used as a tool against any forces that were opposed to scientific truth.

Darwin once stated that Haeckel was one of the few who clearly understood natural selection. This implied that Haeckel had a good understanding of the relation between environment and adaptation. Organisms live entangled in a large network of connections to the inorganic and organic environments. The effective environment against which organisms would be selected was not only a conglomerate of inorganic conditions but mainly a network of living beings.

In the “Generelle Morphologie der Organismen”, Haeckel coined and defined, along with an enormous number of other biological terms, the term “ecology” and thus helped to establish the research field known under this name. Haeckel even included humans in his considerations of biological interdependencies. The next step was the creation of still another field, “the science of the geographic and topographic spread of organisms”, biogeography (which he termed “Chorologie”).

Haeckel developed a strong aversion to the church, as its dogmas stood in incompatible contrast to science. Again, he accused the church for removing the beauties of nature from art, because Christian art was restricted to religious motives. Animals and plants as well as entire landscapes were displaced to the background at most. This way, Haeckel said implicitly, the church distorted man’s environment to a field of work and hardship while happiness could only be expected in the afterlife. Haeckel contrasted the church’s contempt of nature with the view that humans are a nature’s child. During his voyages he painted well over a thousand watercolours of landscapes, and gave detailed reports of his voyages. Haeckel hardly ever described landscapes shaped by cultivation but preferred untouched realms such as tropical forests instead. People he included in his sketches were obviously used in order to accentuate the motif he had before him. Often, they stressed that man is a part of nature. In his book „Arabian Corals“ (1876) he described and painted underwater landscapes, namely Red Sea coral gardens, but he soon switched over to evolutionary topics outlining the struggle for life in this breathtakingly beautiful environment. He never really separated the joy of nature from science, and both of them from art. His „Art Forms in Nature“ (Kunstformen der Natur, 1899-1904) showed single specimens, with the exception of one plate. However, a year after completion of the „Kunstformen“ he published his „Wanderbilder“ that consisted of forty paintings from the tropics. He knew well that the beauties he had depicted were threatened. As early as in 1854 he wrote his parents about forest destruction which makes the land inhabitable for all times and that such an intervention would create an entirely different climate. To summarize: In Haeckel’s view, the environment as a field of evolutionary adaptation, the interconnections he described as „ecological“ and which are closely related to the distribution of organisms (Haeckel’s chorology), and nature as he enjoyed it were densely interwoven.

When he depicted sceneries in his paintings and described them in a flowery language, he not only built a bridge to art but included art in science and in his unifying worldview.

Naturalist Inheritances and Contemporary Landscaping Practices in France: A Combination of Science and Art

Yves Petit-Berghem, École Nationale Supérieure de Paysage, Versailles

Although naturalist knowledge has been built up since Greco-Latin Antiquity, the foundations of ecological sciences are rooted in the inventory of living forms encountered during the great voyages of exploration organized in the 18th and 19th centuries by the European powers (France, England, Spain, Holland, Portugal).

Initially, ecology was not very interested in landscapes except those appearing over large areas, easily recognizable by their physiognomy, and whose distribution is closely linked to that of climates.

This search for rationality does not, however, exclude a more sensitive dimension where form is also that of the inventiveness of living beings, their capacity to adapt to environmental conditions and to provoke emotions, as Alexander Von Humboldt had already shown in *Cosmos* or in his *Essay on the Geography of Plants*. The reading of these forms provides information on the state of the environment or on the rhythms of the living, imposed by nature or by man.

This scientific inheritance is still present today in French schools training landscape gardeners. These designers create landscapes using data from the natural sciences and integrating the actions of human societies. By combining scientific approaches with sensitive and artistic approaches, landscape designers support the idea that ecology has refocused on man and his intimate relationship with his environment.

Today, this ecology is trying to renew itself by developing more applied approaches towards the territories. This evolution leads the landscape gardener to reconsider in his approach the relationship between nature and society and to develop an ecology that also integrates the sensitivities of the actors participating in the projects.

Cumulative Influences: Ecological Science, Practice, and Discourse in the Education of a Landscape Architect

*Anita Berrizbeitia and Pablo Pérez-Ramos,
Harvard University Graduate School of Design, Cambridge*

In as much as ecology has evolved over the past 200 years, so has its relationship to landscape architecture in both the academic and the professional contexts. This paper will trace the history of pedagogy in ecology in the department of landscape architecture at the Harvard University Graduate School of Design. It will do so through charting the intellectual histories that have coexisted in the department across three differentiated periods. It will first look at the time between the establishment of the department in 1901 and the rise of ecology into the public sphere in the early 1960s, in which soil scientists, botanists and other experts in earth science, taught through ecological ideas alongside environmental planning. It will then look at the last three decades of the 20th century and the first generation of landscape architecture faculty formally trained in ecology and who were teaching and practicing different methods of ecological science. Lastly, it will focus on the first years of the 21st century, with the eruption of ecology into the scope of the humanities and the development of ecology as a narrative. From scientific principles to fieldwork to the politicization of environmental issues, these three different forms of ecology—science, practice, and discourse—will be used as transects that describe the cumulative and multiple influences of ecology in design studio pedagogy, as well as the identity debates within the field itself.

**Humboldthain in Berlin:
Landscape Architecture, the Geographical Imagination, and
Education in Prussia**

Sonja Dümpelmann, University of Pennsylvania, Philadelphia

As the second of altogether four new public urban parks built in Berlin in the second half of the nineteenth century, Humboldthain was to honor Alexander von Humboldt not only through the park's name and construction begin on occasion of the polymath's one-hundredth birthday in 1869. It was also designed to educate the public about botany, native reptiles and amphibians, and geology. Within the aesthetic conventions of the time, Gustav Meyer and the designers who followed him, turned the park into a microcosm of von Humboldt's Cosmos. However, as much as the park was an expression of both empiricism and romanticism, and of the unified vision of nature and culture as exemplified by Humboldt, it soon also naturalized the colonial sentiment that was growing in Prussia in the years between 1880 and the First World War. The design, its educational aspirations and colonial entanglements both resulted from and supported the German Empire's educational objectives that increasingly sought to normalize and naturalize its colonial endeavors and territorial claims.

Humboldt's Tableaux as Administrative Poetics

Michael Lee, University of Virginia, Charlottesville

Contemporary landscape architectural education has largely abandoned composition and its aesthetic foundations as a central assumption of studio culture. Design, in the historical sense of a unified spatial arrangement, is increasingly set aside in favor of processes and open-ended developments that are only loosely guided by management practices. Moreover, unlike the landscape designers of Humboldt's era, who were gardeners foremost and who typically tended the same sites for years or even decades, today's designers work in urban offices far removed from the sites they influence. Not only do their daily activities differ fundamentally from their forebears, but designers' work flows and vocabularies more closely resemble the administrative culture of their professional peers in non-design disciplines. Studio culture is now producing managers rather than artists, equipped with a skill set foregrounding cartographic analysis, data visualization, and scenario building. Within a pedagogic culture so deeply imbued with administrative sensibilities and habits of seeing, it is difficult to ascertain where a poetics of practice might reside. Humboldt's tableau physique offers a potential way to reconfigure this contemporary dilemma. Although relying on similar practices of assembling, tabulating, and visualizing precisely measured data, it nonetheless operates within a semiotics that was assumed to be motivated by feeling and governed by aesthetics. By examining this endeavor within the framework of "sensible knowledge," first articulated by Alexander Baumgarten and others at the disciplinary founding of aesthetics, this paper explores resources within Humboldt's work that might help us reimagine the poetic potential of our administrative design culture.

Embracing reality? An experience of landscape theory teaching

Francisca Lima, University of Edinburgh, Edinburgh

Theory can sometimes convey a sense of refuge that might be shattered by a direct encounter with reality, but it can also be the point of departure for a better understanding of our surrounding realities. I hereby propose a discussion on the embracement of the world's complexity, local differences and global forces by exploring how landscape theory teaching can impact design making and fieldwork.

Humboldt's fascination with plants and rugged topographies, allied with a frantic need to travel and collect data directly from the field, allowed him to know plants by their names, but primarily by their places. Climbing mountains while observing multiple phenomena created the matrix for an understanding of topography as the carver of ecosystems and biotopes that is at the heart of landscape design practices. Although being fascinated by measurements and measuring instruments, he quickly acknowledged the equally important faculty of the imagination in the process of understanding the environment.

A five-year long voyage to South America was followed by two decades of writing as a reflective process of knowledge assimilation resulting in extensive literature later made available to the readers of the time and to all future generations.

I here argue for a revival of Humboldt's legacy as a continuous inspirational figure for a comprehensive and effective pedagogical approach to landscape theory and design teaching.

Process Cartography

Günther Vogt, Eidgenössische Technische Hochschule, Zürich

This talk aims to introduce the methodological framework of design teaching at the chair of Günther Vogt, known as Process Cartography. Starting with a complex question on a territorial scale, the aim of the design course is on the one hand to develop a concrete landscape architectural proposal. On the other hand, the focus is on recording and structuring the countless trains of thought that manifest themselves between the initial engagement with the site and the communication of the design project in digital and analogue media.

The intention is to produce a “map” of the entire design process that allows critical reflection on one’s own design practice and opens the door to imagination in dealing with the various design tools.

Scientific Curator:

Alessandra Capuano, Coordinator,
PhD Landscape and Environment, Sapienza

Guests:

Anita Berrizbeitia and Pablo Pérez-Ramos, Harvard University, Cambridge
Sonja Dümpelmann, University of Pennsylvania, Philadelphia
Franco Farinelli, Geographer, Bologna
Michael Lee, University of Virginia, Charlottesville
Francisca Lima, University of Edinburgh, Edinburgh
M. Yves Petit-Berghem, École Nationale Supérieure de Paysage de Versailles, Paris
Günther Vogt, Eidgenössische Technische Hochschule, Zürich
Rainer Willmann, Zoologist and Ecologist, Gottingen

Chair/Discussants:

Rita Biasi, University of Tuscia, Viterbo
Lucina Caravaggi, Sapienza University of Rome
Alessandra Capuano, Sapienza University of Rome
Piermaria Corona, University of Tuscia, Viterbo
Isotta Cortesi, University of Naples Federico II
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Sara Protasoni, Polytechnic of Milan
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Liliana Impellizzeri Laino, Phd Student, Landscape and Environment, Sapienza
Thania Sakellariou, Phd Student, Landscape and Environment, Sapienza

Promoted By:

PhD Landscape and Environment,
Sapienza University of Rome

Coordinator:

Alessandra Capuano, Sapienza University of Rome

Scientific Committee:

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Rita Biasi, University of Tuscia, Viterbo
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