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Scholars and Literati at the Philosophical Society of Oxford (1651–1690)

Chiara Zanardello

IRES/LIDAM, UCLouvain

This note summarises our research into the group of scholars and literati who were at or were connected with the Philosophical Society of Oxford from its early meetings until its dissolution.

1 Sources

Our main source is the fourth volume of *Early Science in Oxford: the Philosophical Society* written by Robert T. Gunther (1925). The volume covers the history of the Society from the very first members and meetings through to the detailed transactions in the *Minutes of the Oxford Society* from 1683 to 1690. These detailed records tell us who attended the meetings regularly and in person, and who participated only through correspondence (see Section 5). We also took information from the online version of *Alumni Oxonienses 1500-1714* edited by Joseph Foster (1891) in *British History Online*.

2 The Society

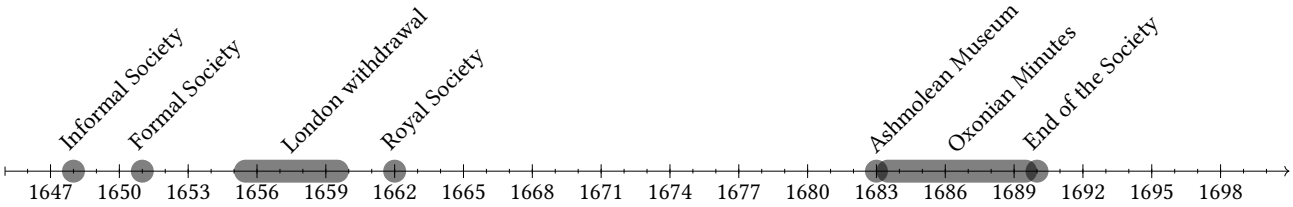

Figure 1: Timeline of the Philosophical Society of Oxford

Dr. John Wilkins (Fawsley 1614 – London 1672) was the Warden of Wadham College in Oxford and, together with some colleagues from London, created the Philosophical Society of Oxford in October 1651. The Society had started to evolve in a less formal way some years before, as in Figure 1, when Dr. Wilkins became Warden (i.e., the head of Wadham College) in 1648. The early meetings, held weekly, dealt with applied science, and with what was called the *New Philosophy*. Initially, the group met in Dr. William Petty's (Romsey 1623 – London 1687) rooms which, being part of a pharmacy, were also convenient for scientific experiments and research. The meetings were moved to Wilkins' place, but the works of the Society were discontinued, with ups upon the arrival of Robert Boyle (Lismore 1627 – London 1691) in 1654, and downs with the withdrawal of some members to Gresham College in London a few years later. In London, they met to discuss natural science and recent experiments, and to follow lectures in astronomy and geometry. Indeed, the Philosophical Society of Oxford is the precursor to one of the most important scientific societies created at that time: Dr. Wilkins led the London group which in 1660 constituted *The Royal Society* and that in 1662 received royal approval (for details about the Royal Society itself see De la Croix and Mytilinaios (2022), for details about the link between the two societies see Section 8). In May 1683, the Ashmolean Museum opened its doors (this building was the symbol of New Science and was also open

to women), and the Oxford Philosophical Society started to meet in the Natural History School in October. From then until the Society closed in 1690, detailed *Minutes* of the discussions were taken, and these were later by Gunther (1925) (see the relative time span in Figure 1).

3 Descriptive statistics

Table 1 displays some descriptive statistics. Overall, we link 113 scholars to the Oxford Philosophical Society. We observe the year and place of birth for more than 70% of them.

The average age at first appointment was about 31 years. Longevity is 67 years, higher in the first period then in the second.

The median distance between the place of birth and activity is lower in the first period than in the second. However, the values in Table 1 include the corresponding members, who may come from outside the UK (for the difference between ordinary and corresponding members, see Section 5).

The coverage of scholars in Wikipedia is high, and the coverage in Worldcat is higher. Overall, 62.8% of the scholars appear in Worldcat, with a maximum of roughly 67.6% over the last period, in line with the coverage percentages for Wikipedia. Hence, most of the scholars published, and these publications have survived until now.

Period	nb. obs	birth known date	birth known place	mean age at appoint.	mean age at death	med. dist. birth-univ.	with Wiki.	with Worldcat
1618–1685	79	67.1%	65.8%	33.6	71	117	58.2%	60.8%
1686–1733	34	88.2%	85.3%	30.1	59.3	120	64.7%	67.6%
1618–1733	113	73.5%	71.7%	31.3	67	120	60.2%	62.8%

Table 1: Summary statistics by period

4 Fields

Figure 2 shows the different fields that the Philosophical Society of Oxford engaged with. Science and medicine are clearly the leading subjects. Only one quarter of the members specialise in humanities, theology and law. We do not know the field of study for 29 members, most of whom are correspondents. We know that they sent some papers to the Society, but our sources do not specify the specific topic.

5 Place of birth

Figure 3 displays the documented birthplaces of the ordinary members active at the Philosophical Society of Oxford per period – all of them are from the UK. Figure 4 shows the birthplaces of the corresponding scholars and literati, who had some epistolary contacts with the Society of Oxford – some of them are also from abroad, mostly from Northern Europe.

We defined the difference between ordinary and corresponding based on the information in Gunther (1925). An ordinary member is a scholar who signed the *Articles of the Government of this Society* (page 45-47, Gunther (1925)) or who was elected in later meetings. A corresponding member is a scholar who only sent letters to the Society, and whose letters were read during the meetings.

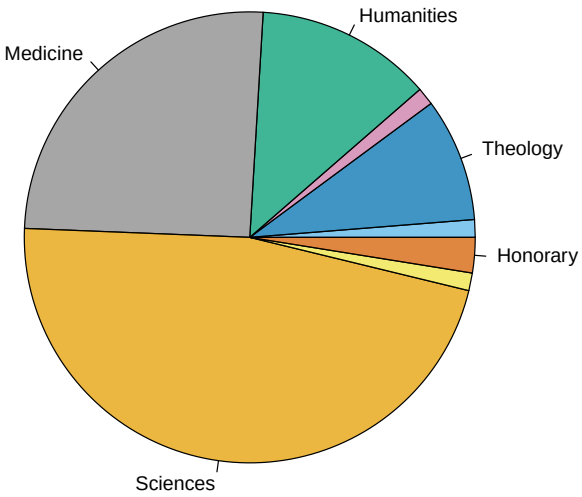

Figure 2: Broad fields at the Philosophical Society of Oxford (published scholars only)

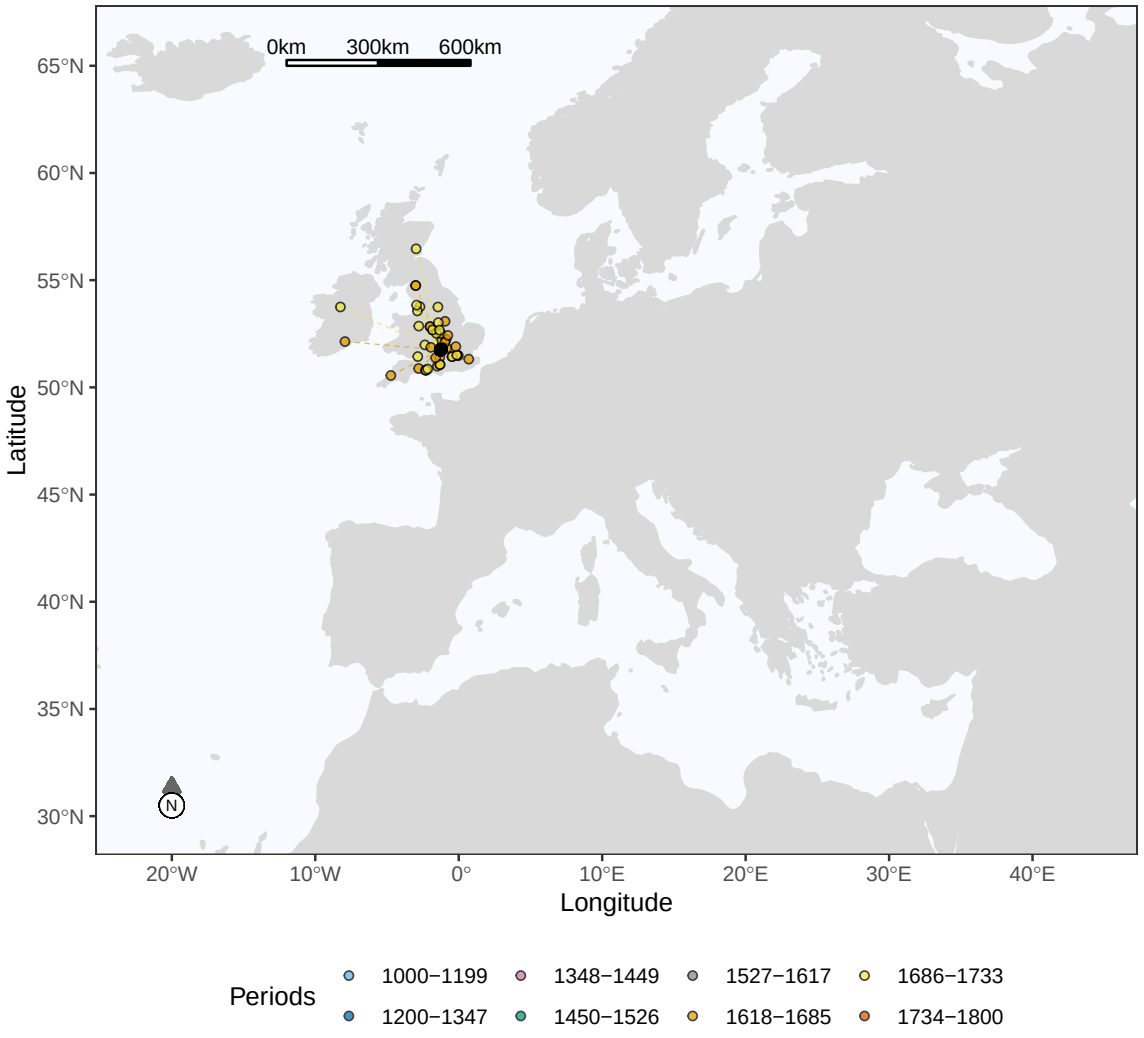

Figure 3: Places of birth of the ordinary members of the Philosophical Society of Oxford

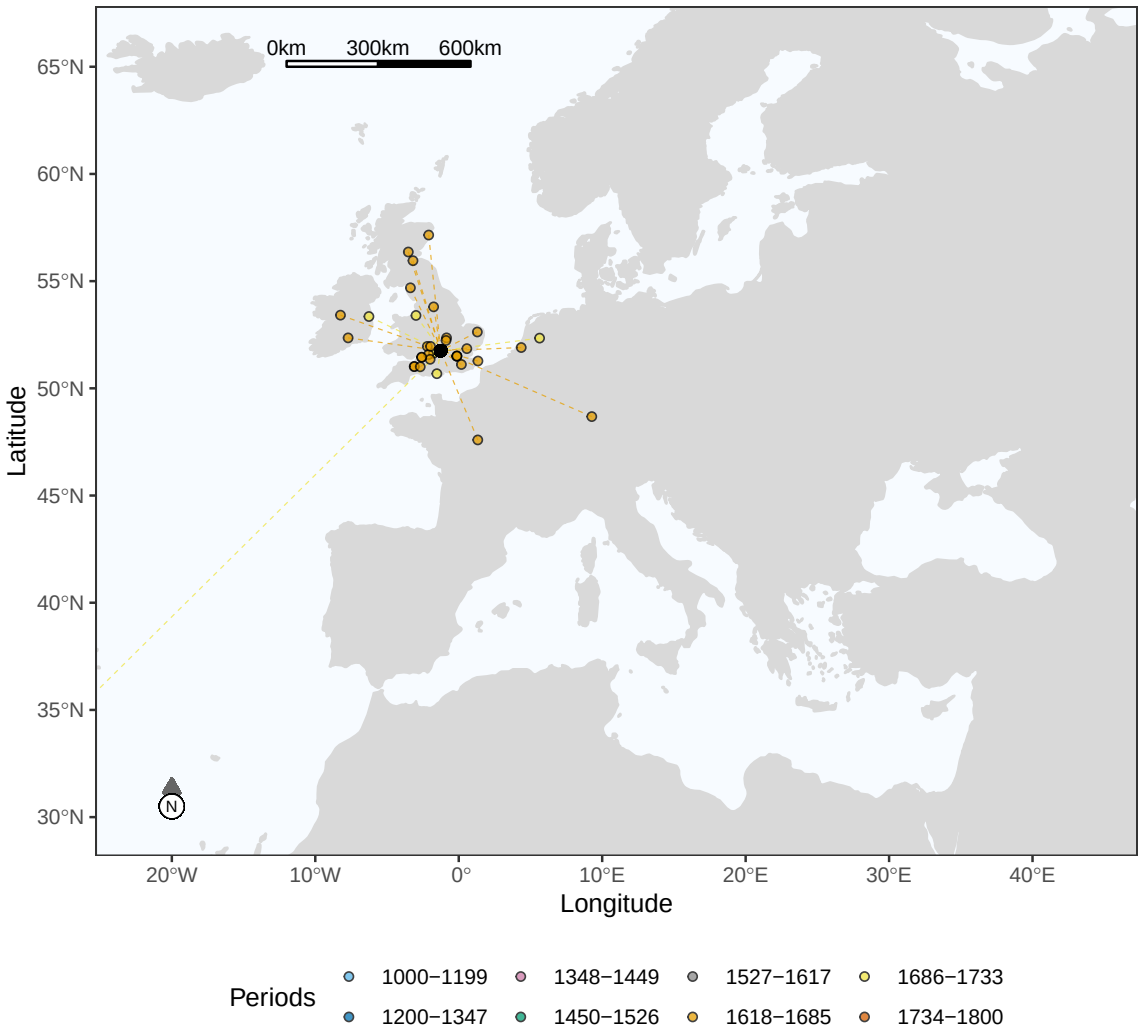

Figure 4: Places of birth of the corresponding members of the Philosophical Society of Oxford

6 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. Figure 5 shows the names of all the scholars with a positive human capital index at the Philosophical Society of Oxford. The top five members, according to our measure, were also active at the Royal Society of London (De la Croix and Mytilinaios 2022). They were Boyle, Petty, Bentley, Wallis, and Flamsteed.

7 Top 5 professors

Robert Boyle (Lismore 1627 – London 1691) was a scientist. He is considered the father of modern chemistry and experimental science. Together with Robert Hooke (Freshwater 1635 – London 1703), Boyle contributed to the improvements of the air pump of Otto von Guericke, which led to the pneumatical Engine. He had one English and one Irish parent, and in the first part of his life he travelled between Ireland and continental Europe. In 1654, he arrived in Oxford and joined the Philosophical Society of Oxford: his arrival reinvigorated the meetings, and reawakened interest in natural science. He offered his lodgings for the weekly meetings of the Society. As soon as the Royal Society received the royal approval, Boyle joined the London circle, and continued his experiments in the capital until his death.

William Petty (Romsey 1623 – London 1687) was an English physician and scientific philosopher. He studied Latin in Caen and anatomy in the Netherlands. In 1646, he returned to England and joined the Oxford Philosophical Club, which became the Philosophical Society of Oxford a few years later. He also offered his lodgings for meetings of the Society: one of his rooms was a pharmacy, which members used for scientific experiments. In addition to his membership of the Oxford Society, he taught at the University of Oxford (for the connection between the Oxford Society and the University, see Section 9), at Gresham College and at the College of Physicians. He joined the Royal Society in 1662.

Richard Bentley (Oulton 1662 – Cambridge 1742) was an English theologian, considered the father of historical philology. He studied at St John's College in Cambridge, where he obtained both a Bachelors and a Masters degree. In 1700 he entered Trinity College, Cambridge as Master and in 1717 became Professor of Divinity at the University of Cambridge. As member of the Royal Society, he was interested in natural theology (i.e., theology based on rational facts independent from divine manifestation) and in 1690 he was admitted to the the Philosophical Society of Oxford, although the Society closed soon after his arrival.

John Wallis (Ashford 1616 – Oxford 1703) was an English mathematician and clergyman. He helped to develop the infinitesimal calculus, and introduced the infinity symbol, ∞. He studied mathematics, Latin, French, Greek and Hebrew at the Felsted School and medicine at Emmanuel College in Cambridge. In 1643, he went back to London and joined Dr. Wilkins and his friends in the club that shaped the Philosophical Society of Oxford. Wallis was a member of the Royal Society at the time it became officially recognised. In 1649, he was appointed Savilian Professor of Geometry at Oxford University, where he taught until his death.

John Flamsteed (Denby 1646 – Burstow 1719) was an English astronomer. He wrote the *Catalogus Britannicus* and the *Atlas Coelestis*, which were published after his death. He studied at the free School of Derby where he learned Latin; his later interest in mathematics and astronomy was inspired by his father. In 1665, he published his first paper on astronomy. During his time in London in 1675 he became the first English Royal Astronomer and in June he laid the foundation stone of the Royal Greenwich Observatory. Flamsteed entered the Royal Society in 1676 and the Philosophical Society of Oxford ten years later.

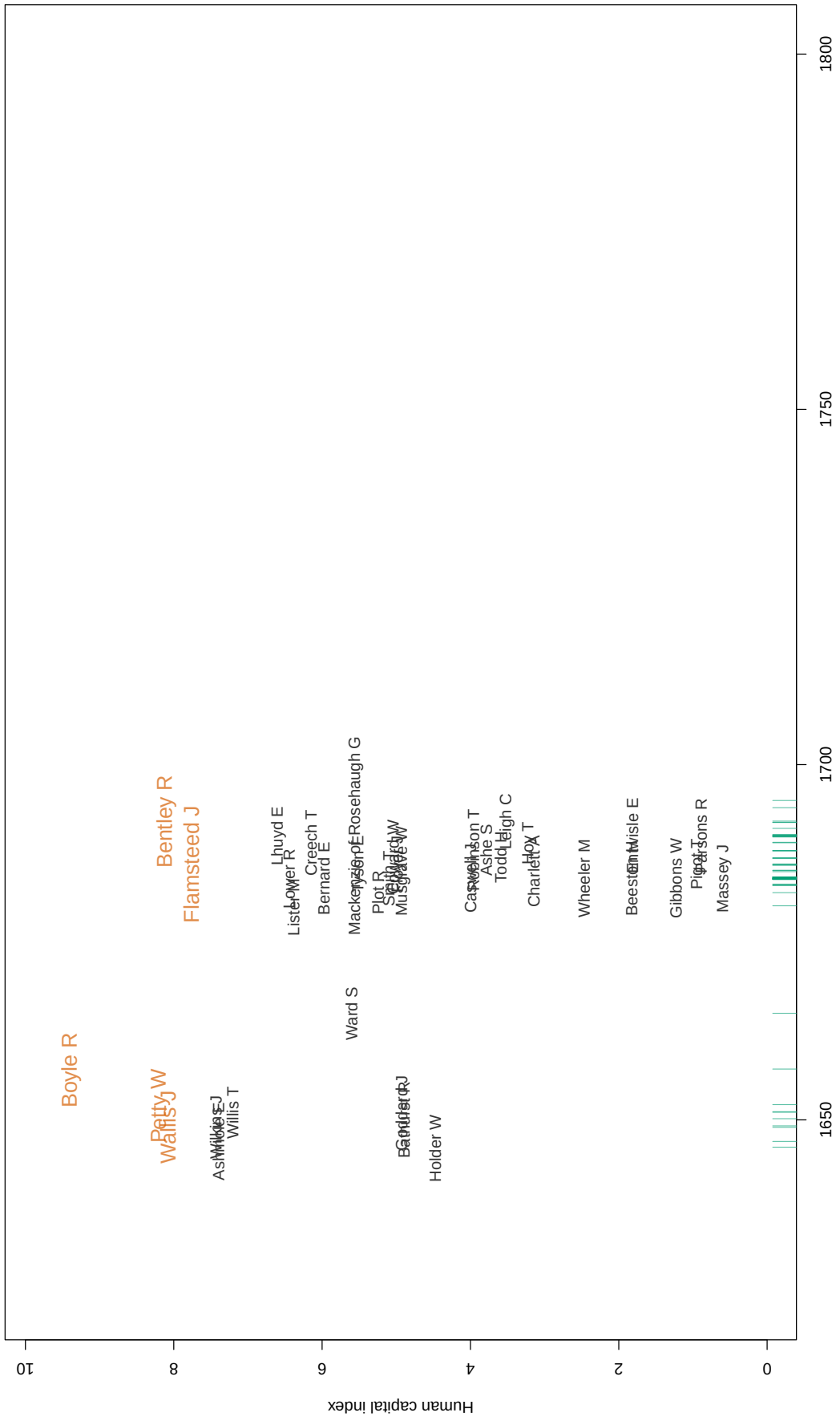

Figure 5: Famous scholars of the Philosophical Society of Oxford

8 Philosophical Society of Oxford & Royal Society

The connection between the Philosophical Society of Oxford and the Royal Society is found in the name given to the transactions of the latter: *Philosophical Transactions of the Royal Society of London.* Most of the scientific works produced by members of the Oxford Society were not published by or attributed to the Society, but they were circulated and achieved recognition elsewhere, for example in London. It is also likely that the early discussions published by the Royal Society actually belonged to the Philosophical Society of Oxford (Gunther 1925). The links were already clear at the emergence of the two institutions and they were confirmed later, in 1665, when the Black Plague lead many scholars to leave London for Oxford and rejoin the Oxford Society. This is described in a letter from Dr. Boyle (p. 5 in Gunther (1925)). This close collaboration was also formally acknowledged by the Royal Society when it made a formal visit to the Wadham College of Oxford in 1912.

Figure 6 is an image of the scale and extent of this overlap between the Philosophical Society of Oxford (1648 – 1690) and the Royal Society. More than one third (38%) of the total members of the Oxford Society were also fellows of the Royal Society.

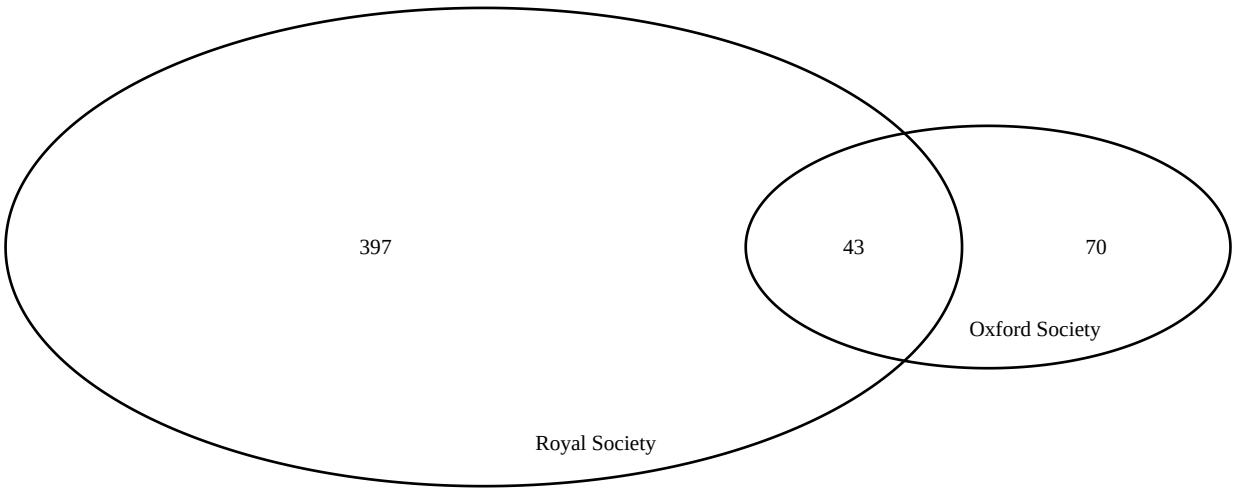

Figure 6: Interaction between the Philosophical Society of Oxford and the Royal Society of London from 1648 to 1690

9 Philosophical Society of Oxford & University of Oxford

The Philosophical Society of Oxford was connected to the Royal Society and to the University of Oxford. To compare the extent of the Society's connections with these two bodies, we replicate Figure 6 with data for the Society and the University of Oxford. We extend the beginning and the end date of the Philosophical Society of Oxford by about 50 years (i.e., 1600 – 1740) to also capture scholars who were affiliated to the University even when the Society was not active. We see in Figure 7 that the overlap between the Society and the University is just 18 members.

Comparing the interaction with the University of Oxford and the interaction with the Royal Society illustrates the scale of the influence carried out by the Philosophical Society of Oxford within the Royal Society: in less than 50 years, the interaction with the Royal Society is more than two times bigger than that with the University, for which we consider a time span of 140 years.

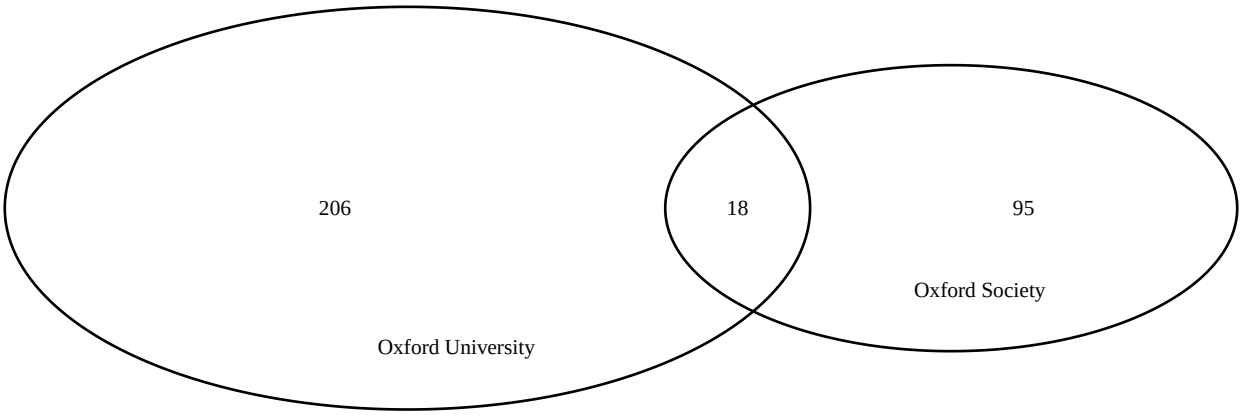

Figure 7: Interaction between the Philosophical Society of Oxford and the University of Oxford from 1600 to 1740

10 Final Thoughts

The Philosophical Society of Oxford has always been connected to the Royal Society: the first gave birth to the latter. Notwithstanding the important works and experiments developed by the scientific movement in Oxford, the Philosophical Society was never able to create its own identity. The Philosophical Society of Oxford waned while the Royal Society grew in size and influence.

11 Anecdotes

The Philosophical Society of Oxford by Night. In the Minutes of March 1685, when Dr. Plot was the President of the Philosophical Society of Oxford, the advantages of the night and the dark were celebrated. In the discussion about the improvement of a sense when the others are unavailable or not used, the President himself contributed with a personal experiment. He informed the company that he was able to mentally calculate the square root of a 53 digit number without resorting to pen and ink. He said that during the night, in the dark, he challenged himself with the following number:

24,681,357,910,121,411,131,516,182,017,192,122,242,628,302,325,272,931

(after having tried and too easily succeeded with 20, 30, 40 and 3).
He replicated the result (157,103,016,871,482,805,817,152,171) one or two nights after, to be able to dictate the number and examine it. He ends up claiming that "[...] a reasonable good Memory, fixed with good attention, is capable of being charged with more, than a man would at first imagine": by Night our Memory works better, and "even by Day, we may better do it with our Eyes shut, than open" (p.134-136, Gunther (1925)).

Philosophical Society of Oxford & Royal Society. Sometimes there were tensions between the two institutions. One of the most emblematic examples is the argument that arose with the publication in 1685 of *De Historia piscium* ("Of the History of Fish") written by John Ray (Black-Notley 1627 – Black-Notley 1705) and Francis Willughby (Middelton 1635 – Middelton 1672), both members of the Royal Society. The book was going to be one of the most comprehensive, complex and laborious works ever published by the Royal Society. In March, Robert Plot (Borden 1640 – Borden 1696), governing the Philosophical Society of Oxford, communicated to the Royal Society

that John Fell, the Bishop of Oxford and the founder of the Oxford University Press, offered to pay the cost of the publication on the condition that the book would contain a figure for every type of fish included in the text. In November, when the authors had gathered all of the figures for the book, Dr. Plot argued that he wanted only original pictures and he would not allow the publication otherwise. Having failed to reach an agreement with Dr Plot, the Royal Society decided to cover the publishing expenses, and used a subscription model as the costs were substantial. The Royal Society then accused the Oxford Society (and Dr. Plot) of fraud, for having published pirate versions of *De Historia piscium* and sold them without permission. John Fell was able to prove that the number of copies in existence matched the number from the print run. Printing this book almost led the Royal Society into bankruptcy: it did not sell well and the Society never recovered its costs. (Roos 2013).

Acknowledgments

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