

LALANDE ON AFRICA: science policies in late eighteenth-century France and the growing interest for the exploration of the continent's inner regions

By Jan Vandersmissen

Postdoctoral Research Fellow F.R.S.-FNRS
Director of the Centre d'Histoire des Sciences et des Techniques

Université de Liège, Centre d'Histoire des Sciences et des Techniques
17 Place Delcour, 4020 Liège (Belgium)
jan.vandersmissen@ulg.ac.be

1. Enigmas of an unusual dissertation

In his *Mémoire sur l'intérieur de l'Afrique* (An III, 1794-1795) Joseph-Jérôme Lefrançois de Lalande outlined a project that directly linked scientific exploration to the needs of the State. He urged scholars and State officials to join forces in the organization of voyages that would enhance man's knowledge of the geography and commerce of the African interior. He targeted an area yet unknown to Westerners separating Senegal from the Sudan. Lalande is essentially known for his work as an astronomer. Hence, it is far from evident to find Lalande mixed up with scientific activities in Africa. The questions we need to answer will therefore be: What motivated Lalande to pen down his reflections on a continent few people were interested in? Why did he focus on geography and commerce? What were his ideas? What sources did he use? From a broader perspective the dissertation allows us to analyze how Enlightenment views on Africa are reflected in a late-eighteenth-century dissertation of an intellectual who worked on the cutting edge between science and politics. We investigate Lalande's arguments against the background of commercial and political tensions between France and Britain, and try to situate the discourse within the context of the competing "science policies" of both states. The notion of "science policy" refers to the way a government applies the knowledge and expertise provided by the scientific world according to the needs of the country. The central theme of our investigation is how Africa "emerged" as an object of knowledge in the relationship between power and science in Western Europe.

2. The "science organizer" Lalande

Joseph-Jérôme Lefrançois de Lalande is one of those great men of Enlightenment and Revolutionary science who received universal acclaim. His life was one long scientific trajectory through the most prestigious scientific institutions of the time. Born in Bourg-en-Bresse on 11 July 1732 Joseph-Jérôme turned to astronomy more by coincidence. Under the influence of Joseph-Nicolas Delisle (1688-1768) and Pierre-Charles Le Monnier (1715-1799) Lalande followed astronomy courses at the Collège Royal in Paris. The young man was sent to Berlin for observations on the parallax of the Moon. It was the start of a brilliant career. Lalande is essentially known for his analysis of the data gathered by researchers who observed the Venus Transits, for the yearly publication of a nautical almanac, for research on stars, for the management of observatories, and, finally, for the organization of

educational programs. He was a member of the Académie Royale des Sciences and taught at the Collège Royal. Lalande got well integrated in the scientific bodies of the Republic. He became a member of the Institut National, headed the Observatoire, and seated in the Bureau des Longitudes. As a freemason and a member of the editorial board of the *Journal des Savans* he had an influential voice in culture and society. In that respect it must be stressed that Lalande's book reviews reveal a continuous attention for travelogues and geography. Lalande died in Paris on 4 April 1807.

3. The trouble of dating Lalande's writings on Africa

There are several versions of Lalande's dissertation. The one that is best known was published in the fifth year of the Republic (1796-1797) in the last volume of the series of the Old Académie (suppressed in August 1793). Exactly the same text had already been published in the third year of the Republic (1794-1795) as an independent dissertation issued by the Imprimerie des Administrations Nationales. Another version is even older: in 1791 the *Journal des Savans* published *Considérations géographiques sur l'intérieur de l'Afrique* and *Suite des considérations sur l'Afrique*. These papers contain nearly the same content as the *Mémoire* but it is clear they were not yet seen as definitive by the author. For our analysis we will therefore use the publication dating from 1794-1795. To identify the date Lalande wrote his dissertation, we have to take into account the fact that reference is made to a decree issued on 18 January 1791, establishing freedom of trade in Senegal. The text must have been created after this date. The issues of the *Journal des Savans* as well as the minutes of the meetings of the Académie confirm this. In fact, it is stated that Lalande started reading his text at the Company's Easter meeting on 4 May 1791 and continued at later meetings. Political turbulence, however, disturbed the editorial process. The memoirs of the years 1790, 1791, 1792 and 1793 were only published in 1796-1797. The fact that Lalande published his text also in the form of a separate edition in 1794-1795 is due to Étienne-Nicolas de Calon (1726-1807), director general of the Dépôt général de la Guerre who designed an ambitious policy for geography.

4. Structure and analysis of the *Mémoire sur l'intérieur de l'Afrique*

The *Mémoire sur l'intérieur de l'Afrique* consists of two parts. The first concerns the course of the Niger River. The second is about the possibility of traversing Africa from Senegal to the Red Sea.

A. Lalande's sources, arguments and claims with regard to the course of the Niger River

According to some scholars the Niger flowed from East to West, others claimed just the opposite. What confused and troubled Lalande was that people in the French territories in Senegal claimed that the Senegal River was identical to the Niger River which – so they believed – sprang far away in the East. Lalande had a tendency to agree with them.

However, Jean-Baptiste Bourguignon d'Anville (1697-1782), a prominent cartographer, had separated the Senegal from the Niger, the first flowing to the West and the second to the East. To Lalande the fact that with regard to the Niger's source there existed "seven or eight hundred miles of uncertainty" was unacceptable. In 1727 d'Anville produced his first map of Africa [Fig. 2], next to several regional maps – one of them showing the course of the Senegal River [Fig. 3]. In 1749 d'Anville produced a more accurate map of Africa [Fig. 4-5] which immediately became a reference. However, the problem of mapping the African interior incited d'Anville to elaborate a multitude of components in his *Mémoire concernant les rivières de l'intérieur de l'Afrique, Sur les notions des*

Anciens & des Modernes. Published in 1759 and illustrated with maps [Fig. 6-7] showing the Niger flowing to the east, it was the starting point of Lalande's critique.

Lalande decided d'Anville must be weakened on the basis of three "authorities", i.e. works written by authors who may seem surprisingly "old" to us: the first is the *Kitâb Nuzhat al Mushtâq* or *Kitab Rudjâr* written by Charif Al Idrissi (c.1100-c.1165). The second was Joannes Leo Africanus (c.1494-c.1554), a Moor who ended up at the papal court in Rome where he completed his geography of Africa around 1526. Lalande stressed that Leo Africanus visited Timbuktu where he had seen the Niger streaming, as he claimed, to the west. The third reference put forward was the Spaniard Luis del Marmol y Carvajal (1520-1600). His *Descripción general de África* was published in parts between 1573 and 1599. Lalande valued Marmol because he was familiar with the Sahara, and claimed he had met traders who followed the Niger upstream in the direction of Cairo, which meant the river flowed westward. One may say Lalande's "thrust" in these authors rested on "tradition".

Lalande's other "Africanist" readings fell apart in several categories. Some material came from historical geography. He had much esteem for Ptolemy (87-after 150) whose *Geographia* had been studied since the Renaissance. Lalande did not quote this work in a direct manner but incorporated it appreciatively when analyzing a critique on d'Anville formulated by Jean-Nicolas Buache (1741-1825). His *Mémoire sur la Géographie de Ptolémée, & particulièrement sur sa description de l'intérieur de l'Afrique* dating from 1787 confirmed the westward flow. Another group of suppliers of "reliable knowledge" consisted of linguists and translators. Lalande quoted Jean-Michel Venture de Paradis (1739-1799) and Joseph de Guignes (1721-1800), both Orientalists. Through them Lalande realized Arabic writings had potential to enlarge Western knowledge of African geography.

Eyewitness accounts written by contemporary residents or travelers in Africa were another source. On the one hand there were the merchants, administrators and military officers on the Atlantic side of Africa who noted down observations on daily life, geography and natural history. Lalande held in high esteem his compatriots André Bruë (c.1654-1738) and Michel Adanson (1727-1806), both active in Senegal. In the course of the eighteenth century appeared more accounts written by travellers who – driven by commercial or missionary objectives or by curiosity – dared to penetrate the territories outside the European sphere of influence. An example is the travelogue written by James Bruce (1730-1794), published in 1790. A third major source were the compilations of travelogues that won huge popularity in the second half of the eighteenth century. The most influential was the *Histoire générale des voyages* edited by Antoine-François Prévost (1697-1763).

But Lalande was profoundly affected by reading the *Proceedings* of the African Association, containing the results of the latest initiative taken by Joseph Banks (1743-1820). In the late 1780s Africa became the subject of a "Banksian" takeover. Under the impetus of the African Association coordinated operations enhanced British awareness of the "unknown" interior of Africa. The full name of this association which combined philanthropy with science and commercial initiatives is even more revealing: Association for Promoting the Discovery of the Interior Parts of Africa. As one can expect, the British research missions in Africa aroused interest from the French side. Lalande was a careful reader of the *Proceedings*, of which the first volume appeared in 1790. The first traveller sent on a mission by the Association was John Ledyard (1740-1791) who died un-heroically in Cairo after he had poisoned himself by accident. Of Simon Lucas (c.1766-1799), a traveller sent to Libya, one can hardly say he has been successful – he planned to cross the Sahara but returned after a few

hundred miles. Lucas had no field experience whatsoever, yet his report contained valuable geographical information collected with the help of intermediaries. From the 1790 edition Lalande quoted several data derived from the testimony of a certain Charif Imhammed, a merchant from the Fezzan who organized caravans to Tripoli. He again confirmed the westward flow.

B. Lalande's sources, arguments and claims with regard to the accessibility of the African interior

One can be surprised to learn that even if Lalande used a wide spectrum of sources to identify the course of the Niger, he had it wrong with regard to the river's direction of flow. Whereas he managed to bring together an impressive collection of what was then recognized as high-level scholarship, his analysis illustrates the relatively poor state of Western intelligence of Africa. On the other hand one may also draw the conclusion that Lalande took his wishes for granted. If the Niger really flowed west (*quod non*), its estuary must be situated in territories close to the French settlements in West Africa. And if it would be true that the Niger was in fact equal to the Senegal (*quod non bis*), this was even better, as the river could then unquestionably become a French gateway to Africa's "interior". That way the French would have direct and easy access to the vast landmass between Senegal and the Red Sea. The strategic and economic value of this region made it of interest not exclusively to geographers and naturalists, but also to State officials and merchants.

In the second part of his *Mémoire* one can discern how Lalande enthusiastically jumped on the wagon of Revolutionary change. He showed himself an advocate of the abolition of old privileges – even in Africa. On 18 January 1791 the Assemblée Nationale issued a decree on trade in Senegal, stating in article 1 that "Trade in Senegal is free for all Frenchmen". Hence, the old privileged company was disbanded. Lalande welcomed the new measure: "The decree [...] enables the nation to provide itself with trading posts that could give us access to this source of wealth. [...] It would be easier for the French than for any other nation to enter into this rich and curious country, and to teach to all of Europe all those new things". Inspired by the grandiloquent language of the time, he emphasized that the French should not only penetrate to the hearth of Africa but also establish relations there with local communities, thus contributing "to the perfection of part of humanity". But only by organizing science through cooperation efforts could become efficient. Lalande appealed to "administrators" to form an "enterprise" that would make an end to the existing ignorance.

In the third year of the Republic Lalande edited his *Mémoire* in the form of a booklet with the help of Étienne-Nicolas Calon, the head of the Dépôt général de la Guerre. This was not a coincidence. Calon was a man with a hearth for geography. He was one of those "administrators" who grasped the true meaning of Lalande's argument. Calon wanted to transform geography into a weapon that served the Revolution. He made efforts to establish geography as an autonomous science of conquest. Lalande certainly was pleased with Calon's support for his ideas on Africa.

In order to warm up economic and political decision makers for launching "enterprises" in Africa the old image of Africa had to be broken. For centuries Africa had filled people with dread. The common view held in Europe was that Africa was inaccessible, blistering and mortal to Westerners. Lalande on the contrary wanted to prove that the area south of the Niger was fertile and populous, with well-organized cities and villages, in short a region full of commercial opportunities. Lalande turned again to the linguists Venture de Paradis and de Guignes, the explorer James Bruce, and the *Proceedings* of the African Association to make his point. In addition Lalande mentioned the views of people who

had stayed a long time in Senegal and claimed to know how Africa's interior looked like: André Bruë and Michel Adanson, but also less known colonial and commercial administrators.

To demonstrate to his readership that the African interior was accessible, Lalande laid emphasis on the fact that African Muslims regularly and with apparent ease undertook the pilgrimage to Mecca while crossing deserts on foot. Caravan routes crossed the entire Sahara and the region south of the Niger. This century-old form of communication was proof of a system of intense trade that could be of interest to the French. The testimonials of the existence of large cities – in particular Timbuktu – underlined the importance of the trade routes. Confronted with this proactive attitude towards the feasibility of exploratory missions beyond the posts on the African coast, one must not be surprised by Lalande's conclusion. In his opinion the "enterprises" needed young Frenchmen who were acclimatized, knew to express themselves both in Arabic and African languages, were accustomed to the way of living of the local populations, and were not afraid to join a caravan. That way, really useful and curious knowledge on the African interior would be acquired for the good of the nation.

Concluding remarks

We have not tried to cover all the topics Lalande mentioned in his *Mémoire*. But we do hope we have demonstrated that Lalande's vast scope on Africa was due to his extraordinary capacity to summarize into one short essay almost a complete library of knowledge produced by various generations of European, Arabic and African actors – armchairs scholars, field observers and intermediaries. We are convinced Lalande's text offers an interesting case to value the importance of the exploration of "unknown" parts of Africa for the construction of a new kind of spatial knowledge at the end of the eighteenth century, one that we would like to qualify as "applied" and/or "multi-dimensional", as it combined the purely scientific with political, strategic and economic elements.

Furthermore, the *Mémoire* enables us to see how in the mind of an epigone of French Enlightenment thought, ancient, modern and contemporary knowledge traditions were tied together in a complex way. Indeed, century-old representations of Africa remained surprisingly vivid and got interwoven with new observation-based understanding. Our analysis shows to what degree academies and learned societies got implicated in the process of knowledge construction and accumulation. Furthermore the *Mémoire* demonstrates how at the end of the eighteenth century the definition of geographical truth was still a very complex issue: Lalande's views on the flow of the Niger were wrong not only because Mungo Park did not yet reach the banks of the stream to witness with his own eyes its course, but also because Lalande had a very eclectic attitude towards the sources he found trustworthy: in many cases he gave his peers in Paris preference above explorers in the absence of conclusive evidence.

Finally, one should not forget that the *Mémoire* came into being at a time that is in itself revealing: Revolutionary France again got implicated in wars with Britain. Growing economic competition marked the transition to a new era where technical innovation stimulated the exploitation of resources situated outside Europe. In Africa it was all the same: British "actions" provoked French "reactions" and *vice versa*. Thus academicians contributed to paving the way for a real breakthrough of imperialist science in the early nineteenth century, characterized by an amplification of operations, more direct government intervention, the growing significance of the commercial agendas of science, as revealed in the French military-scientific expeditions in Egypt in 1798-1801 and in Algeria from 1830 onwards, or in the British expedition to the Congo in 1816.