



## THE REALIZATION OF A DREAM: SPAIN'S ROLE IN HUMBOLDT'S AMERICAN EXPEDITION<sup>1</sup>

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In March of 1799, the Prussian explorer Alexander von Humboldt presented himself to King Carlos IV, together with his plan for a scientific voyage of exploration through the Spanish colonies in the New World. This meeting took place in the royal palace in Aranjuez, a picturesque little town south of Madrid, where Humboldt had gone with the firm hope of obtaining official authorization that would allow him to travel through those distant dominions. Although the crown hardly ever granted such privileges to a foreign citizen, at least not to this extent — and certainly not for a scientific enterprise that fell outside the government's control — his mission proved successful: the young traveler, of not even thirty years of age, was conceded an unprecedented and extremely generous passport as well as several letters of introduction and recommendation which would, over the next five years, open the doors to important people and institutions in the New World. Humboldt was delighted with the outcome of his negotiation, he was now in the fortunate position to begin the scientific expedition through the exotic parts of the world that he had dreamed of since his youth. Leaving a few weeks later from the port of La Coruña in northwest Spain, his voyage would take him through the extended territories of the *Monarquía Hispánica* in America, which at the time of his travels were divided into the viceroyalties of New Spain, New Granada, Peru, and the island of Cuba. At this point, a number of questions arise: How was it possible that the Spanish government, known for its secrecy with regard to any information related to its colonial dominions, would make such an exception

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to its policy? What was the expectation of the political authorities with regard to Humboldt's exploration voyage? And what did it mean for him that his ambitious scientific endeavour was prepared and undertaken in the frame of the Spanish empire?

The fact that Humboldt grew up in the era of the great expeditions, such as the voyage undertaken by Louis Antoine de Bougainville (1766-1769), Jean-François de La Pérouse (1785-1788), James Bruce (1768-1773), Carsten Niebuhr (1761-1767), Alessandro Malaspina and José de Bustamante (1789-1794), and those carried out by James Cook (1768-1771, 1772-1775, and 1776-1780), had a decisive impact on him. The descriptions of these adventurous journeys fascinated him from his young age and informed his approach towards the exotic world of the tropical regions, idealized by the philosopher Jean-Jacques Rousseau. With this same enthusiasm he read the works of Haller, Macpherson and Goethe that recreated nature or the return of the human being to his original state, supposedly far from civilization. Humboldt also obtained knowledge about this world through the works of the French writer and botanist Jacques-Henri Bernardin de Saint-Pierre (1737-1814), whose novel *Paul et Virginie* (1787) he read repeatedly; as well as the publications of his preceptor Campe, author of *Robinson, der Jüngere* (1779, Robinson the Younger) and *Die Entdeckung Amerikas* (1781/82, The Discovery of America). Although those books did not provide him with concrete information regarding the territories described, the way the exotic worlds were represented awoke in him a desire to get to know those distant and unknown regions. As a result, from his early years onwards he thought about undertaking a scientific expedition himself, and although in the beginning the destination as such was not defined, it was the vision of carrying out such an expedition of discovery that intrigued him as a professional and personal challenge. In his personal annotations Humboldt describes that particularly his first visit to London, during his travels with Georg Forster in spring of the year 1790, and particularly his encounter with the famous naturalist Joseph Banks, served as an important inspiration for the young Prussian, defining his own vocation as explorer (Ette 8).

Due to Humboldt's excellent education, the broad scholarly experience he had gained, and the publications he was able to present to international readers already at a quite early stage of his career, even before his American expedition, Humboldt began to be known beyond his own intellectual circles, and his growing fame began to transcend the borders of his Prussian

homeland.<sup>2</sup> In fact, his approach to the Spanish court was not his first intent to make this dream become real and organize such a scientific exploration voyage; it was rather the last option, after several previous attempts had all failed, for one reason or the other. When the French government decided in 1798 to undertake a circumnavigation of the globe, Humboldt—who happened to be in Paris at that time, visiting his brother Wilhelm and presenting his work at the prestigious *Institut de France*—received an invitation to form part of the group of naturalists on board. The expedition was initially commissioned to Louis Antoine de Bougainville (1729-1811), the famous explorer of the South Pacific and author of the book *Voyage autour du monde*. As Humboldt mentioned to his mentor in April 1799, the botanist and plant taxonomist Karl Ludwig Willdenow (1765-1812), it was Bougainville himself who had invited the Prussian to accompany him; a fact of which he was undoubtedly very proud. In addition, the conditions for Humboldt's participation in this exciting exploration project were extremely favorable. As he relates in the same letter, he was in the privileged situation to be empowered to equip himself with the required instruments from the national collection. In addition, his advice was asked regarding the selection of the scientific team, another important distinction and tribute to his growing fame.<sup>3</sup> At the French explorer's request, Humboldt even used this influential position to add Bougainville's fifteen-year-old son to the crew, for what was planned to be a five-year voyage to Paraguay, Patagonia, Peru, Chile, Mexico, California, the Southern Pacific, Madagascar and the coast of Africa. Therefore, when the Directory decided to replace the septuagenarian Bougainville as commander of the enterprise with the younger though less experienced explorer, cartographer and naturalist Nicolas Thomas Baudin (1773-1858), Humboldt initially seemed to be less than pleased about the change. However, while he was waiting for that expedition to start, he continued to carry out his scientific work in Paris, where he became acquainted with the French botanist Aimé Bonpland (1773-1858), who was

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<sup>2</sup> Prior to his American expedition, Humboldt had already published several books: *Mineralogische Beobachtungen Florae fribergensis specimen*, *Über die unterirdischen Gasarten und die Mittel ihren Nachtheil zu vermindern* and *Versuche über die chemische Zerlegung des Luftkreises und über einige andere Gegenstände der Naturlehre*.

<sup>3</sup> Humboldt to Karl Ludwig Willdenow, 20 April 1799, published in: Jahn and Lange (eds.) 662-663.

supposed to embark on the same voyage and happened to become his later travel companion. Bonpland would accompany Humboldt during the entire American expedition and work with him on the publication of some of its results, mainly the part dedicated to botany (Bell).

However, both for economic and political reasons, this scientific venture was at first delayed and would then face other obstacles. After becoming aware of these difficulties, Humboldt had to start looking out for other options. Luckily for him, as an heir to a considerable fortune from his parents, he was in a privileged economic position and he thus decided that this would be no hindrance to him and his ambitious scientific dream. This was the impulse to initiate his own expedition, inviting his new friend Bonpland to join him. Both naturalists left Paris in October 1798, attempting to initiate their scientific journey in other geographical areas. In the meantime, Humboldt had received from the Prussian diplomatic representation a passport in which Marseille and Algiers were mentioned as destinations. So they set off for Southern France and waited in Marseille until mid December for a chance to sail to North Africa, hoping to join Napoleon Bonaparte in his expedition of conquest in Egypt (1798-1801). At this point, forming part of this important scientific project, which included a group of 167 scientists, among them mathematicians, naturalists, chemists and geodesists, seemed to be an attractive alternative for Humboldt. It would indeed have been a prestigious appointment, and another way to develop his own scholarly pursuits in the setting of the political interests of France. Nevertheless, the declaration of war by the Dey of Algiers against France also made this project impossible. He received information about suspicion and even persecution of foreigners in North Africa, and in addition, if this was not enough to make him reconsider his plans, about the rapid expansion of the plague. This caused a strong commotion for Humboldt, as he describes in his diaries, once again his itinerary had to be modified (Ette 20). Hence, impatient to begin their scientific adventure, Humboldt and Bonpland decided to set off for Madrid, initially with the intention to spend the winter in Spain and then leave from there for the Orient, taking a boat to the port town of Smyrna, today's Izmir in Turkey, as he relates in the same letter to Willdenow. In his personal notes he mentions that Corsica and Tunes were alternative options that they discussed, nevertheless, the first was considered to be too small, too closely connected with France. Apparently at that moment Humboldt had already heard about the pleasant and mild climate in Valencia, so this seemed a more attractive option for the cold months, and from there they could easily get to Tenerife, the Cape of Good Hope or Brasil

(Ette 20). It seems that at that point for Humboldt all regional options were still open.

However, once in Spain, he would soon develop the hope to initiate his expedition within the Spanish colonies overseas, instead of the interests of the French government. Though it is uncertain at what point exactly this change of mind occurred, from his own narration it becomes clear that shortly after his arrival he already saw that the situation in this country was very favorable for his scientific endeavor. He became aware that his own project was easily combinable with the interests of the Spanish crown, particularly at this moment, as he pointed out, under the new Secretary of State, Mariano Luis de Urquijo (1769-1812), a favorite of both the King and the Queen and a strong promoter of science. Therefore, obtaining the permission of King Carlos IV for such a scientific voyage through the Spanish dominions—normally almost impossible, since the court in Madrid, like other European powers as well, followed policies intended to keep foreign travelers out of their colonial territories—seemed under these circumstances a realistic possibility.

Hence, his decision to come to Spain turned out to be crucial turning point for his project. Thanks to the important contacts Humboldt was able to establish in the capital, his time there could be used in an efficient way for the preparation of his expedition. Besides obtaining the official authorization, he also needed to prepare the project on a scientific level and, without doubt, Madrid was the best place to study the collections brought by previous expeditions and to meet some of the participants of those former voyages. In addition, another very important preparative task was of economic nature, since he had to contact a Spanish bank that would be willing to accept the letters of credit he had brought from Berlin and to provide, through its American subsidiaries, the amount of money he would need in the Spanish colonies. Humboldt was also lucky in this part of his mission and so, after the failures of his previous plans, all of a sudden this particular project promised to be successful.

### **Itinerary and Geographic Studies Undertaken**

With regard to the itinerary of his journey through the Peninsula we know that Humboldt and his traveling companion Bonpland, set foot on Spanish soil on 5 January 1799.<sup>4</sup> During their first days the two naturalists

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<sup>4</sup> In order to follow the Prussian's route through the Iberian Peninsula in detail and in chronological order, the following works can be consulted: Humboldt, "Über die Gestalt"; Humboldt, *Recueil d'observations*

took various geographical measurements in Gerona, then travelled to Barcelona, from where they went on excursions of several days to Montserrat and to Tarragona with the aim to visit Roman ruins. At the end of January, they continued on their way to Valencia and finally spent a day studying the archaeological sites of Sagunto and Morviedro Castle. Afterwards their path took them through the towns of Albacete, Alcázar de San Juan, and the valley of the river Tagus, finally reaching Aranjuez. Possibly it was already during their first visit to this town, on their way to Madrid, that they had a first encounter with the Ambassador of Saxony, Baron Philippe von Forell (1756-1808).

From Aranjuez it was just a relatively short way to reach the Spanish capital. They arrived on February 23, and stayed for a few weeks, initially as a guest of the Prussian *Chargé d'affaires* David Tribolet-Hardy, occupied with the preparations for their expedition in all different levels. In order to obtain the corresponding safe-conduct, they needed to travel back to the court in Aranjuez several times for audiences with King Carlos IV. During this time Humboldt also was occupied with the determination of geographical position, of the Palace of the Duque del Infantado in Madrid and the Royal Palace of Aranjuez. In the middle of May the two travellers left for La Coruña, on a road that would take them through El Escorial, the Pass of Guadarrama, León, and various towns in Galicia, such as Villafranca and Lugo, until finally arriving in northwest Spain on May 26, after a journey of almost two weeks. They would stay for ten days in the Galician town until the moment of their longed-for departure for America on June 5, on board the corvette *Pizarro*. However, their ship first headed for the Canary Islands, which offered for them the opportunity of a short stay in Tenerife between June 19 and 25. They spent these six days in Santa Cruz, La Laguna and Valle de la Orotava, where they took advantage of the time to undertake extensive observations and scientific studies, as well as to climb the highest peak in Spain, the Pico del Teide. This was an excellent opportunity, given Humboldt's specific concern for volcanoes and his early interest in the different climate zone and the conditions they offer for the growth of specific plants —reflections Humboldt would later develop into the concept of the *geography of plants*.

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astronomiques”, here: Vol. 1 (chapter “Observations faites en Espagne et aux isles Canaries”, pp. 3-33). Information on this can also be found in a letter addressed to Baron Franz Xaver von Zach, dated 12 May 1799 and published in Jahn and Lange (eds.), 667-676.

In this way, their journey through Spain also served as a scientific preparation for their challenging American expedition, since they undertook the same type of research with which they began their work on the New Continent. With his holistic vision his ambitious goal was to take measurements of every component of the New World, such as plants, animals, minerals and the climate, in order to understand different natural phenomena in their context and in their interdependencies. Though in Spain they would not yet apply all aspects of this holistic approach, they did take the opportunity to carry out a broad study, and to take geographical, geological and climatological measurements of the regions through which they were passing (Förster; Rebok, “Una doble mirada”; Puig-Samper and Rebok, “Sentir y medir”). Humboldt would test the new measuring instruments he had acquired in Paris: the sextant, chronometer, barometer and thermometer. Thanks to these modern scientific instruments, he was able to determine the altitude above sea level, as well as the astronomical situation of various enclaves of interest from a geographical point of view. In addition, he particularly investigated the geological formation of the Castilian plain, while his Gallic colleague devoted himself to the collection and classification of Hispanic flora. In view of the scarcity of previous studies available for this type of investigation, and the fact that in many respects their measurement of the Iberian Peninsula opened new horizons, their work was a valuable contribution to Spanish sciences. In this sense, we should call readers’ attention to the two topographic profiles—from Valencia to La Coruña and from Sierra Nevada to the Pyrenees— elaborated by these two travelers, pioneers in recognizing that Madrid is located on a plateau.<sup>5</sup>

### **Scientific Preparation in the Scholarly Community of Madrid**

During his stay in Madrid Humboldt lost no time in making contact with the scholars living in the capital. He was aware that at this moment Madrid was the best place to prepare a scientific expedition to Spain’s colonies, and

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<sup>5</sup> The result of Humboldt’s scientific exploration of the Spanish peninsula is reflected in two of his articles: Humboldt, “Notice sur la configuration” (Spanish translation: Humboldt, “Noticia de la configuracion” and the already mentioned article in the German journal *Hertha*. A Spanish translation of this article can be found in: Puig-Samper and Rebok, “Un sabio en la meseta”.

took full advantage of his time there. Here he was able to study collections and publications from previous expeditions undertaken by the Crown and to get in contact with participants of some of those recent exploration voyages to the New World. Humboldt took advantage of his time in Spain to establish an exchange of knowledge and ideas with the local scholarly community. This allowed him to discuss and compare the data that resulted from his own measurements with the scientific circles he encountered there. In addition, he generously offered instructions to his Spanish colleagues on the use of the latest scientific instruments he had brought from Paris.

A key figure in this connection was the already mentioned diplomat Forell, who had arrived in Madrid in 1791 as Ambassador of Saxony, and whose brother Humboldt had previously met in the German town of Dresden. Forell proved to be a key contact for our traveler, since he also had extensive knowledge in the field of mineralogy and was a strong promoter of the enlightened sciences. Thanks to these common interests, Humboldt struck up a personal relationship with the diplomat, which not only opened the doors of the court to the young traveler, but also provided important contacts with scientific circles in Madrid for the preparation of his scientific project. The Saxon diplomat introduced him, for example, into the *Círculo del Gabinete*, the Cabinet Circle, which belonged to the *Real Gabinete de Historia Natural*, the Royal Cabinet of Natural History. Inaugurated in 1776, it was composed of very skilled researchers, many of them of foreign origin. Among its members were the Frenchman Louis Joseph Proust (1754-1826), who had previously been professor of chemistry at the Artillery Academy in Segovia and was later appointed director of the Royal Laboratory, under the orders of Charles IV; the German geologist Christian Herrgen (1765-1816), professor of Mineralogy and director of the mineralogical section of the National Museum of Natural Sciences of Madrid (Parra and Pelayo); and finally Johann Wilhelm Thalacker, a young German mineralogist who was in Madrid in 1799. Proust and Thalacker provided Humboldt with all kinds of information about American minerals. Through them he established contact with José Clavijo y Fajardo (1730-1806), deputy director of the Royal Cabinet of Natural History and translator into Spanish of the works of George-Louis Leclerc (1707-1788), better known as the Count de Buffon.

During the time he spent in Madrid, Humboldt also contacted the members of the expedition led by Alessandro Malaspina and José de Bustamante y Guerra during the years 1789-1794, in order to take advantage of their knowledge and experience for his own project. The sailor and geographer José Espinosa y Tello (1763-1815), for instance, director since 1797 of the *Depósito Hidrográfico* (Hydrographic Center), facilitated the

Prussian guest the access to cartographic measurements made on American soil. His work was particularly praised by Humboldt, who explicitly acknowledged that he had been provided with valuable information by Espinosa y Tello. In addition, he seemed to have met Dionisio Alcalá Galiano, another collaborator of Malaspina on his travels around the world. Years later, during his stay in Mexico, he became acquainted with José's brother, Manuel Espinosa y Tello, also a participant of the Malaspina expedition and collaborated with him by passing on information and material. Humboldt's exchange with Louis Née (1734-1803), a botanist on the same expedition, proved to be very fruitful, particularly taking into account that the latter had brought back an impressive collection of plants to Europe. Among the mariners who contributed information for Humboldt's voyage, although there is no record that he met them all personally, we may mention Martín Fernández de Navarrete and José Vargas Ponce, two of the most notable scholars of their time, closely linked to the *Depósito Hidrográfico* in Madrid, as well as José Mazarredo, then Commander-in-chief, and Admiral Federico Gravina. Moreover, there is evidence of subsequent cooperation between Humboldt and Felipe Bauzá, Espinosa's successor as director of the institution, who was exiled to London after 1823. Among the Spanish astronomers, engineers and sailors who provided him with information for his work in America, and in some cases collaborated in the measurements taken in Spain, the Valencian mathematician and astronomer José Chaix, deputy director of the Astronomical Observatory of Madrid, deserves a special mention (Puig-Samper, "Un prusiano"; Puig-Samper and Rebok, "Sentir y medir" 109-114).

The Prussian traveler also benefitted from his time in the capital to establish contact with the scientific circle of the Royal Botanical Garden. Within this group the most reknown botanist was Antonio José Cavanilles (1745-1804), then director of that institution. Cavanilles was a disciple and friend of Laurent de Jussieu and also had literary connections with Willdenow, Humboldt's former mentor and botany specialist in Berlin. It was he who would make public the works of José Celestino Mutis, a Spanish physician and botanist resident in the colonies, whose guest Humboldt would later be during his extended stay in Bogotá, New Granada. In addition, the Prussian had the opportunity to study in depth the natural collections, collected by Hipólito Ruiz López and José Pavón in the expedition to Peru that they undertook in 1777 together with Joseph Dombey, that were housed in the Botanical Garden (Puig-Samper and Rebok, "Humboldt y España").

Finally, in Madrid and probably through Cavanilles, Humboldt was introduced to the official Chronicler of the Indies, Juan Bautista Muñoz

(1745-1799), who facilitated him access to historical documents that he himself had compiled from various archives with the goal to give evidence of the rich Spanish colonial history in the American continent. In 1770 Muñoz had been appointed *Cosmógrafo Mayor de Indias* by King Carlos III, and in 1785 he was in charge of the newly founded *Archivo General de Indias* in Sevilla. This institution collected and conserved for scientific purposes all the documents about the Spanish empire in the Americas, which until that time had been dispersed among various archives in Simancas, Cádiz and Seville (Bas Martin; Solano). At the moment when Humboldt met Muñoz, the latter was organizing the archive and preparing his unfinished work *History of the New World*, of which the first and only volume had appeared only a few years earlier, in 1793 (Muñoz). Based on this immense collection of documents, the work was written with the express intention of creating a new history of America with scientific aspirations and with a Spanish focus. Its production was again a commission of the Crown aimed to create a clear Spanish reply to the work of the Scottish historian William Robertson's *The History of America*, published in 1777, which represented solely English and French perspectives.

Already by 1799, before he began his celebrated voyage through the overseas colonies, Humboldt had become an important contact for the scholarly community in Spain. In spite of his relative youth at the time of his arrival in Madrid, the Prussian had developed an exceptional scientific career, with important international connections. Without doubt, the fact that Humboldt had obtained the full protection of the Spanish court for his scientific endeavor, also contributed to the circumstance that the scholarly community was extremely helpful and provided him with all kind of information that he required at that moment. This official support created a connection between his ambitious scholarly project and Spanish interests, and without this connection, we might wonder if the willingness to grant him access to all sorts of Spanish knowledge on their colonies, would have been possible to the same extent. This close collaboration occurred not only on the Peninsula but also later on the Canary Island of Tenerife, where he was consulted as an expert on various matters. All these different contacts and activities clearly illustrate that Humboldt was indeed interested in an interchange of scholarly knowledge from both sides. Also after his departure for the New World, as we shall see later, he continued to maintain close collaboration with his new acquaintances within the Spanish scientific world. Throughout his journey he would send them extensive reports describing his activities, together with the first results that they produced, which would be

published in the Spanish press while he was still in America Rebok, “La percepción”).

### **Diplomatic Preparation at the Spanish Royal Court**

The fact that Humboldt managed to obtain this unprecedented and unrestricted permission to undertake the planned voyage is partly due to his personal talent for diplomacy, his intellect as well as his numerous accomplishments that impressed the Spanish monarch. However, his contacts with influential figures also contributed to a great extent. Nor should we forget the peculiar circumstances that marked that moment in the history of Spain, in particular, the first signs of open discontent and political difficulties that were beginning to emerge in the colonies, which a few years later would lead to the independence movements. These developments had an influence on the administration of the overseas possessions, and consequently on their economic exploitation. At this point the monarch was confident that Humboldt could help him to improve efficiency in the use of the natural resources of these domains, especially concerning their mineralogical deposits.<sup>6</sup> Another expectation the crown might have had at this moment was that a collaboration with the Prussian’s scientific endeavor could shed a positive light on the nation. In this context we have to bear in mind that a rather critical vision of the country, known under the term *Leyenda Negra*, the Black Legend, was very widespread in Europe during that epoch. It was based on a negative interpretation of the political and scientific achievements of this country, showing a dark and backward image of this global power and its colonies. Being involved in such an ambitious international project, led by an already known and well-connected scholar was therefore expected to have a positive impact on Spain’s reputation as a supporter of the progress of knowledge. In particular, a major expectation for the nation was thus to gain valuable information through him about the mining situation in the Spanish colonies, as well as receiving his latest reports directed to the main scientific institutions in Madrid. It was also hoped that he would enrich their collections with new material and that he would spread news of the scientific achievements of the nation to the international scholarly community. Informing the world about the important contribution of Spain to the progress of knowledge—it was believed—would add to the prestige of the nation at a moment when it had already begun its decline.

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<sup>6</sup> For a critical interpretation of Humboldt’s activities in Spanish America within the colonial Spanish frame, see: Pratt, “Imperial Eyes” 116.

As a first step towards making contact with the Court, the ambassador of Saxony helped him to obtain a private audience with Secretary of State Urquijo. Forell showed him, Humboldt recalls in his account of the voyage, "that under the administration of an enlightened minister, Don Mariano Luis de Urquijo, I might hope to obtain permission to visit, at my own expenses, the interior of Spanish America. After the disappointments I had undergone, I did not hesitate a moment to adopt this idea." (Humboldt and Bonpland 13).

It was indeed a lucky circumstance for Humboldt that just shortly before his arrival in Madrid, just two days earlier, to be precise, Urquijo was appointed as new Secretary of State, a position he would only occupy until December 1800. Urquijo was born in the same year as Humboldt, in fact only a few days before the Prussian, and was known for his progressive ideas as well as his own interest in the advancement of knowledge.<sup>7</sup> Interestingly enough, when they met in the spring of 1799 they were both young men of only 29, who had nevertheless already achieved a great deal in their respective careers. Both had made important decisions for the progress of science, albeit in different ways. While Urquijo's own scientific interest also focused on the field of mineralogy, he was known too as the translator of Voltaire's work *Death of Caesar*, at that time forbidden by the Catholic Church. While in office, he did all he could to limit the power and influence of the Inquisition, which earned him the enmity of the Holy Office (López Cordón Cortezo). During his brief term several scientific undertakings had been launched, and it was also Urquijo who was instrumental in appointing the enlightened economist and writer Valentín de Foronda as General Consul and later as Minister Plenipotentiary of Spain to the United States, whom Humboldt would meet years later, at the end of his expedition, in Philadelphia. It is therefore not surprising that both personalities immediately connected in their larger goals and that the minister allied himself to Humboldt's scientific project, so that he arranged for him to have an audience with Carlos IV in Aranjuez during the month of March 1799. Regarding this audience at the Spanish Court, we have the Prussian's own testimony, who remembered the first encounter with the following words: "The king received me graciously. I explained to him the motives, which led me to undertake a voyage to the

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<sup>7</sup> Mariano Luis de Urquijo y Muga was born in Bilbao, northern Spain, on 8 September 1769.

new continent, and the Philippine islands,<sup>8</sup> and I presented a memoir on this subject to the secretary of state. Mr. Urquijo supported my demand, and overcame every obstacle. The conduct of this minister was so much the more generous, as I had no personal connection with him, and the zeal which he constantly showed for the execution of my projects had no other motives than the love for the sciences. I feel that it is no less a duty than a pleasure, to record in this work the services which he rendered me” (Humboldt and Bonpland, “Personal narrative”, 14-15).

The monarch in turn showed great interest in the Prussian’s plans, to the point of ordering that two extremely generous travel authorizations be issued to him and to Bonpland: one from the Secretary of State, bearing the signature of Urquijo, and a document from the *Secretaría de Gracia y Justicia de España e Indias* (Secretariat of Grace and Justice of Spain and the Indies), with the signature of the Minister of Justice, José Antonio Caballero. It should also be noted that the permission granted was notable for its wide scope and its strikingly liberal terms: The text of the passport issued by Caballero indicated that the bearer was authorized by the King to carry out any research and studies that he considered relevant, and clearly instructed the officials in all port cities not to cause any impediment to his scientific endeavor. The document drafted by Urquijo, a combination between passport and letter of recommendation, was more specific in its instructions and went into all possible details, to make sure that no obstacles or problems would be caused for the Prussian travellers. It seemed even to include Humboldt's own wording, making specific reference to the free use of all scientific instruments, without any type of restriction, including astronomic observations, or the collection without impediment of all sort of natural history specimen. In this case, moreover, the passport expressly stated that the Spanish administration should provide all the help that would be necessary (“todo el favor, auxilio, y protección que necesitasen”) and should send to Madrid all boxes with natural history collections that Humboldt would confide to them. Humboldt was well aware that this passport gave him complete freedom in the execution of his work, as he comments in the account of his travels. In order to dissipate any doubt that the viceroys in Spanish America might have regarding the nature of his expedition, he said, the passport clearly stated that “[I] was authorized to make free use of my instruments of physic and geodesy, that I might make astronomical

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<sup>8</sup> This reference reveals Humboldt’s initial goal of traveling to Asia during this expedition.

observations through the whole of the Spanish dominions, measure the height of mountains, examine the productions of the soil, and execute all operations which I should judge useful for the progress of the sciences." The astonishing aspect in this context, however, is not only the generosity in the wording of these passports, but also the speed with which they were issued: While his official presentation took place on 11 March, only four days later he already received the affirmative response, and the first passport, the one by José Antonio Caballero, was issued on 18 March, while Urquijo's more extensive document is dated on 7 May.<sup>9</sup> This can be seen as a surprisingly fast speed for an administrative procedure of this type and, in any case, is a clear indication of the interest of the crown to become part of Humboldt's ambitious project.

In return for this privileged treatment and unprecedented support, the Prussian happily agreed to his only commitment, explicitly stated in his passport, which was to send collections of seeds, plants and minerals to the most important scientific institutions in Madrid, the Royal Botanical Garden and the Royal Cabinet of Natural History. The safe-conducts were also accompanied by numerous letters of recommendation, which would guarantee them protection and assistance at all levels in the colonies of America. Humboldt was perfectly aware of the extent of such generosity, as he himself claimed that "never had so extensive a permission been granted to any traveler, and never had any foreigner been honored with more confidence on the part of the Spanish government" (Humboldt and Bonpland, "Personal narrative", 14-15).

An important detail that needs to be stressed, however, is that Humboldt received no financial support for this expedition project from any government or scientific institution, and that it was dedicated exclusively to scientific aims. Though Humboldt conducted the expedition with the formal approval and moral support of Madrid, he covered all expenses himself. This has to be recognized, both for its uniqueness in his period of time and as proof that no European government with possible imperialistic interests played any active role in his scientific enterprise. As a consequence of his economic independence, he was not obliged to follow any specific research

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<sup>9</sup> See documents related to the authorization process published in: Puig-Samper and Rebok, "Sentir y medir" 201-207. For more information, see also: Puig-Samper, "Humboldt, un prusiano".

program. Although also in this situation he had to make certain compromises with the political authorities, to a large extent he was able to pursue his own scholarly interests, adapting the itinerary and the scope along the way.

#### **Presentation to Carlos IV**

How did Humboldt introduce himself and his project to King Carlos IV, in order to obtain such generous permission and broad support from the Spanish court? How did he define his goal for this scientific enterprise? The documents with which he presented himself carry the date 11 April 1799, all were written in French and are particularly revealing of how he wished to be considered in Spain. The first step consisted of Forell explaining the project in a letter to Urquijo, presenting Humboldt as a mining expert and as a brilliant young man whose fame had spread throughout Europe.<sup>10</sup> What played in Humboldt's favor was the fact that the Saxon diplomat shared his passion for mineralogy, that he possessed an important collection of minerals, and that he was on very good terms with the Secretary of State. In his letter Forell asked the minister to be supportive to Humboldt's project, with which he intended to give a boost to science in Spain. Given the wording of the document, it can be assumed that Humboldt took part in its preparation, as he would also do in later years concerning his visit to the United States. Along with this letter Forell sent the King a detailed description of Humboldt's scientific life so far, in addition to a document describing his ambitious American project—in other words—a project proposal and a CV, as we might say today.

In the first document, his description of the voyage he envisioned, Humboldt depicts himself as an extremely ambitious scientist. Occupied for many years with the study of nature in Europe, he says, he was burning with desire to initiate a scientific expedition to the New World. For this reason, he left the position he held in the service of the Prussian King Friedrich Wilhelm III. The progress that had for some time been made in America in the chemical and physical sciences and the use of new instruments promised rich harvests for the naturalist. It was in the immense extent of the territories under the scepter of his Majesty, he continues, that the construction of the globe as well as the connection between living beings could be studied. These were the considerations that, with the approval of his own monarch, had brought him to the Spanish peninsula, where he sought the protection of the

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<sup>10</sup> Philippe von Forell to Mariano Luis de Urquijo, 11 March 1799, a Spanish translation was published in: Puig-Samper and Rebok, "Sentir y medir" 204-205.

crown in order to receive authorization to enter the New World. It becomes evident how skillfully Humboldt links his research project to the interests of the King of Prussia, giving it more important connotations and a more official character. In addition, this passage shows that even at that early stage Humboldt had perfectly defined what the scientific objective of his expedition would be: the holistic perception of the world in all of its manifestations, and its interrelations with other phenomena (Puig-Samper and Rebok, "Sentir y medir" 201).

The second document was an autobiographical text entitled *Notice sur la vie littéraire de Mr. De Humboldt* (sic), *communiquée par lui même au Baron de Forell* (Puig-Samper and Rebok, "Sentir y medir" 202-204). This *curriculum vitae* is a description of the activities previously carried out by the Prussian, among which he himself highlights those related to the mining industry, which would corroborate what was said by Forell in the official presentation of Humboldt. He mentioned his early research into the basalt mountains of the Rhine that led the director of the mining sites of Freiberg, Baron von Heynitz, to entrust him with the performance of various duties in his mining area. He also refers to the journey to Holland, England and France that he made under the direction of the famous naturalist Georg Forster, motivated by his mineralogical and naturalistic interests. His American project would be imbued with that same interest in mineralogy, thus acquiring an eminently practical purpose, which in his own judgment was also of undoubted interest to the Spanish Government. It probably also helped that in Columbus and Malaspina he had distinguished predecessors in his role as a foreigner at the service of the Spanish court. It is possible that this association contributed to the King's interest, imagining the mineral wealth that Humboldt could locate for him.

After a summary of his previous professional career, the traveler explains the aims of his expedition, and again creates the link with the Prussian crown by mentioning the fact that he had requested leave of absence from his professional services from King Friedrich Wilhelm III in order to undertake this great expedition. Humboldt adds, not without a hint of presumption, that the monarch, ignoring his request, appointed him *Conseiller Supérieur des Mines*, also increasing his salary and granting him permission to make this trip as a naturalist. Despite the generosity of this offer, he was obliged to decline, given that he would be absent from his homeland for a long time. This argument was aimed at reiterating his loyalty to the sovereign. In this document Humboldt also alludes to his book on galvanism (Humboldt, "Versuche"), fruit of his experiments on the nervous system, his studies on botany, carried out in Dresden, Vienna and Rome, as well as his discovery of

a new method of analysis of atmospheric air. In addition, he mentions the fruit of a collective effort with a group of chemists in Paris. He then refers briefly to another important credential—to the invitation pronounced by the French Directory to take part in the circumnavigation of the world captained by Baudin. Concluding his report, Humboldt requested the permission and protection of the Spanish monarch to undertake his American expedition, which would be the final culmination of a long-planned project.

Looking at the way the Prussian introduced himself to the Spanish authorities, we can see that although he also alluded to other aspects of his work, he nevertheless gave special importance to his experience in the mining field. Little did it matter that limiting his pursuit to this topic only was not aligned with the aims of his scientific project, which had much broader scope. We may assume that this was an example of Humboldt's diplomatic skills at displaying himself in the way that best suited him at any particular moment. It was clearly a very astute decision. He realized that with this knowledge he could be of importance to the Spanish court, and this was the ultimate point of his presentation: to see where his concerns could overlap with the interests of the Spanish government, in order to gain its support. Apart from any achievements he might make in the strictly scholarly field, which were still attractive to the Spanish government, committed as it was to the ideas of the Enlightenment, Humboldt hoped to see the interest of the Spanish crown stimulated by those other discoveries that might have an immediate translation into economic terms. Also his cosmopolitan background, his multiple voyages, and his experience in different parts of Europe were factors in his favor in the undertaking of such an interdisciplinary and international expedition around the New World. Last but not least, in addition to presenting his professional qualifications, it was extremely important for Humboldt to display his best image from a human point of view, emphasizing the appreciation that the King of Prussia showed towards him and the loyalty that he in turn, as a Prussian subject, professed to his monarch. He could thus be seen as trustworthy, honest, and aware of his debts of loyalty—something that could also be interpreted as a crystal-clear hint to the Spanish sovereign.

Both Forell, by presenting Humboldt as an expert in mining, and the latter, by phrasing his words in a certain way, had shown evidence of sound judgment. This aspect no doubt contributed greatly to the obtaining of such a generous permit, but beyond the practical interest of taking full advantage of his experience in the field of mineralogy, there was another very favorable circumstance: at that time Spain and Germany had already established relationships in this particular field. Numerous Spaniards studied at the

Freiberg Mining School, and several German experts in mineralogy worked in Madrid, among them the Heuland brothers, the aforementioned Christian Herrgen and Johann Heinrich Thalacker, as well as in the mines of Almadén, situated in the Sierra Morena (Pelayo and Rebok, "Un condiscípulo"; Pelayo and Rebok, "Fausto de Elhuyar"; Matilla Tascón 140-148 and 270-282). These experts had acquired a reputation, initiating a tradition, which Humboldt might have hoped to follow. Furthermore, the fact that the Spanish monarch was the son of Maria Amalia of Saxony (1724-1760), a former princess of the House of Wettin in Saxony-Anhalt, was another fortunate coincidence under the circumstances. This all contributed to a closer connection with the Saxon diplomatic representative, Forell, and to greater receptiveness for the ambitious projects of our young Prussian explorer.

The fact that this way to proceed was a successful decision, can be seen in the wording of both passports, where his study of the mines is reflected as the specific objective of this expedition ("continuar el estudio de Minas y perfeccionarse en el conocimiento de otros descubrimientos", Puig-Samper and Rebok, "Sentir y medir" 205-206). Interestingly, also in other diplomatic circles in Madrid Humboldt would highlight his interest for mineralogy as his main pursuit, and accordingly Mexico as the main destination for his exploration voyage, as the Danish ambassador Herman de Schubart, who happened to meet the Prussian almost on a daily basis in the capital, recalls in his letters. In these private annotations Schubart also makes an observation to how in his opinion Humboldt had obtained this exceptional travel authorization —by "having had the witticism to form an alliance" with the Saxon envoy Forell as well as the Dutch ambassador Johan Valckenaer, who both had an "enormous influence over the Queen and the young Minister." (Gigas 422)

In any case, Humboldt was very grateful to the Spanish government for making the realization of his dream possible and, as a token of this gratitude, along the entire duration of his expedition he would comply strictly with the obligations he had assumed with the court to provide the Royal Cabinet of Natural History and the Royal Botanic Garden with mineralogical and botanical collections he had gathered in the New World.

### **Pursuing Knowledge in the Context of the Spanish Empire**

Instead of carrying out his grand project in the frame of the French government, as Humboldt initially had envisioned, caused by the historic circumstances it happened to be the Spanish empire that would provide him with this unique opportunity. What did this mean for Humboldt and his

ambitious project? Though undertaking his expedition in the Spanish overseas colonies was not one of his first preferences, in the longer term it turned out to be the perfect setting for his scientific enterprise. First of all, Spain offered him a maximum of liberty for himself and for the development of his project. This liberty, the possibility to pursue all types of studies in all disciplines of knowledge, together with the full authority over his itinerary, including the possibility of modifying it along the way, was a crucial value for the success of his scientific enterprise. Apart from a few occasions, when he was explicitly asked by the colonial authorities to offer his expertise and prepare mineralogical studies, cartographic material or geographical reports, he was basically free to choose his own forms of collaborations. Any compromise on this aspect would have led to a very different outcome of his expedition. A second key advantage that the Spanish dominions could offer to him, was the enormous size of those territories, which gave him access to very different climate zones in the New World, from the Amazon rainforest to the ecosystems of the high plains and mountains in the Andes.

And on the other hand, what did this exceptional arrangement mean for the Spanish crown? Were the Spanish authorities at all worried, we might wonder, that Humboldt would have access to delicate information regarding their territory and pass it along to other nations? It does actually seem that during his visit to the royal court there was no real awareness of the consequences of Humboldt's independence as a scholar as far as the information that would come into his possession was concerned. The authorities may not have been conscious of this risk, or at least not of the extent to which he would actually take control of the knowledge produced. Nevertheless, shortly afterwards, when he initiated his travels through their possessions in America, suspicions seemed to have arisen within some political circles. A proof of this is the letter of alert that the viceroy of Nueva Granada, Pedro Mendinueta y Múzquiz, sent to the Secretary of State Pedro Cevallos, the successor of Urquijo in this position. This document, written in Santa Fé de Bogotá on 19 July 1801, reveals the close attention paid by the Spanish colonial government to the presence of a foreigner in its American territories.<sup>11</sup> Here Mendinueta declared that though he was well aware of the importance of scientific research, and in particular of the need to obtain precise knowledge of the geography of the viceroyalty, he made the case for some monitoring and surveillance to be carried out. While it was true that Humboldt's expedition represented a purely scientific journey, he argued, it was inevitable that in the course of it he would acquire a broad knowledge

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<sup>11</sup> *Archivo General de Indias*, Sevilla, Estado, 52, N.113/1/1.

of all areas of Spanish colonial policy, as well as its effects on the population, something contrary to the intentions of the Spanish Government. As things turned out, his concerns were justified; but there is no evidence that his alert had in fact led to any official instructions.

In any case, most likely he would not have been able to modify Humboldt's belief in the importance of the free circulation of knowledge, of which he was deeply convinced even when it was not aligned with the interests of certain governments, as was the case of Spain. In order to achieve his scholarly objectives he needed to make his findings public. This is the great difference in their respective understandings of scientific knowledge: While the Spanish crown had the stated aim of restricting and controlling any knowledge gathered in their colonies, considering it to be confidential in the national interest, Humboldt on the other hand saw it as a part of universal knowledge, to which everyone was entitled. Hence, we might ask, had the crown made a mistake in hoping to receive exclusive information from the Prussian about its colonial possessions that he would not share with other interested parties? Certainly, the Spanish authorities should have been aware of the impossibility of controlling the diffusion of knowledge the same way they had done with those expeditions that were financed by their nation. In these cases they did maintain the control over the results and were able use them as they pleased, publishing them entirely or partially, or just keeping them in raw form in the archives, without any further elaboration. This was clearly not possible in Humboldt's case.

However, providing him with the authorization to undertake this exploration voyage should not be seen as a mistake by the Spanish court, since Humboldt did comply with several of its expectations: Through him they indeed received valuable studies concerning the mining situation in their colonies, their principal interest. He also respected his task to report back and send collections from the New World. In addition, by spreading the word about the scientific accomplishments of the nation, of the past and the present, as well as pointing to those aspects of the colonial administration that he considered positive, at least in comparison to other European powers, he indeed helped to improve Spain's international reputation (Rebok, "La imagen de España").

Despite this promising start of his collaboration with Spain during his stay in Madrid, circumstances changed only a few years after his visit and the country went through a difficult political situation, resulting from the French occupation, the Peninsula War and the beginning of the independence movement in Spanish America. The political disorders also led to a deep fissure in the fruitful development of science in this country: Due to these

pressing domestic and foreign policy problems and the costs they involved, science in general was relegated to a secondary position. Thus, several scientific projects had to be finished in a very short time; a great number of scholars were persecuted politically, among them were many whom Humboldt had previously met and with some of whom he remained on friendly terms. In addition, only shortly after his departure, some of his new acquaintances from Madrid would pass away —Muñoz (1799), Cavanilles (1804), Clavijo (1806) and Herrgen (1816)— and both Proust and Bauzá left Spain. Without a doubt, all these circumstances contributed to the fact that after his return to Europe in 1804, there was a rather long silence from the government in Madrid, which lasted until the year 1830, when a new invitation to Spain was discussed (Rebok, “Una doble mirada” 261-266); and a few years later, in the 1840s, he received the political honor of the award of the *Gran Cruz de Carlos III* (Puig-Samper and Rebok, “El científico y la reina”; Puig-Samper and Rebok, “Virtuti et merito”).

Nevertheless, though Humboldt appreciated this belated recognition of his expedition by the Spanish crown, at that moment Spain was no longer in his sights, nor were his scientific projects connected to that country. Too much had changed since the months he spent on the peninsula in 1799: The years of enlightened reforms, of great benefit for the development of the sciences, had ended and been replaced by a repressive political system; while in America its colonies had turned into independent although likewise equally authoritarian republics. While those political upheavals were not favorable to any scientific enterprise, they particularly affected Humboldt’s long-term project, since the loss of the colonies in the New World considerably reduced the value of the information he was expected to provide to Spain. Whereas the Spanish empire was crucial for the preparation and execution of his American project, as a result of the significant political changes, the outcome of his ambitious work could not be used any more for the pursuits of this nation in the way it was expected. Due to Spain’s military and political struggle, and its definitive decline as a colonial power, his discoveries and achievements eventually turned out to have a much stronger impact on the development of the sciences in other nations. This, however, is an occurrence Humboldt could not foresee; with a different course of history, the accomplishments of this unprecedented voyage might have led to a stronger impact in Spain as well, for the newly acquired knowledge would likely have found fertile ground on which to take root and bear further scientific fruit for the benefit of the sponsoring nation.

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