

Alexander Humboldt

Alexander Humboldt (1769-1859). Along with Karl Ritter, Alexander von Humboldt is considered to be one of the fathers of modern geography, although at the outset nothing seemed to destine him for the discipline. His work appears first of all as following on from both the encyclopaedic and the universalist traditions; the German Aufklärung and the French Enlightenment. Thus his work draws at once on the notions of Kant, among which Sapere Aude, and on Rousseau, in particular the notion of the direct knowledge of the world. Steeped in French and German culture through his parents, Humboldt thus underwent several influences. While his brother, Wilhelm, chose letters and philosophy, he opted for natural history, with the aim of satisfying his lifelong curiosity; understanding the world, from the smallest to the largest of its phenomena. His first studies were oriented towards zoology and above all botany. His first work as a geographer was an "Essay on the geography of plants" (1805), deriving from his botanical studies. Starting from the consideration of plants, in particular when he was working on the vegetation of the Freiberg mines, Humboldt began to wonder about phenomena of localisation, distribution and migration of species. These same questionings were later to be extended to geography.

While it was indeed botany that gave impetus to his scientific and geographical questionings, it was Humboldt's travels that really made him a geographer. His work is backed up by repeated, methodical contacts with the field. Between 1800 and 1820, he was widely referred to as the "second discoverer of America", following a journey lasting five years (1799-1804) through Central and South America. In the company of the botanist Aimé Bonpland, between 1799 and 1804 Humboldt travelled in Venezuela, the Amazon and Orinoco basins, Peru, parts of the Andes, Cuba and Mexico, and ended with a short stay on the east coast of the United States. Compared, as a result of this, to Columbus, Humboldt stands out first of all for his talents as a traveller. The fallout from this expedition was vast in editorial terms and for his celebrity. The journey was a turning-point for him in his career, since it gave him scientific legitimacy across Europe. His field experiences did not stop there. His desire to see the world led him to plan new enterprises throughout his life: setting out on a journey was one of the motivations of his life. He explored a large part of Europe and Asia, and in particular made a journey to Russia in 1829. This passion for travel contributed to making the field a mainstay of modern geography. Humboldt was as thorough in the preparation of his travels as he was in drafting his books. For him, the realities of the field preceded the verbal and theoretical construction of the world, and in this he was in line with Karl Ritter. These travels gave him a vision of the world that he reappraised throughout his life. During his journey through Asia, Humboldt found reminiscences of his American observations, and this led him to conduct his work via a constant interplay of spatial comparisons. Each phenomenon studied in one part of the world gave him ideas about phenomena occurring thousands of miles away. This enabled him to connect realities occurring on the surface of the globe, and it is indeed the main principle behind his writings, in particular *Cosmos* (1845 et seq). While advocating a cosmographic view of the world, he used all scales of geographical analysis to show how different phenomena across the globe are linked: "To have a general picture, to apprehend the links among different phenomena, links that we will call Nature, we first of all need to know their extent, so as to view them organically from one and the same viewpoint" [Letter to Pictet dated January 3rd 1806 (Humboldt, 1905:208)]. He is thus part of a process of transition from the geography of Enlightenment, mainly cosmographic, to a modernised discipline focusing on larger scales.

According to the analysis by Ottmar Ette, Humboldt proposes "a science in movement and from movement" [Eine Wissenschaft in Bewegung und aus der Bewegung" (Ette, 2009 a: 16)] - that is to say science that operates in the field, in close contact with the world, observing the evolution of phenomena, since for Humboldt nothing is static. Quite the reverse, for him the world functions by way of an infinite number of plural relationships between the places and objects making it up. His *Cosmos* is the culmination of his geographical conception, as set out in the preface: "Through the vicissitudes of my life and the thirst for knowledge applied to very varied objects, I found myself concerned, in all appearances almost exclusively and for a number of years, with particular disciplines: botany, geology, chemistry, astronomical positions and terrestrial magnetism, which were to prepare me for a distant expedition. The real purpose of these studies was in fact a higher purpose. I wanted to apprehend the world of phenomena and physical forces in their connectedness and their reciprocal influences" [Wenn durch meine Lebensverhältnisse und durch einen unwiderstehlichen Drang nach verschiedenartigen Wissen ich veranlaßt worden bin mich mehrere Jahre und scheinbar ausschließlich mit einzelnen Disziplinen : mit beschreibender Botanik, mit Geognosie, Chemie, astronomischen Ortsbestimmungen und Erdmagnetismus als Vorbereitung zu einer großen Reise-Expedition zu beschäftigen ; so war doch immer der eigentliche Zweck des Erlebens ein anderer. Was mir den Hauptantrieb gewährten was das Bestreben die Erscheinungen der körperlichen Dinge in ihrem allgemeinen Zusammenhange, die Natur als ein durch innere Kräfte bewegtes und lebtes Ganze aufzufassen.] (Humboldt, 2004 : 3)]. Thus he thought that a scalar and connected understanding of the world should lead from the smallest event to the most important general law.

Humboldt's work is not restricted to the theoretical and methodological sphere. He was also a prominent scientific voice. He was hyperactive in networks and had many relations, with a correspondence estimated at around 30 000 letters, and he also contributed actively to the circulation of geographical knowledge across Europe. He widely relayed information; he re-circulated and redistributed material, recommended young academics, and continually contributed to boosting any scientific enterprise. Anxious to ensure the independence of geography, he took part with Ritter in the creation of two geography societies and in their activities, the Paris Geographical Society in 1821 and the Berlin Geographical Society in 1828. Throughout his life he took an active part in the sessions and debates of these two institutions, demonstrating his attachment both to France and to Prussia. Unlike Ritter, Humboldt never held a university chair. He nevertheless delivered a series of more than sixty lectures on the "physics of the world" between 1827 and 1828, free and open to all in the Singakademie in Berlin, and very popular with the Berlin audiences. His success was also due to his publications. His *Relation historique* (historical narrative) describing his American journey which was published from 1814 onwards, was translated into ten languages and circulated across the world, as was *Cosmos*. Tirelessly, Humboldt worked towards the advancement of science in general, and geography in particular, regularly seeking the support of various European courts (French, Prussian and Russian in particular). Thus his network of relations was as much political as it was scientific, and his mastery of both French and German gave him visibility across Europe. From his many expeditions he brought back numerous specimens of plants, animals and minerals, with which he supplied museums and gardens in Europe; the Paris Natural History Museum, the Royal Botanic Garden in Berlin, or the Royal Science Academy in St Petersburg among others had the benefit of his work. Alongside, his relationships with politics were sometimes a little ambiguous: although he recognised the financial need to place his work under the patronage of powerful monarchs (Friedrich-Wilhelm III and IV of Prussia, the Tsar Nicholas I of Russia) he nevertheless fairly regularly, at least in the private sphere, denounced the resulting material and even intellectual constraints weighing on him. Despite certain paradoxes in his links with the world of politics, Humboldt remains in the service of power throughout his career, in the universalist perspective of *Aufklärung*.

His work is remembered rather differently in France and Germany. Alongside the work of his brother Wilhelm, Alexander von Humboldt's legacy is still remembered in contemporary Berlin: via Humboldt University of course, and also the future scientific and cultural forum Stadtschloss, at present being reconstructed, with the two Humboldts as patrons. Research centres have also been dedicated to Alexander von Humboldt, in particular the Berlin-Brandenburg Science Academy. In France, geographers still refer to him as a tutelary figure of the discipline, but he remains very much of a myth and all in all not as well known or understood. Ritter's work, probably via the advocacy of Elisée Reclus, and despite its complexity, appears on the other hand to have a wider audience in France. However there has been a timid but genuine interest for his career in recent years. Science historians and geographers are thus re-discovering the principles of Humboldt's science, not only for their historical value, but also recognising their present-day relevance. With regard to methodology, the need for contact with the field and to experience the world as the essential gateway to understanding and ordering knowledge provides a defining, sound base for the discipline. From a theoretical viewpoint, the promotion of a scalar, nested, hierarchised approach to space and its phenomena has a lot in common with present-day approaches. Finally, with respect to the production of geographical knowledge, there is plenty to be found in his cartographic innovations, where he combines two and three-dimensional representations of one and the same phenomenon [efn_note]See the vegetation profile for the Andes in the *Cosmos* atlas[efn_note]. This explains the immediate success of his *Cosmos*, translated into fifteen languages by the end of the 19th century, and pleads for a rediscovery of his work.

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