SANDRA REBOK

Between Nature and Culture
Thomas Jefferson’s and Alexander von Humboldt’s interactions with the Natural World

The eighteenth century was not only characterized by a questioning of the old social order and the search for alternatives to the traditional structures in society and politics. Different approaches to nature, a more profound understanding of the natural environment and the interaction of Mankind with the Natural World was also a much debated issue. The European encounter with America had led to an intellectual confrontation within the field of the natural history as well as the ethnography of the New World. Thus new scenarios had appeared on the other side of the Atlantic, adding interesting impulses to the philosophical and scientific study of the relationship between nature and culture. Talking about these areas of knowledge, we have to be aware that in the early eighteenth century natural history had a different meaning from today: it was divided into Natural Philosophy – containing a more scientific approach to understanding, looking for the definition and description of nature and the physical universe – and Moral Philosophy, focusing more on the content of morality, and meta-ethical discussion of the nature of moral judgments and values.

This was the period of time when the Virginian politician, architect and naturalist Thomas Jefferson (1743-1826) as well as the Prussian traveller and scientist Alexander von Humboldt (1769-1859) grew up. These two personalities both participated actively in the exploration of the Natural World, as well as in the scientific debates of their time. Furthermore, they were two of many intermediaries participating in the transfer of knowledge between the Old and the New World, and demonstrated the importance of transatlantic communication in the open exchange of

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political as well as scientific ideas and information. After their personal encounter in 1804, during Humboldt’s visit to the United States at the end of his famous American expedition, for the next twenty years they maintained a personal correspondence in which they exchanged specific information as well as their opinions about the important events of their time. Due to their authority and position in their respective societies, their ideas had a particularly far-reaching historical impact, and were thus also of much interest to each other.

This text examines the interaction of Humboldt and Jefferson with the Natural World, to which both, conditioned by their personal interests as well as their respective historical backgrounds, showed a different approach. Furthermore, their contribution to the debate on the Nature-Culture relationship will be discussed, particularly those aspects concerning the impact of culture on nature and their early approach to questions which today are understood as environmental concerns and theories.

An approach from the Old World

From the beginning of his scientific activities, the Prussian clearly stated how he defined the aim of his research: to study, analyse and describe the Natural World. His concept of science envisaged the Earth as an indivisible organic whole, all parts of which were mutually interdependent. Humboldt regarded this synthesis as a harmonious unity and put his focus on the scientific analysis of the ways in which things and phenomena on Earth depend upon each other, in order to understand how the earth’s natural systems are woven together. According to this holistic view and his understanding of human society and nature as an interdependent system, Humboldt also looked for the interconnection of human and physical nature, an idea which later on inspired the term “ecology”?

Already in his work Geography of Plants, published in 1805, he expresses the idea which he develops in a much more detailed way in his final and synthesizing opus Kosmos, by stating that «[…] in the great chain of causes

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and effects no material, no activity can be considered in isolation». Thus to Humboldt plant geography was a crucial link between the natural sciences and the human sciences, which constituted a distinctive tradition of inquiry; it «persisted, developed and diversified throughout the nineteenth century». As he wrote in his *Personal Narrative of Travels*, he was more concerned with the distribution of vegetation and its relationship to climatic zones as well as other factors that affected the way it spread, and less with the mere description of individual plants or species:

> I was passionately devoted to botany, and certain parts of zoology, and I flattered myself that our investigations might add some new species to those which have been already described; but preferring the connection of facts which have been long observed to the knowledge of insulated facts, although they be new, the discovery of an unknown genus seemed to me far less interesting than an observation on the geographical relations of the vegetable world, or the migration of social plants, and the limit of the height which their different tribes attain on the flanks of the Cordilleras.

In his later years, in his magnum opus *Kosmos* – his scientific testimony, which articulated a grand theory of natural history – this concept was extended through the unification of all creation on earth, as well as everything in the universe, in order to present what he calls a “physical description of the world”. In the foreword to this publication he describes in detail his goal in relation to his holistic idea:

> The principal impulse by which I was directed was the earnest endeavour to comprehend the phenomena of physical objects in their general connection, and to represent nature as one great whole, moved and animated by internal forces. My intercourse with highly-gifted men early led me to discover that, without an earnest striving to attain to knowledge of special branches of study, all attempts to give a grand and general view of the universe would be nothing more than a vain illusion.

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Humboldt not only applied his concept to different academic disciplines and their interdependency, but also in a geographical sense to the connections between certain regions. It was the comparison between geographical territories he was interested in, including the connection between the political and social movements he was able to observe. He envisioned a program of comparative studies between America and Asia, a goal he had from the beginning, although finally he was not able to carry it out in the way he had planned, since for several reasons his Asian expedition had to be limited to his journey through Russia in 1829. Thus his view was always directed rather towards the relationship between Europe and America. As a consequence, although for him our modern term “Atlantic World” did not exist as such, he was fully aware of the interconnection of the different regions that form part of this world.

We also have to bear in mind that as far as both his period and his working methods are concerned, Humboldt has to be situated between two different eras: the Enlightenment and the Age of Romanticism. On the one hand, his scientific concept can be characterized as marked by the Enlightenment, which was evident in his use of measuring instruments in order to explore and understand the unknown world, or his method of establishing separate measurements in order to be able to compare them. In this sense, the methodology applied by Humboldt is considered pioneering and modern: he kept field notebooks, numbered and classified the specimens he found; together with his team he produced numerous scientific illustrations, and his research results were published with strict attention to procedure and detail. His integrative and global vision of the American reality, on the other hand, leading him to more general considerations, should be understood as an anticipation of the practices of perception of the Romantic period. In particular Humboldt’s approach to nature reveals how he moved between these two concepts: he put into practice the concerns of the Enlightenment – to organize and measure Nature to understand how each part functions – and included the focus of the Romantic Movement on the subjective element of perception in the description of nature.

Another characteristic of Humboldt’s approach to nature can be seen in his position between these two periods: he did not separate science and art, but used them in connection and as complements to each other. Thus the result of his American expedition is not only presented to us in written form, but also in the form of beautiful illustrations of different types of landscapes or specific parts of nature, for instance of particular animals or plants. With these artistic and visual presentations of scientific information he sought to show in a more obvious way the links between the different phenomena. Among his famous illustrations, for instance, are two cross-sections of mountains, one representing the Teide, the highest mountain in Spain, situated on the Canary island of Tenerife, and the other Mount Chimborazo in Ecuador, where he showed the different “zones of habitation”, i.e. the different kind of plants which grow at a particular altitude and in specific climatic conditions.

With his fundamental assumption that neither humans nor nature can be understood in isolation, that the human being is interconnected with its natural environment, Humboldt inspired what we now call an environmental discourse. In his writings nature plays an essential role, but not only in those publications dedicated to the representation of natural phenomena. A fundamental experience for all his theories and scientific convictions was his exploration of the different areas, landscapes and environments of the American continent. As a consequence of what he had seen and analysed during a very early stage of his expedition, in his work *Geography of Plants*, Humboldt was able to argue that cutting down forests causes climate change. In addition, the way in which he shows the consequences of deforestation, of exposing bare soil to heat and wind, or
the ecological damage caused by the European exploitation of their tropical colonies, through water shortage or mono-agriculture – an idea he develops further in his *Political Essay on the Kingdom of New Spain* – can be considered as important early steps into the field of environmental studies. Talking about the aridity of the central Mexican plains and the lack of trees in his work on New Spain, for instance, he states that: «These disadvantages have augmented since the arrival of Europeans in Mexico, who have not only destroyed without planting, but in draining great extents of ground have occasioned another more important evil»⁹. In the same line of thinking he had also observed and criticized the poor irrigation system established by the Spanish in Mexico, which according to him was going to make New Spain as dry as the metropolis:

> This diminution of water experienced before the arrival of the Spaniards, would no doubt have been very slow and very insensible, if the hand of man, since the period of the conquest, had not contributed to reverse the order of nature. Those who have travelled in the peninsula know how much, even in Europe, the Spaniards hate all plantations, which yield a shade round towns or villages. It would appear that the first conquerors wished the beautiful valley of Tenochtitlan to resemble the Castilian soil, which is dry and destitute of vegetation. Since the sixteenth century they have inconsiderately cut, not only the trees of the plain in which the capital is situated, but those on the mountains which surround it¹⁰.

Also in his *Personal Narrative* he mentions how «the first colonists very imprudently destroyed the forests» and as causes for the diminution of the lake of Valencia he again enumerates the destruction of the forests, the clearing of the plains, and the cultivation of indigo, among other factors¹¹.

It is interesting, moreover, that although he normally tended to limit his specific criticism of the Spanish government in its colonies, in the context of these environmental concerns he made his views very clear about his rejection of the colonial exploitation of other countries. Here he finds the opportunity to express his first warnings that in remaking the landscape the delicate natural balance would be affected, and that this

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¹¹ A. VON HUMBOLDT (1814-29), vol. 4, pp. 63-64, 142.
would lead to a destruction of nature and also to an impact on mankind, which formed part of the natural system. With his attempt to predict the consequences of human activities on the natural environment, Humboldt was thinking in a way that today we would call “global”. This way of thinking, and the subsequent analysis and understanding of facts, added much information to the study of nature and laid the groundwork for new fields of knowledge that are now known as climatology or ecology. Thus, inspired by this Prussian explorer, more than 100 years before the idea of an ecosystem caught on in the popular imagination, many of America’s first naturalists and scientists continued to explore this field of interdisciplinary knowledge.

An approach from the New World

Jefferson’s approach to the natural world was a different one from Humboldt’s, since he was born and raised on the edge of the Virginian frontier; thus from early childhood he was surrounded by the world of nature, unaltered by mankind. He loved Virginia, the richly varied landscapes, its flora and fauna, and yearned to be at home when he was away. His first home was Shadwell, the farm of his father Peter Jefferson, and it was there where he very early became a collector of minerals, plants, animal bones, insects and fossil shells. The young Jefferson was very much interested in the cycles of nature and became a close observer of nature; he learned directly from nature the rhythm of planting and harvesting, and lived in a balance with his natural surroundings. For his entire life he always tried to maintain this strong connection to nature, which provided him his personal tranquillity and balanced character, as shown in this famous quotation taken from a letter to Nemours: «Nature intended me for the tranquil pursuits of science by rendering them my supreme delight. But the enormities of the times in which I have lived, have forced me to take a part in resisting them, and to commit myself on


the boisterous ocean of political passions»\textsuperscript{14}. It was in his years in Europe, when he represented the young American nation in Paris, that his interest in natural science received a new impulse through contact with the leading scientists there\textsuperscript{15}.

Generally speaking, there were two sides of Jefferson’s attitude towards the Natural World: many aspects of wild nature appealed to his aesthetic side, to his heart: he always associated his greatest contentment with closeness to nature. In some of his letters, especially in those directed to women, and among them particularly his close friend Maria Cosway, Jefferson could also become very passionate about landscapes. His passion for nature can also be seen in the fact that in 1774 he purchased the 157 acres surrounding the Natural Bridge near Lynchburg, one of his favourite places in Virginia, which he called the “most sublime of Nature’s works”\textsuperscript{16}. When he visited this place for the first time in 1767 he sketched the bridge and made annotations in his Memorandum Book, which served as the basis for his famous descriptions in his work \textit{Notes on the State of Virginia}, the first publication on the Natural History of Virginia. In this description he not only contributed information about its size and geological formation, but also the very passionate impressions made on him by this natural wonder: «It is impossible for the emotions, arising from the sublime, to be felt beyond what they are here: so beautiful an arch, so elevated, so light, and springing, as it were, up to heaven, the rapture of the Spectator is really indescribable!»\textsuperscript{17}. Nevertheless, on the other hand he was also an intensely practical man. For him the nature he lived in was something to control, shape and change, since taming nature meant requiring detailed knowledge to understand its mechanisms\textsuperscript{18}. For Jefferson and his fellows nature had an

\textsuperscript{14} Jefferson to Nemours, 2 March 1809, \textit{Thomas Jefferson Papers}, Library of Congress.


\textsuperscript{17} \textit{Ibid.}, p. 25.

\textsuperscript{18} K. THOMSON, \textit{A Passion for Nature}, cit., p. 17.
active presence in their world; nature was what they encountered by working with it day by day, it was what they had to master and make work for them.

In his personal library the bibliography on the Natural World was quite intensive. Jefferson had publications of the best known natural historians of his time – Buffon, Linnaeus, Barton, Cuvier, Peale, as well as Humboldt – and was inspired by their works. Also in his own writings the word nature appears very frequently and in different meanings: he refers to nature in its basic principles, in a broader sense: natural law, natural right, American nature, natural reason, natural means etc. While for Jefferson knowledge was everything, it was best when applied directly for a useful purpose, since in early America practical matters had to be solved and he had to find solutions for imminent problems. As he confirmed in a letter to John Adams: “I am not fond of reading what is merely abstract, and unapplied immediately to some useful science”. It is important to bear in mind that for Jefferson the study of Natural History was not just a hobby, but was a crucial tool for his understanding of and his interaction with nature: «out of his passion for natural history, Jefferson developed the belief that nature is the guide to all that is good and pure and thus must be the basis of a person’s education and subsequently their general philosophy». This idea thus contrasted with the European approach to nature common during the Enlightenment, or the idea of nature prevailing afterwards during the Romantic Epoch. Finally, his idea of nature and the use of the word can even be understood as his form of nationalism: against Europe’s rich history and civilization, Jefferson puts America’s grand nature, which was essential for the country, providing the base which allowed it to prosper. Also, in his last years, when he was defining the


classes to be taught in the University of Virginia, he still championed the cause of nature: out of eight schools one was Natural History and another Natural Philosophy.

Like his Prussian counterpart, and according to the methods of the Enlightenment, Jefferson wanted to understand the world through his precise scientific measuring instruments. Despite a lifelong career in public service, Jefferson always remained a practicing and practical farmer; he was also a horticulturist, experimenting with many varieties of plants and vegetables, and converted Monticello and his other estates into progressive experimental farms, where new plants were introduced and nurtured. His interest in his gardens was connected to the agricultural and horticultural needs of the United States, but it was also a means to express in practical terms his knowledge as well as his love for nature. He was convinced that the introduction of new plant species would direct nature for man’s benefit; so Monticello was his observatory and laboratory, where he put his ideas into practice. Trying to find out what kinds of plants grow in Virginia and under what conditions was for Jefferson another level of devotion or contribution to his country and the American idea in general: «The greatest service which can be rendered any country is, to add a useful plant to its culture».

His interest in the application of the practical sciences can for instance be seen in his aspirations to produce wine in Virginia. As well as several other types of plants that he tried to make grow in the United States with varying success, his efforts in this sense can also be appreciated in his attempts to introduce livestock to his country, importing animals such as the merino sheep and sheep dogs.

Jefferson’s pragmatic interest in the sciences has to be understood in conjunction with his political mission. As a naturalist, he was personally fascinated by all kinds of scientific studies, simply because he was curious about the operations of nature. Nevertheless, he was always aware that he

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had two roles which he had to combine, as he mentioned in a letter to Harry Innes talking about Natural History and Politics: «The first is my passion, and the last my duty, and therefore both desirable».

Jefferson was not only interested in Natural History, but also in the different aspects of the present natural world surrounding him. In particular the Indian population had always been an important issue for him; his personal encounters with the native population began during his boyhood in Virginia and extended throughout his public career and into his retirement. Thus the particular situation of the Indians and all the connected debates had accompanied him during his entire life in different contexts: being among white farmers trying to obtain land from the native population; later with his political rhetoric towards native Americans during the Revolution; his proposals for scholarly studies of the indigenous languages, cultures and ancient origins; his political program regarding the Indians while serving as President of the U.S., in his effort to establish peace with the tribes of the Louisiana Territory; or encountering opposition to the civilization program from Native American religious and political reformers.

On numerous occasions he defended the Indians, in his Notes on the State of Virginia as well as in letters to his correspondents on both sides of the Atlantic. This defence of the native population can also been seen in the context of the debate on the assumed inferiority of the New Continent – his defence of American animals and plants as well as people.

Jefferson showed a rather scientific and political approach to Indians: he was not interested in them in a philosophical or romantic sense, common in Europe at that time, nor did he see them as objects of curiosity, or limit his interest to the fact that they presented an obstacle to the westward


expansion of the Whites. He wanted to acquire more knowledge about them and asked basically the same questions as did the European scholars: where did the Native Americans come from? What were the differences between the tribes and their languages? What were the real differences between Indians, Europeans and Asians beyond those that resulted from dissimilar circumstances? And what, therefore were the underlying similarities30?

The Lewis and Clark expedition, organized and dispatched by Thomas Jefferson in order to explore the American West (1804-1806), was also very much focused on obtaining detailed information about the native inhabitants of the regions they crossed, particularly concerning their languages and their customs. This interest becomes clear in the long instructions Jefferson handed over to Meriwether Lewis, revealing his convictions regarding the Indians: he told them to treat the native inhabitants with respect, to meet all native groups on an equal footing and to negotiate with them; and then to come back with information about their language, traditions, monuments, their laws, customs, or their relations with other Indian tribes31.

As a scholar he was also interested in understanding the native American population in their original conditions, before being changed by the influence of Europeans. It was a genuine interest he never lost and which contributed in a considerable way to develop the nascent disciplines of anthropology and ethnology, as well as comparative linguistics in the United States. By the end of his presidency, Jefferson had collected lists of vocabularies of some fifty different Indian languages, many from the efforts of the Lewis and Clark expedition; some others he had collected himself during his “northern Journey” with James Madison in 1791. As a politician, however, he held the hard-headed view that there were only two choices for the Indians: assimilate or to be destroyed. This led to the bizarre situation that on one hand there was Jefferson, the naturalist, who collected Indian vocabularies, the excavator of ancient burial mounds, chronicler of the eloquence of America’s native peoples, and the mourner of their tragic fate; and on the other, Jefferson the imperialist and architect of Indian removal. Nevertheless, these are the two sides we encounter in many different situations or contexts of his life and which are characteristic

of the context he lived in: Jefferson, the scholarly scientist, in his role as president of the *American Philosophical Society*, expressed himself and acted differently from Jefferson the politician, engaged in the making of a new nation.

As we can see, Humboldt’s and Jefferson’s approaches to the Natural World have several coincidences or aspects in common, in spite of the obvious differences in their upbringing and the context they lived in – Jefferson as a Virginian countryman and Humboldt as a cosmopolitan person. No doubt this can be partially explained by the enlightened spirit of their times. But beyond that it also shows a similarity in their minds and personal interests, which became the basis for the lifelong lasting friendship and interest in each other’s actions and thoughts.

In both cases their approach to and understanding of nature was basically marked by the postulates of the Enlightenment – they measured all different aspects with their beloved scientific instruments. Nevertheless, years before the Romantic era started, with its particular understanding of nature, in their letters as well as their writings they also expressed a Romantic approach to nature and showed themselves impressed by the majesty of certain landscapes.

Furthermore, both were involved in the philosophical and scientific debates of their time, such as for instance the assumed inferiority of America, and aimed to acquire new knowledge in different fields, through bibliographical research, through the application of information resulting from their own experiments, as well as from the exchange and comparison of data, theories or ideas with other learned men of their time. The transatlantic perspective in this context in particular is an aspect that characterized their methodology in the Natural Sciences. They also had in common that none of them specialized in one particular scientific field, but both were aware of the importance of understanding the interconnectedness of natural phenomena. Even in their view of mankind as closely linked to nature, their studies were developed independently from each other, but in the same direction: It was not only Humboldt who pointed out the connection of climate and soil formations with the distribution of plant and animal life, as well as the importance of the relation of the geographical environment to the development of mankind, particularly in the context of colonization, commerce and industry. Jefferson, too, touched on all phases of the natural history of a region in his *Notes on the state of Virginia*, and did not confine himself to a mere
enumeration of towns, boundaries, inhabitants, industries, products and the form of government in Virginia. Thus for instance he describes not only its rivers, but also their relationship to commerce and especially to their possible utility in trade; he furthermore classifies the plants and trees as to their value for ornamental, medicinal and esculent purposes and includes comparative views of America’s native birds and animals with those of Europe. Jefferson also correlated the data he found with different phenomena, and studied the impact of the elimination of the forests on the change of climate or the impact weather had on mankind. The difference is that Humboldt was basically a scientist and was therefore not only able to deepen his ideas and develop his theories based on them, but also to expand his scientific ideas in a much broader way. As a consequence, today Humboldt is considered to be an important forefather of modern environmental thinking, whereas Jefferson’s early contribution to the fundamentals of ecological concerns remains rather neglected.

Abstract

This contribution defines the approaches taken by the Prussian explorer and scientist Alexander von Humboldt (1769-1859) and the Virginia statesman and naturalist Thomas Jefferson (1743-1826) to nature and examines their respective understanding of and interaction with the Natural World. Though conditioned by their personal interests as well as their respective historical backgrounds, they showed a different concept of nature, both took a global perspective and shared a marked interest in the advance of science and the scientific exploration of the New Continent: Humboldt through his own American expedition (1799-1804) and Jefferson through the Lewis and Clark Expedition (1804-1806) he organized and supervised during his presidency. Furthermore, both formulated a clear response to the ideas of Buffon and de Pauw with respect to the assumed inferiority of America—one from a European, the other from an American, point of view. Finally, particular attention will be paid to those aspects concerning the impact of culture on nature and their early approach to questions regarding the relationship between man and nature, which today are understood as environmental concerns and theories.