

# Scholars and Literati at the Royal Academy of Sciences of Lisbon (1779-1800)

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This note is a summary description of the set of literati who were members of the Royal Academy of Sciences of Lisbon from its inception in 1779 to the eve of the Industrial Revolution (1800).

## 1 THE ACADEMY

Founded in 1779, the *Academia das Ciências de Lisboa* (Academy of Sciences of Lisbon) was founded by Duke João Carlos de Bragança and Sousa Tavares Mascarenhas da Silva e Ligne. Its founding members also included the priest José Correia da Serra, a polymath and the academy's first secretary, and the Italian botanist Domenico Agostino Vandelli, a professor of natural history and chemistry in Coimbra who had been brought to Portugal by the Marquis of Pombal as part of the reforms he was undertaking at the university. From 1783, the Academy's public usefulness was recognized by the state and it began to enjoy royal protection (Queen Maria I and King Pedro III), obtaining the title "Royal Academy of Sciences of Lisbon," which it retained until the advent of the Republic in 1910. The creation of this academy fitted into the new strategy adopted by the Portuguese state with regard to its colonies. On the one hand, the academy became the place where the knowledge of the new discoveries and natural resources found in the Portuguese colonies was broadened, and on the other hand it became an instrument of the Portuguese state to reorient its colonial policy and to help the Portuguese economy recover after the crisis it went through in the last quarter of the 18th century. Among the principles that the academy set for itself were the primacy of experience, the defense of utilitarian knowledge, and the application of knowledge in solving practical problems related to the Portuguese economy, culture, and society.

## 2 SOURCES

To establish the list of its members, we relied on a list provided by the academy. This list was completed thanks to the *Memórias História e memórias da Academia Real das Ciências de Lisboa* (1819). The *Memórias* allowed us to find the names of members who participated in the activities of the academy. In addition, it was possible to accurately classify the status of its members and identify those who were full or corresponding members. Da Silva's dissertation (2015) also allowed us to add information and learn more about the academy.

## 3 SOME STATISTICS

Table 1 shows some descriptive statistics. There are 326 scholars and literati. 46.9 percent of the academics have a Wikipedia page, and half of them (50 percent) have left an imprint in the world's library catalogs, Worldcat. The median distance between the places of birth and the academy is 316 kilometers. This highlights the international nature of this academy, which included scholars from all over Europe and the Portuguese colonies.

Period		nb.	% birth year	mean age	mean age	exp. age
Start	End	obs	known	at appoint.	at death	at death
1734	1800	326	69.9	43.1	69	68
			% birth place	median distance	% with	% with
			known	birth-institution	Wikipedia	Worldcat
1734	1800		67.2	315	46.9	50

Table 1: Summary statistics by period

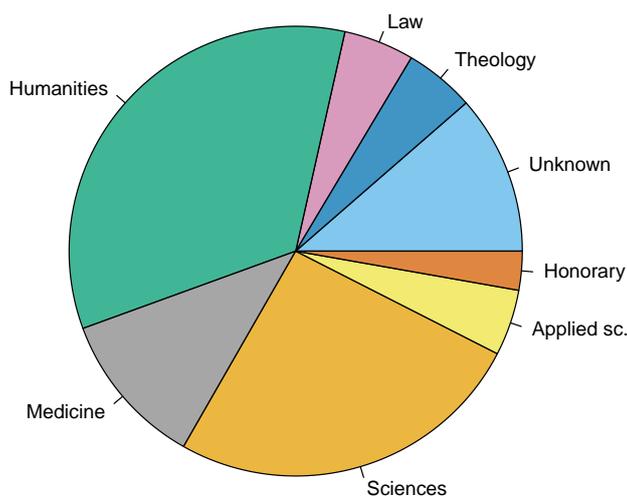


Figure 1: Broad fields at the Academy of Lisbon

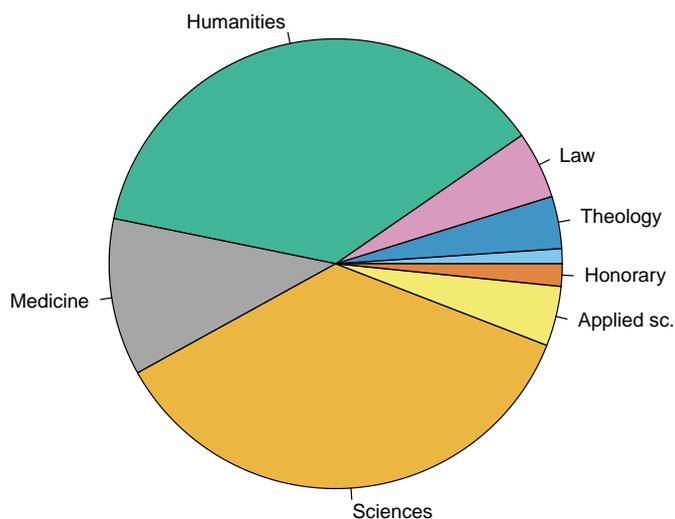


Figure 2: Composition by field of publications of scholars in the Lisbon Academy

## 4 FIELDS

Figure 1 shows the relative importance of fields, broadly defined. The academy was dominated by scientists (including medicine), but other fields were also present. The academy had three areas

of research and interest: *Ciências da Observação* (Observational Sciences), *Ciências Computacionais* (Computational Sciences), and *Artes Plásticas* (Fine Arts). It should be noted that there were different types of members: permanent, honorary, foreign, corresponding, and supernumerary.

## 5 FIELDS OF PUBLICATIONS

Figure 2 shows that scientific disciplines were prevalent, but the humanities also held a very important share. The academy allowed its members to publish their papers in *Memorias*. These also included memoirs devoted to various fields of knowledge: *Memórias da Agricultura* (Memoirs of Agriculture), *Memórias Económicas do Progresso da Agricultura, Artes e Indústria em Portugal e suas Conquistas* (Economic Memoirs for the Progress of Agriculture, Arts and Industry in Portugal and its Conquests), *Memórias da Academia Real das Ciências* (Memoirs of the Royal Academy of Sciences), and *Memórias da Literatura Portuguesa* (Memoirs of Portuguese Literature) (Dias 2017).

## 6 PLACE OF BIRTH

Figure 3 is a plot of the places of birth of all the ordinary members of the Academy of Lisbon, and Figure 4 provides the same information for corresponding and foreign members. This academy immediately welcomed a significant number of foreign members. Among the members, some were of Brazilian origin. This shows the importance of this colony for Portugal and the great interest, both scientific and political, that it aroused. The Lisbon Academy was intended to be the Portuguese equivalent of the great scientific academies that had become established in Europe. Therefore, many important foreign names, such as Franklin, d'Alembert, or Lagrange, who were members of numerous academies, were also admitted to the Lisbon Academy to enhance its prestige.

## 7 HUMAN CAPITAL OF SCHOLARS AND LITERATI

For each person in the database, we compute a heuristic human capital index, identified by combining information from Worldcat and Wikipedia using principal component analysis. The details are given in RETE in volumes 1–5. Figure 5 shows the names of all the literati with a positive human capital index. The vertical green lines (rug plot) show the distribution of all literati, including the obscure ones, over time. Figure 5 shows that many ordinary members of the academy have left some footprint of their activity (note that corresponding members are not included in this figure).

## 8 TOP 5 SCHOLARS

We provide a brief overview of the five ordinary members of the Academy of Lisbon with the highest human capital index.

**José Bonifacio de Andrada e Silva** (Santos 1763 – Niterói 1838) was a Brazilian naturalist, statesman, and poet known as the "Patriarch of Independence" for his decisive role in the independence of Brazil. Born into a Brazilian aristocratic family, he studied at the University of Coimbra where he took graduate courses in jurisprudence and then in mathematics and natural sciences. In 1790, subsidized by the Crown, he traveled across Europe where he took university courses from numerous scholars of the time. During this ten-year journey, he was able to visit mines and mineral deposits. He classified four new mineral species (including petalite and diopside). Back in Portugal, in 1801 the University of Coimbra created the chair of metallurgy for him.

**Giovanni Battista Casti** (Acquapendente 1724 – Paris 1803) was an Italian poet and librettist (a person who writes the text of an opera or other long vocal work). He had a rather profligate life, but his creative genius allowed him to come into contact with the most important European courts. He was the first to write with true originality comic operas in Italian, appreciated by Foscolo, Goethe, and Stendhal.

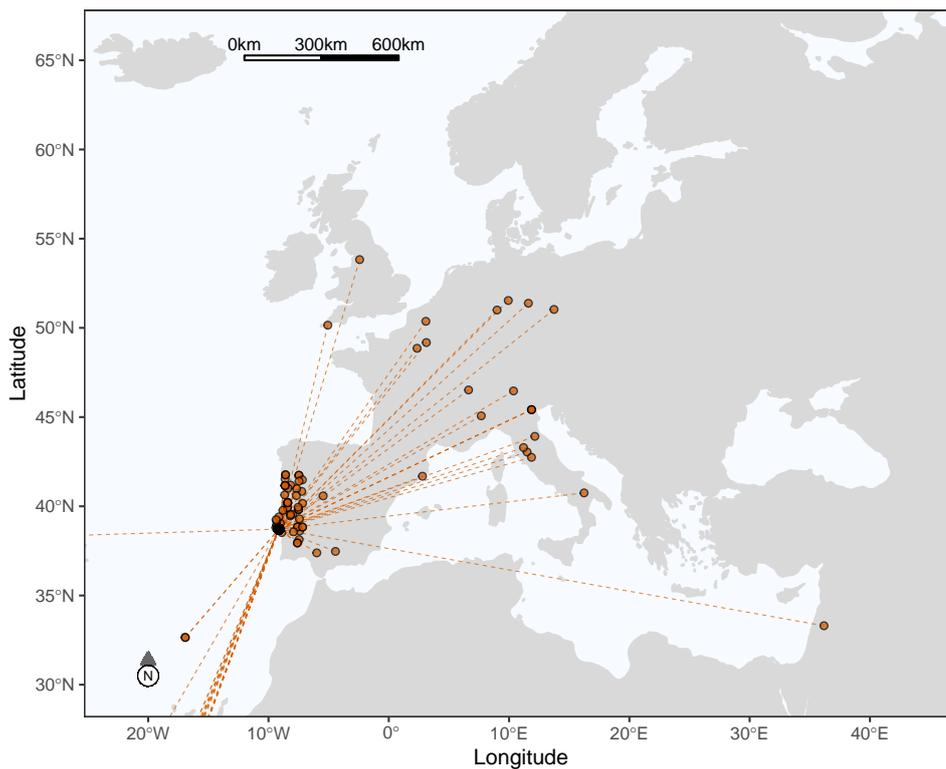


Figure 3: Places of birth of the ordinary members of the Academy of Lisbon

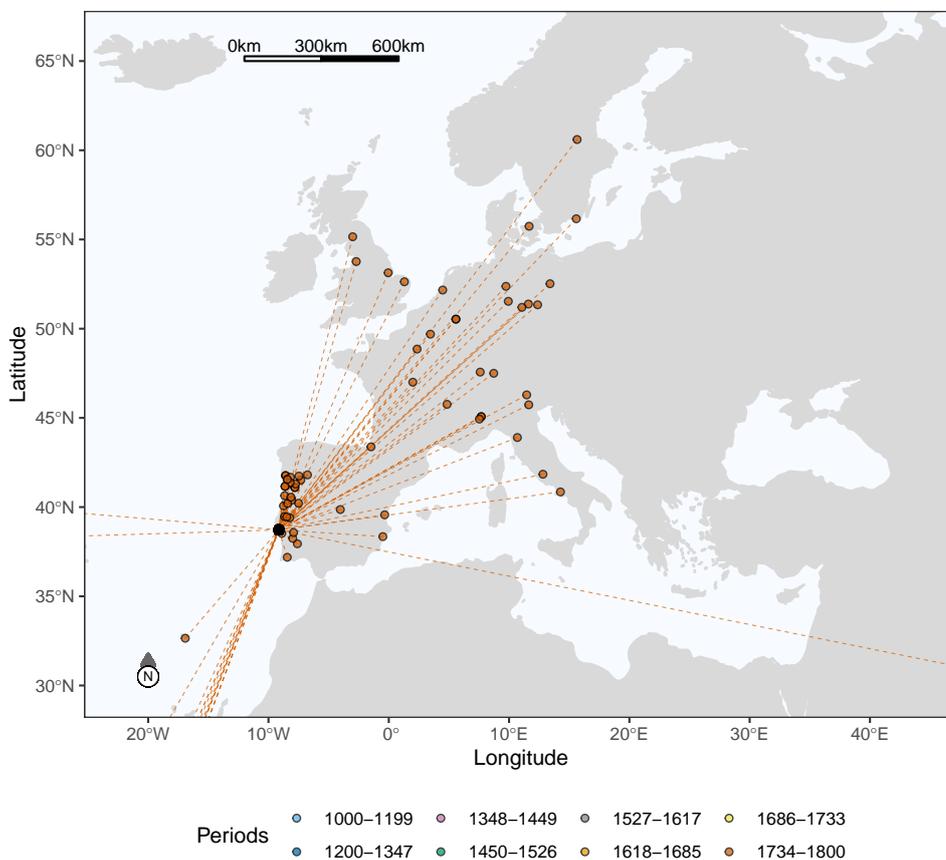


Figure 4: Places of birth of the corresponding members of the Academy of Lisbon

**José de Sousa Carvalho** (Estremoz 1745 – Alentejo 1799) was a composer and music teacher. A royal grant allowed him to travel to Italy and enroll at the Conservatory of Sant’Onofrio a Porta Capuana in Naples in 1761. In 1766, he made his opera debut in Rome with Pietro Metastasio’s *La Nitteti*. Returning to Portugal in 1767, he joined the Irmandade de Santa Cecilia (an association of musicians) in Lisbon and the same year was appointed professor at the Seminário da Patriarcal (1769-1798). In 1778, he became music teacher to the Portuguese royal family. Carvalho was the most important Portuguese composer of his generation and one of the best in his country’s history. In his many sacred works, he made careful use of counterpoint (one or more independent melodies added above or below a given melody). Carvalho composed both serious and comic works, as well as serenades.

**Domenico Agostino Vandelli** (Padova 1735 – Lisbon 1816) was a scientist, naturalist, and botanist. After studying medicine at the University of Padua, in 1763 Vandelli received an invitation from the Marquis de Pombal to teach chemistry and natural history at the Real Colégio dos Nobres de Lisboa, and an explicit invitation from Catherine II to assume the Chair of Natural Sciences at the University of St. Petersburg. Vandelli chose Portugal. This academic activity was not very successful, and Vandelli decided to return to Italy. In 1765, the Marquis of Pombal urged him to return, gratifying him with an appointment as head of the design and construction of the new Ajuda Botanical Gardens in Lisbon. In 1779, following the example of other prestigious European scientific academies, Vandelli participated in the founding of the Academia das Ciências de Lisboa. He personally edited the collections of the academy’s research and discoveries, which were collected in the various volumes of the Memórias da Academia Real das Ciências de Lisboa. Vandelli also became an influential member of the Council of Commerce due to his numerous publications on economics, agriculture, and industrial development.

**Antonio Nunes Ribeiro Sanches** (Penamacor 1699 – Paris 1783) After studying medicine in Salamanca, he practiced for a short time in Portugal but left because of the Inquisition, which was still active at the time. He passed through Italy, England, and France, eventually enrolling at the University of Leyden to study with Boerhaave. Thanks to this master, he was recommended to the Russian Empress to perform important medical functions. In medicine, he is best remembered for the studies he developed on venereal diseases (syphilis) and for the exchange he established with Chinese medicine. In addition, his interests extended to cultural aspects such as the arts, social and commercial issues, politics, and religion. Some of his works were included in Diderot’s *Methodical Encyclopedia* and Buffon’s *Natural History* (Doria 2001).

## 9 RELATED SCHOLARS

Several other important individuals were related to the academy, being corresponding or foreign members. The top five include well-known names who were also affiliated with other leading scientific academies: Benjamin Franklin (1706-1790), a politician and polymath, who thanks to his vast knowledge was a corresponding member of major European academies (Blasutto, De la Croix, and Vitale 2021; De la Croix and Zanardello 2021; De la Croix and Mytilinaios 2022); Jean le Rond D’Alembert (1717- 1783), a mathematician, physicist, philosopher, and encyclopedist (De la Croix and Doraghi 2021; De la Croix and Mytilinaios 2022; De la Croix and Zanardello 2021); Nicolas de Condorcet (1743 – 1794), a mathematician, philosopher, politician, and publisher, a representative of the Enlightenment (De la Croix and Doraghi 2021; De la Croix and Zanardello 2021; Blasutto, De la Croix, and Vitale 2021); Joseph-Louis Lagrange (1736- 1813), a mathematician and astronomer (Blasutto, De la Croix, and Vitale 2021); and Peter Simon Pallas (1741 – 1811), a zoologist and botanist (De la Croix and Mytilinaios 2022).



## 10 ANECDOTES

As mentioned above, the colonies gave a significant impetus in the development of new research. Natural history studies occupied a prominent place in the activities of the institution, which sponsored several scientific expeditions to the Portuguese colonies in the New World to learn about the territory, fauna, and flora. Corresponding members residing in the various possessions of the overseas empire sent animal, plant, and mineral specimens to the Academy's Natural History Office for study and cataloguing. These samples from the New World were studied in European laboratories, ensuring an understanding of the colonies' natural resources and their potential (Raminelli 1998). In 1781, the *Breves instruções aos correspondentes da Academia das Ciências de Lisboa sobre as remessas dos produtos, e notícias pertencentes à história da natureza, para formar um museu nacional* (1781) was published, in which guidance was given on how to store and package scientific specimens. The items were packaged carefully in tightly closed boxes, barrels, and jars so as not to be damaged by moisture. Before departure, they underwent a lengthy preservation process: animals were stuffed or soaked in alcohol, when available, or sugarcane brandy; plants were dehydrated or transplanted in jars, while seeds were wrapped in turpentine paper.

## ACKNOWLEDGMENTS

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