

Scholars and Literati at the University of Padua (1222–1800)

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This note is a summary description of the set of scholars and literati who taught at the University of Padua from its inception in the 13th century to the eve of the Industrial Revolution (1800).

1 THE UNIVERSITY

The University of Padua was founded in 1222 by a group of students and professors from Bologna, who experienced a certain lack of academic freedom in their institution of origin. For a long time it benefitted from the protection and the economic support of the Republic of Venice, traditionally known as La Serenissima. This guaranteed academic freedom, attracted important scholars to Padua, and allowed the University to build great architectural works (such as the anatomical theater built in 1595). From 1509 to 1517 the university was closed, due to Cambrai's war against the expansion of the Republic of Venice. Many professors went to teach in nearby universities (in particular Bologna, Ferrara and Pavia). Over time, Padua became one of the most important university centers in Europe, until the decline of La Serenissima - culminating with its fall to Napoleon's troops in 1797 - which ushered in a period of instability. This prompted the departure of several prestigious scholars.

2 SOURCES

We used ancient and modern sources to reconstruct the list of scholars of the University of Padua. The source we relied on the most was of the philologist Jacopo Facciolati's work in Latin "Fasti Gymnasii Patavini" (1757) and the biographical dictionary of Del Negro (2015). Books by Pesenti (1984) and by Casellato and Sitran Rea (2002) were particularly useful for writing the profiles of medicine professors. To complete the biographical information, we used the dictionaries of Istituto dell'Enciclopedia Italiana (1929), (1961), and of Taisand (1721) for law scholars.

3 SOME STATISTICS

Table 1 shows some descriptive statistics. There are 2700 scholars and literati, placing the University of Padua just after Bologna in terms of size (see De la Croix and Vitale 2021). The year of birth is known for 22.3% of them, comparable to the 17.8% we had for Bologna. The mean age at appointment is 37.4 years, and this is quite stable over the periods. Longevity (mean age at death & life expectancy at age 30) has a fairly similar pattern to Bologna, where longevity improved in the last two periods, consistent with the literature on the historical life expectancy of elites (Stelter, De la Croix, and Myrskylä 2021). The birth place is known for 84.5% of the people, thanks to the systematic registration of place of origin in the records. The median distance between birth and Padova is 129km, much higher than the 0km of Bologna. The mean distance fluctuates, attains a maximum during the period 1527–1617, and falls sharply afterwards. Finally, 11.7% of the scholars have a Wikipedia page (in some language), which is similar to Bologna, but 22.7% of them have left a footprint in the catalogues of the libraries of the world, Worldcat, which is higher than the 14.9%

of Bologna. One reason for this difference might be that Bologna was mostly oriented towards law, a field in which publications were less likely to have survived to the present day.

Period		nb.	% birth year	mean age	mean age	life exp.
Start	End	obs	known	at appoint.	at death	at 30
1200	1347	110	26.6	40.6	66.7	65.9
1348	1449	423	21	36.1	68.5	68.9
1450	1526	708	15.5	36.7	67.4	65.3
1527	1617	936	15.6	36	63.8	61.6
1618	1685	283	26.5	40.3	67.3	63.8
1686	1733	131	55	37.4	71.2	72.2
1734	1800	109	73.4	38.5	73	73.3
1000	1800	2700	22.3	37.4	67.8	66.4
			% birth place known	median distance birth-institution	% with Wikipedia	% with Worldcat
1200	1347		73.4	137	22.9	24.8
1348	1449		86.3	89	12.8	18.2
1450	1526		82.9	126	9.3	17.9
1527	1617		84	145	7.9	19.4
1618	1685		88.3	120	13.4	28.6
1686	1733		86.3	69	18.3	45
1734	1800		91.7	40	32.1	54.1
1000	1800		84.5	129	11.7	22.7

Table 1: Summary statistics by period

4 FIELDS

The University of Padua was founded as the *Universitas Iuristorum*, with a focus on teaching civil and canon law. Beginning in 1250, medicine and arts (humanitas) were also taught in Padua, with the *Universitas Artistarum* eventually becoming independent of the *Universitas Iuristarum* in 1399. Both were endowed with an autonomous rector (honorary, in Figure 1), who was in charge of how studies were organized. Figure 1 shows the relative importance of fields, broadly defined.

5 PLACE OF BIRTH

Figure 2 is a plot of the places of birth of all the scholars of Padova, and shows the European character of this university. Several scholars came from modern-day Greece/Cyprus around the time the Byzantine Empire was ending (1454). During the period 1537-1617, Poland was an important contributor to the academic pool.

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 a principal component analysis. We also compute the notability of the university at each date by averaging the human capital of the scholars active at the University of Padua 25 years before that date. Details are given in the Appendix.

Figure 3 shows the names of all of the scholars with a positive human capital index. The orange line plots the notability of the university. The vertical green lines (rug plot) show the distribution of all scholars, including the obscure ones, over time.

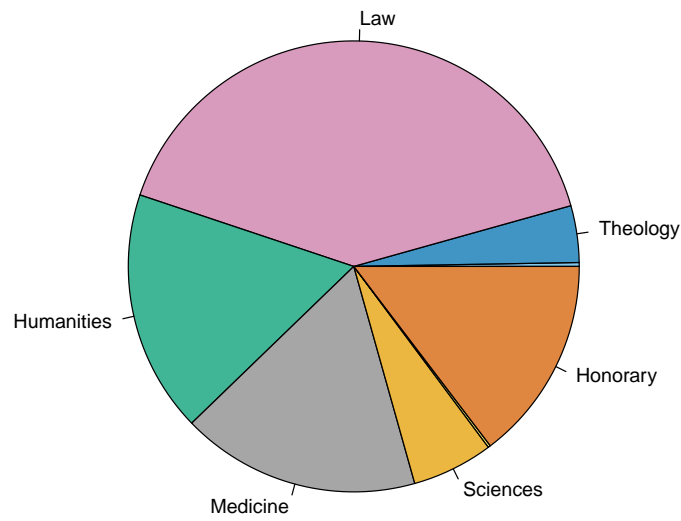


Figure 1: Broad fields at Padova

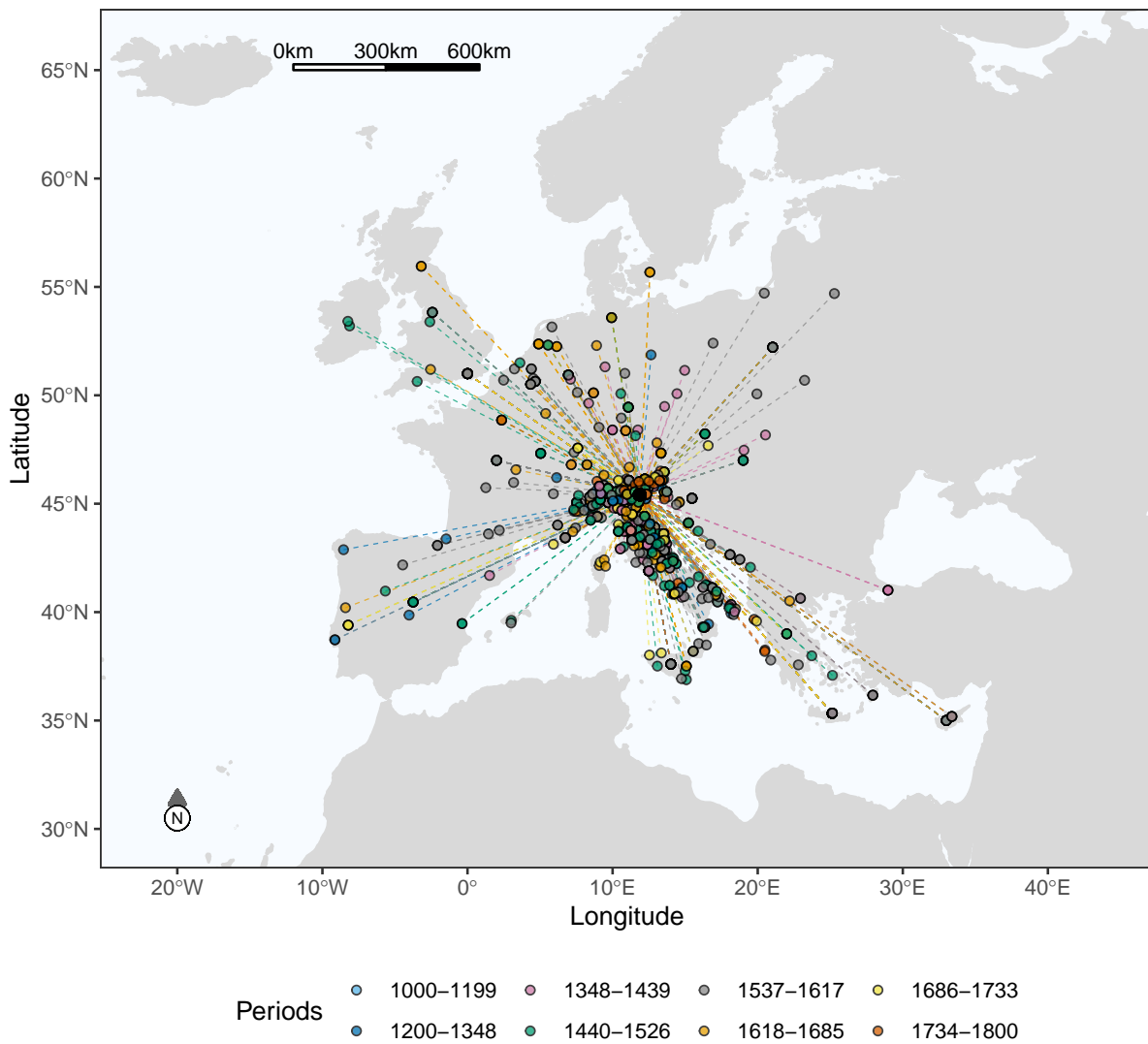


Figure 2: Place of birth of the scholars and literati at the University of Padova

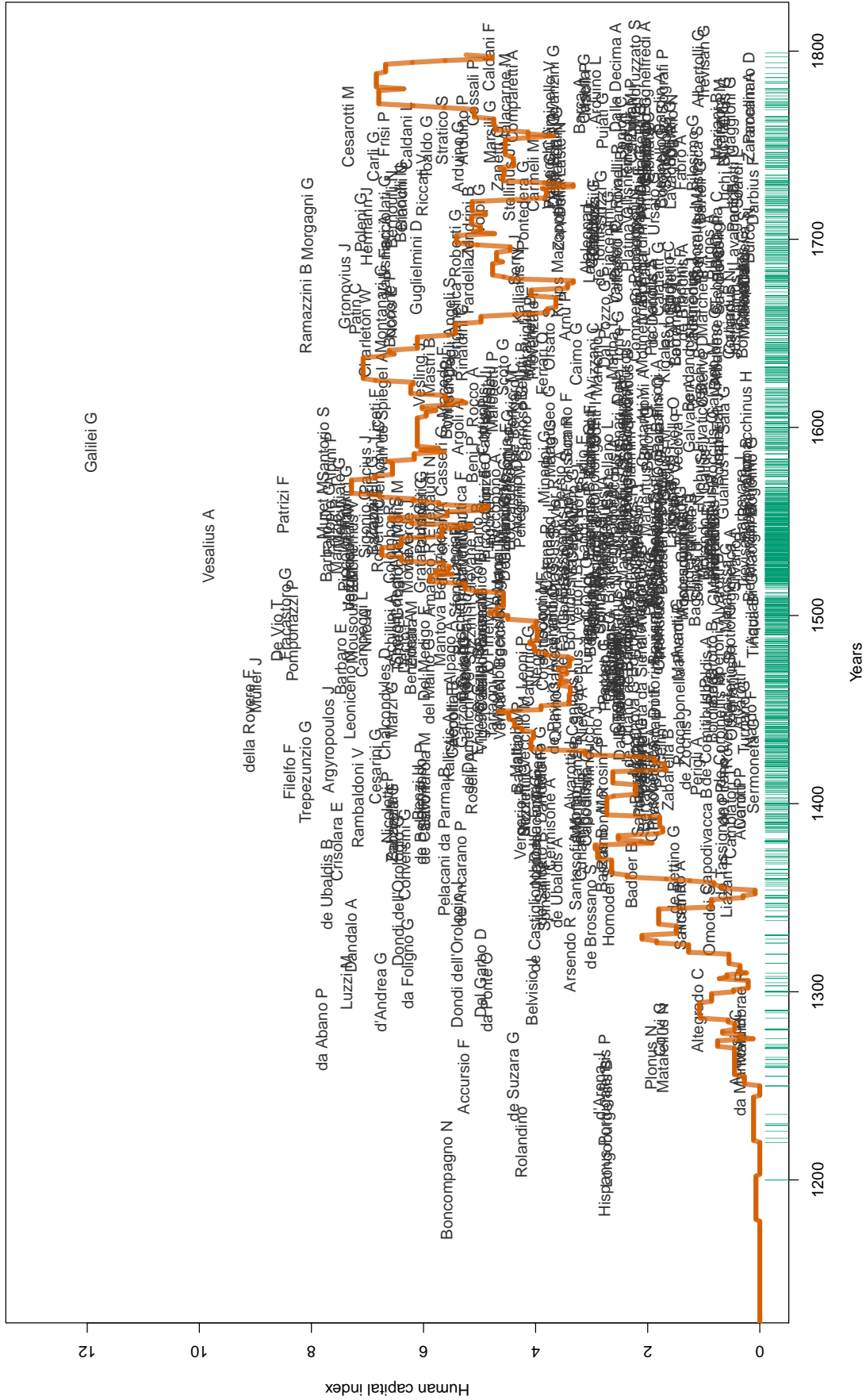


Figure 3: Famous scholars and university notability by period (orange)

Notice that, when a scholar taught at different universities, only a fraction of his human capital index is imputed to compute the notability of the university. This explains why between 1300 and 1400 we observe many renowned scholars but still little notoriety for the university, as most of these scholars were also active at the other universities in Northern Italy.

The pattern is one of high quality after 1400. Every period has a mass of scholars publishing very well. Notability peaks around 1600, coinciding with the presence of Galileo. Then there is a period of decline, although it was a less dramatic decline than that observed elsewhere, for example at Vallodolid (De la Croix and Karioun 2021). At the very end of the period we look at, there appears to be a revival in notability.

7 TOP 5 PROFESSORS

We now provide a brief overview of the five professors with the highest human capital index.

Galileo Galilei (Pisa 1564–Arcetri 1642) was an astronomer, physicist and engineer. He is considered the father of modern science. He was initiated into the study of medicine at the University of Pisa, but soon became interested in mathematics and physics. He taught in Pisa and Padua. He remained in Padua for eighteen years, which he considered the best years of his life. In fact, the intellectual dynamism and academic freedom afforded by the *Studium Patavinum* allowed Galileo to develop his most important theories and inventions. During this period, he subscribed to the Copernican theory and was subsequently prosecuted by the Inquisition, both in Padua (for adultery and practice of astrology) and in Florence, where he was explicitly accused of supporting Copernicanism (but was never condemned).

Andreas Vesalius (Brussels 1514 – Zakynthos 1564) was a physician, anatomist and surgeon. He studied medicine in Louvain and Paris. In 1537 he moved to Padua, attracted by the large number of corpses available for dissection and the prospect of more substantial academic freedom. In Padua, he obtained his doctorate and immediately began teaching surgery and anatomy. In his works *De Humani Corporis fabrica* (1543) and *Epitome* (1543), Vesalius demonstrated the importance of anatomy and the practice of dissection in medical studies. In 1542, he left Italy to become the personal physician to Charles V, and later to Philip II of Spain.

Francesco Della Rovere (Pecorile 1414 – Roma 1484) later Pope Sixtus IV (1471-1484), obtained his doctorate in theology at Padua, where he also taught philosophy and theology. In addition to Padua and Bologna, he taught at the universities of Siena, Pavia and Perugia. He wrote on theological issues that were much debated at the time: for instance, in *De Sanguine Christi* (1474) he defended the ideas of Giacomo della Marca, according to whom the blood shed by Jesus Christ in the Passion had no salvific value.

Johannes Müller (Königsberg 1436 – Roma 1476) better known as Regiomontanus, was a mathematician, astronomer and astrologer. When he was eleven years old, he became a student at the University of Leipzig. He later graduated from the Alma Mater Rudolphina in Vienna, and went to teach in Padua, where in 1464 he gave lectures on the work of Alfraganus (9th century) and other famous Paduan astronomers. In 1472 he moved to Rome, where Sixtus IV entrusted him with the task of reforming the calendar. Regiomontanus died in 1476, probably from the plague. According to some sources, however, he was poisoned by the relatives of George of Trebizond, who he had criticized in his works.

Girolamo Fracastoro (Verona 1475 – Incaffi 1553) was a physician, philosopher, astronomer and mathematician, who taught logic in Padua. He is considered to be one of the founders of modern pathology and epidemiology. He hypothesized that infections were caused by disease-carrying germs and could be transmitted by air or contact. In particular, his research on

syphilis (which was named after an epic poem by Fracastoro) is considered an early example of epidemiology. As an astronomer, he contributed to the study of cometary tails. He befriended Copernicus, and in 1538 he accurately described the operation of an instrument, the telescope, which was then realized by Galileo Galilei a few decades later. In recognition of his contributions to astronomy, a crater on the Moon was named after him.

8 RELATED SCHOLARS

Beyond those who taught at the University of Padua, several important individuals are related to the university. They probably did not occupy an official position, but they were involved in teaching and/or research. They are counted in the data for all figures but Figure 3.

Giordano Bruno (Nola 1568 – Rome 1600) was a philosopher and theologian. Born Filippo, he joined the Dominican order at age 15, and changed his name to Giordano. His lack of tolerance towards dogmas and doctrinal constraints led to repeated clashes with religious authorities. In 1576 he left the Dominican order to escape multiple accusations of heresy and traveled across Italy and Europe. During this period, he had the opportunity to teach at several universities. In Padua, he gave private lectures for the German students attending that University and hoped in vain to be appointed chair of mathematics, to which Galilei was later nominated. In 1592-3, he was arrested and transferred to Rome, where he was imprisoned on charges of heresy. After seven years, during which he constantly refused to abjure, he was executed in the Campo de' Fiori, where he was hung upside down naked and then burned at the stake.

Tommaso Campanella (Stilo 1568 –Paris 1639) was a Dominican friar, philosopher, theologian and poet. In 1593 he moved to Padua, where he enrolled at the university under the assumed identity of a Spanish student. While studying medicine and attending anatomical dissections, he gave private lessons and became friends with Galilei, who he later defended in his work *Apologia di Galileo* (1612). In this writing, Campanella contested the idea of limiting academic freedom in the name of the primacy of Aristotelianism. Because of his ideas he was on multiple occasions sentenced to prison on charges of heresy.

Justius Lipsius (Overijse 1547 – Leuven 1606) was a philologist, philosopher and humanist. After a few years in Rome, where he deepened his knowledge of the classics and connected the most important intellectual figures of the time, he was offered a chair by the University of Padua - but he never taught there. In Padua, he joined the circle of intellectuals created by Gian Vincenzo Pinelli, and stayed in contact with the most important scholars of the time. Later, he taught in Jena, Leiden and Louvain.

Gerolamo Cardano (Pavia 1501 – Rome 1576) was a mathematician and physician, who taught at the Universities of Pavia and Bologna. In Padua, where he completed his studies, he was elected Rector of the *universitas artistorum*, which at that time included medicine, philosophy and theology. He wrote more than two hundred works, partially collected in his *Opera Omnia* (1663), which touches on subjects as diverse as metaphysics, medicine, natural sciences, mathematics, astronomy, occult sciences and technology. Cardano, who loved gambling, admitted towards the end of his life that "I have squandered my reputation, my time and my money in this way" (Cardano 1982).

Nicolas Steno (Copenhagen 1638 – Schwerin 1686) was a geologist, anatomist, and Roman Catholic bishop. In his hometown, he learned medicine from the famous Thomas Bartholin. In the following years, he moved to Amsterdam and discovered the main duct of the parotid gland, which was subsequently named after him. From 1666 he lived in Italy, where he converted to Catholicism. It is not certain whether he taught at the University of Padua, but he followed the lectures of the anatomist Fabrizio dell'Acquapendente (Figuier 1879).

Patrizi Francesco (Cres 1529 – Rome 1597) was a philosopher and a mathematician. He studied and then - according to only one source, Michaud (1811) - taught philosophy at the University of Padua. It is certain that, in 1577, he went to Ferrara to teach platonic philosophy at the university, while also doing research in hydraulics and mathematics. In 1592 he moved to Rome, to the Sapienza. Despite the support of Pope Clement VIII, his work "Nova de universis philisofia" (1571) was put on the *Index Librorum Prohibitorum*, for the harsh criticism of Aristotelianism and the controversial view of the relationship between philosophy and religion (Del Negro 2015).

9 DIVERSITY

During the period under study (1222-1800), as many as 22 different nationalities were represented at the University of Padua. In particular, there was a community of Greek-speaking students and professors (the so-called ultramarines) who, starting in the 14th century, came to Padua to escape the threat of Ottoman rule. Travelling to Padua allowed many Greek-speaking students and professors to teach or receive high quality education, while remaining within the borders of the Serenissima (Bovo 2015).

10 CENSORSHIP

Among the 582 scholars who have published some work after 1400CE, 41 have been censored by the Catholic Church in its *Index Librorum Prohibitorum* (De Bujanda and Richter 2002). A rate of censorship of 8.5% is high compared to Italy in general (Blasutto and De la Croix 2020). Beyond those already mentioned above, famous examples are:

Pietro Bembo (Venice 1470 - Rome 1547, censored in 1580) was a poet, literary theorist, and a Catholic cardinal. His works greatly influenced the development of the Tuscan dialect, which is at the root of the modern Italian language. Bembo's *Rime* first appeared in the Index of Parme of 1580, and it was also included in the 1596 version of the Roman Index. His work was prohibited because of rule VII of the Tridentine Index, which explicitly forbids lascivious poetry.

De Vio Tommaso (Gaeta 1468 - Rome 1533, censored in 1581), also known as Thomas Cajetan, was a theologian and Catholic cardinal belonging to the Dominican order. In 1518, while he was the Pope's Legate in Augsburg, he failed to keep Martin Luther inside the Catholic fold. During the Council of Trent, his views on canonicity were discussed and then rejected, and his works were subject to censorship thereafter.

Serry Jacobus Hyacinthus (Toulon 1659 – Padua 1738, censored in 1722) was a theologian and belonged to the Dominican order. He was also consultor of the Congregation of the Index and he taught theology at the University of Padua from 1698. His *Historiae*, written under the pseudonym Augustinus Leblanc, dealt with the Jesuit-Dominican controversy on grace and was prohibited by the Inquisition.

11 FAMILIES OF SCHOLARS

We counted 61 father-son pairs among the members of the University of Padua. The Capodilista family is an ancient noble family of Padua. Many of its members have served as lawyers for the city of Padua or taught at the University. Figure 4 shows one branch of the genealogical tree of the family, which produced three generations of university professors (data from De Marchi (1842)). In more recent times, the has family continued to play an important role in the intellectual life of the city.

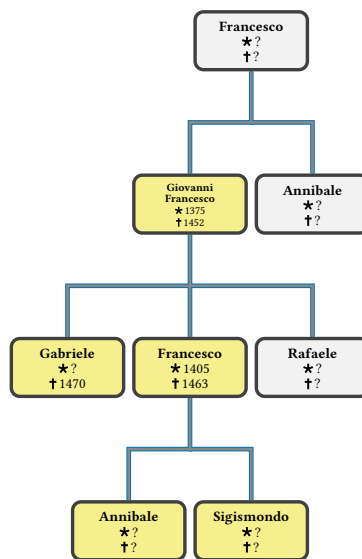


Figure 4: The Capodilista family. Professors at Padua in yellow squares

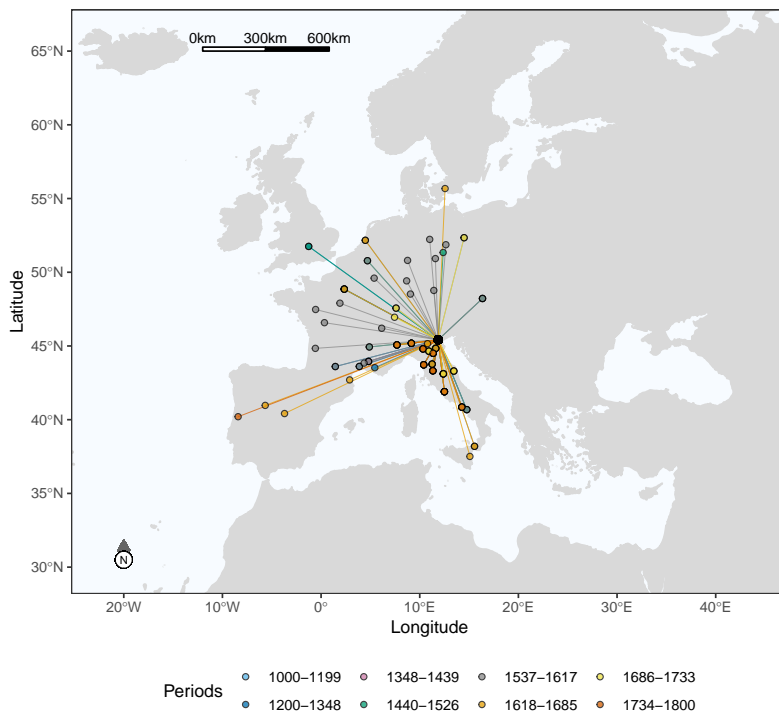


Figure 5: Links between the University of Padua and other universities through scholars' mobility, by period

12 UNIVERSITY NETWORK

Here we assume that when a professor occupied a position at more than one university over his/her life, this established a link between those universities. The universities with which the University of Padua is linked are displayed in Figure 5. During the golden age, 1537–1617, we observe links with several universities in France, the Low Countries, and the Holy Roman Empire. In the last period, 1734–1800, links are restricted to the Italian peninsula (with one exception).

13 ANECDOTES

Jacopo Facciolati, professor of logic and author of our main source “Fasti Gymnasii Patavini” (1757), collected art works and exhibited them in his home in chronological order, to show the progress of painting from the Byzantine to the modern era (Boscaino 1994).

Giovanni Caldiera, a prominent physician and professor of physics, named his daughter Cattaruzza as his sole heir. A believer in apocatastasis, he added to his will a clause stipulating that - in the event of his return to life, with the renewal of the cosmic cycle, his daughter would have to return to him the entire inheritance. Cattaruzza, however, predeceased father (Hill Cotton 1973).

APPENDIX

The individual human capital index q_i of an individual i is given by:

$$\begin{aligned} q_i = & -1.76 + 0.43 \ln(\text{nb. of characters of the longest Wikipedia page}) \\ & + 0.40 \ln(\text{nb. of Wikipedia pages in different languages}) + 0.47 \ln(\text{nb. of works in Worldcat}) \\ & + 0.46 \ln(\text{nb. of publication languages in Worldcat}) \\ & + 0.47 \ln(\text{nb. of library holdings in Worldcat}) \end{aligned}$$

We assume that having no Wikipedia page is similar to having one page with a length of 60 characters and that having no Worldcat page is similar to having a page with one work in one language held by one library. The constant -1.76 normalizes q_i at 0 when there is neither a Wikipedia page, nor a Worldcat page. The weights (0.43, 0.40, etc) are obtained from the first principal component of the five indicators (De la Croix et al. 2020).

The notability Q of a university aggregates the q of the top 5 individuals who were active in the preceding 25 years using the following formula:

$$Q = \sqrt{\sum_{i=1}^5 \frac{1}{s_i} \left(\frac{q_i}{s_i} \right)^2}$$

where s_i is the number of universities at which i had an appointment.

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