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Scholars and Literati at the University of Pisa (1343–1800)

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This note is a summary description of the set of scholars and literati who taught at the University of Pisa from its inception in 1343 to 1800.

1 Sources

To establish the list of professors at the University of Pisa, we relied on various sources. The "Historia eacademiae Pisanae" by Angelo Fabroni (1791) allowed us to learn about the history of this institution and to compile an initial list of scholars. In the various chapters dedicated to the courses taught at the university, we considered the professorships, which come with detailed biographical information. From the same author, we consulted the work "Memorie istoriche di più uomini illustri pisani" (1792) to obtain further information about the scholars. Additionally, we used the two volumes edited by the Rectoral Commission for the history of the University of Pisa (Various authors 2003a, 2003b), dedicated to the history of the university. Finally, we consulted the "Dizionario biografico degli italiani" (Istituto dell'Enciclopedia Italiana (1961)) in the Treccani Encyclopedia.

2 The University

On September 3, 1343, Pope Clement VI issued the bull "In supremae dignitas," granting the University of Pisa the status of *Studium Generale*. This papal attestation was rare at the time, and the University of Pisa was one of the first to obtain it. Before this date, there had been schools where important figures like the jurist Burgundio da Pisa or the mathematician Leonardo Fibonacci had taught, but, as observed in other contexts, these schools did not have the *Studium Generale* status.

In the early period of its existence, only theology, law (civil and canon), and medicine were taught there. Scientific subjects were less represented, unlike in later times.

The first decades of its existence were marked by turbulence following the historical events in Tuscany. Until 1473, the university did not have an official seat, and classes were held in professors' homes or in churches. Lorenzo de' Medici commissioned the construction of a palace (Palazzo della Sapienza), which remained unused until 1543 due to Pisa's rebellion against the city of Florence and health difficulties related to the plague.

The reopening of the University of Pisa took place in 1543, thanks to Duke Cosimo I de' Medici. The decline of the Medici Grand Duchy had an impact on the life of the university. It was only with the arrival of the Lorraine dynasty that the University of Pisa regained fame, aided by the construction of the Specola (astronomical observatory) and the development of the botanical garden. During this period, new chairs were established, including experimental physics and chemistry.

3 Descriptive statistics

Table 1 displays descriptive statistics. We have information on 1,585 scholars. There is a significant number of observations starting from the third period, when the university had a stable location and the political events in the Grand Duchy were less tumultuous.

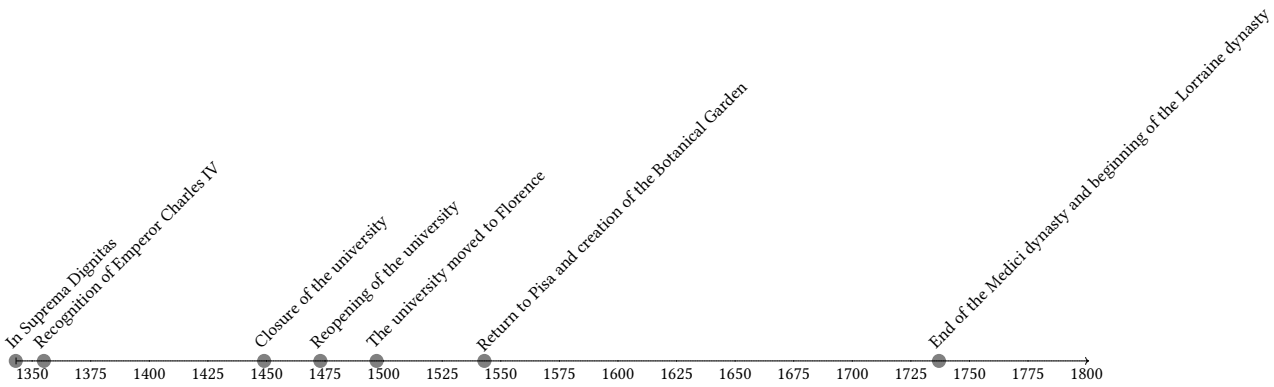

Figure 1: Timeline of the University of Pisa

Period	nb. obs	birth known date	birth known place	mean age at appoint.	mean age at death	med. dist. birth-univ.	with Wiki.	with VIAF
1200–1347	33	18.2%	54.5%	39.8	69.2	59	18.2%	18.2 %
1348–1449	10	40%	70 %	30	71.2	87	40 %	40 %
1450–1526	361	15.2%	87.3%	36	63.7	88	9.7%	16.3%
1527–1617	418	17%	96.2%	39.3	64.7	69	10.5%	23.7%
1618–1685	346	16.8%	96.5 %	36	66.5	69	11 %	17.1 %
1686–1733	118	21.2%	97.5 %	32.3	69.2	69	11 %	22.9 %
1734–1800	297	27.3%	99 %	34.1	69	69	12.8 %	25.3 %
1200–1800	1585	19%	93%	35.8	66.7	69	11.3%	20.8%

Table 1: Summary statistics by period

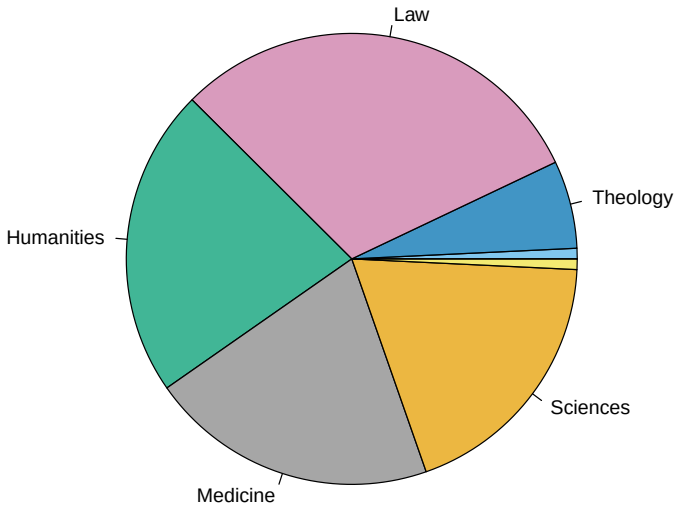

Figure 2: Broad fields at the University of Pisa (published scholars only)

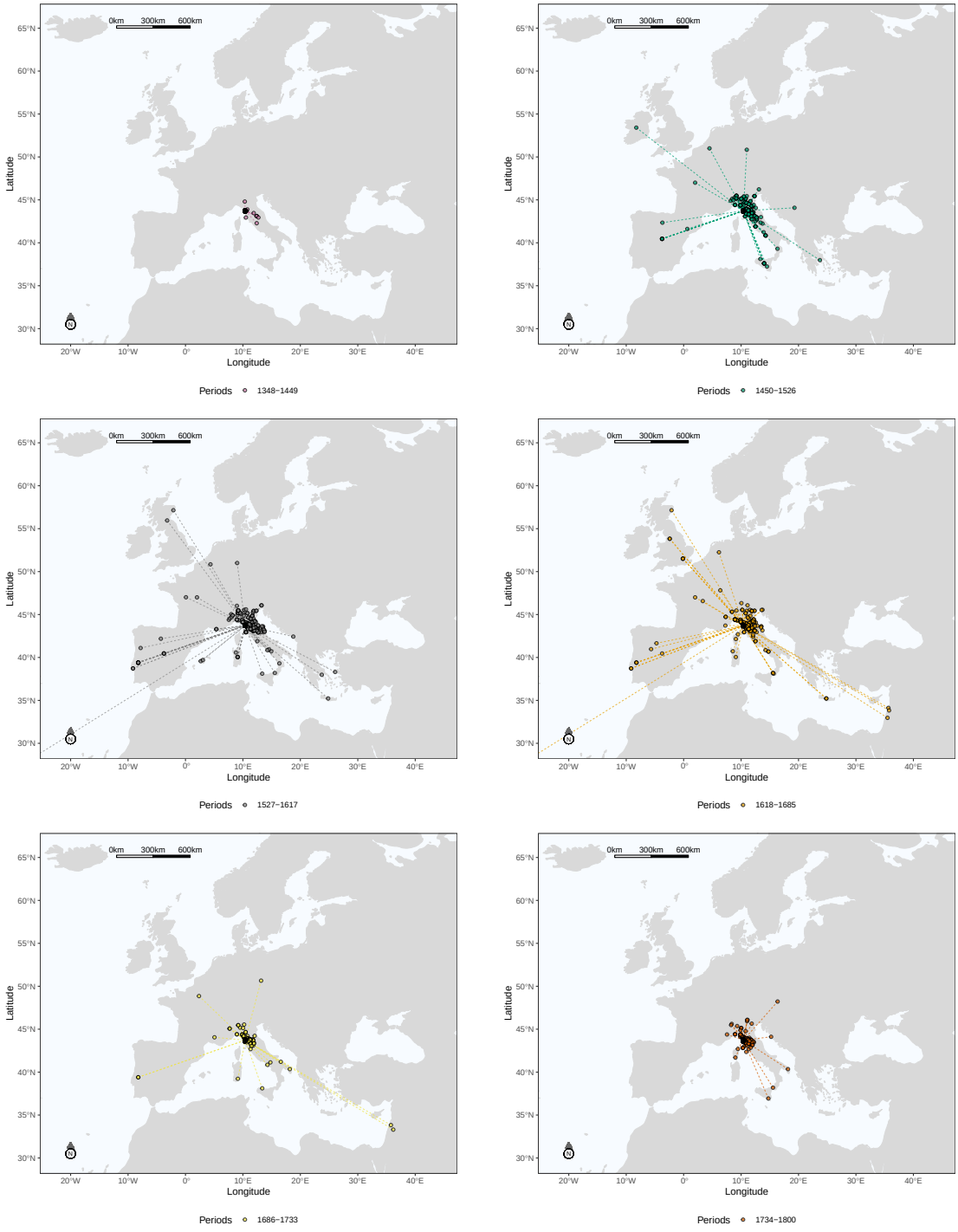

Figure 3: Places of birth of the scholars and literati at the University of Pisa

Overall, the birthplace is known for 93% of the scholars. The median distance between the University of Pisa and the birthplace is 69 km, confirming the local nature of this university. Most scholars do not have a Wikipedia page, and only 20.8% appear in the VIAF catalog.

4 Fields

Figure 2 shows the balance between the different fields. Since its origins, the University of Pisa distinguished itself particularly in the teaching of scientific disciplines. The figure shows that law, humanities, medicine, and sciences are predominant, while theology holds a smaller share.

5 Place of birth

Figure 3 displays the documented birthplaces for the scholars and literati who were active at the University of Pisa by period. Starting from the second half of the 15th century, the University of Pisa began to arouse growing interest. The majority of professors come from Tuscany or other areas of the Italian peninsula. During this period, with the fall of Constantinople, numerous teachers originating from Greece and the territories of the former Byzantine Empire began to teach at the University of Pisa, contributing to the revival of Greek and Roman studies, arts, and sciences in the West. The mobility of professors originating from those territories continued in the third (1527-1617) and fourth (1618-1685) periods under consideration.

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 VIAF and Wikipedia, using principal component analysis. We also compute the notability of the university at each date by averaging the human capital of the best five scholars active at Pisa 25 years before that date. The details are given in Curtis and De la Croix (2023). Figure 4 shows the names of all the scholars with a positive human capital index. The orange line displays the notability of the university, based on how well published its top scholars were. Notability rose circa 1480, then reached a plateau, before peaking at the end of the 18th century.

7 Top 5 professors

Galileo Galilei (Pisa 1564 – Arcetri 1642) was an astronomer, physicist, and engineer, often referred to as the “father of modern science.” He was a key player in the Scientific Revolution, as he implemented an objective methodology while conducting scientific research. Some of his most prominent discoveries were the properties of the pendulum, a pioneering microscope, and a telescope that he elaborated himself to observe the Milky Way, Saturn’s rings, and the four satellites revolving around Jupiter to which he gave his name. In addition, he supported Copernicus’s theories on heliocentrism in “Dialogue Concerning the Two Chief World Systems” (1632). As a result, the Inquisition tried him and found him guilty of being a heretic. He spent the rest of his life under house arrest.

During his time at the University of Pisa, Galileo focused his studies on motion, particularly on the theory that considered "impetus" as the cause of "violent motion," thereby opposing the Aristotelian approach that explained motion as the result of the medium in which bodies move.

Galileo expressed his dissatisfaction with the Aristotelian atmosphere prevailing at the University of Pisa at the time, even through a 301-line poem entitled "Against The Donning Of The Gown" (Tongiorgi Tomasi (2009)). In this work, he conveyed his discontent with the prevailing cultural environment and contested the obligation imposed on professors to wear the toga even outside academic settings.

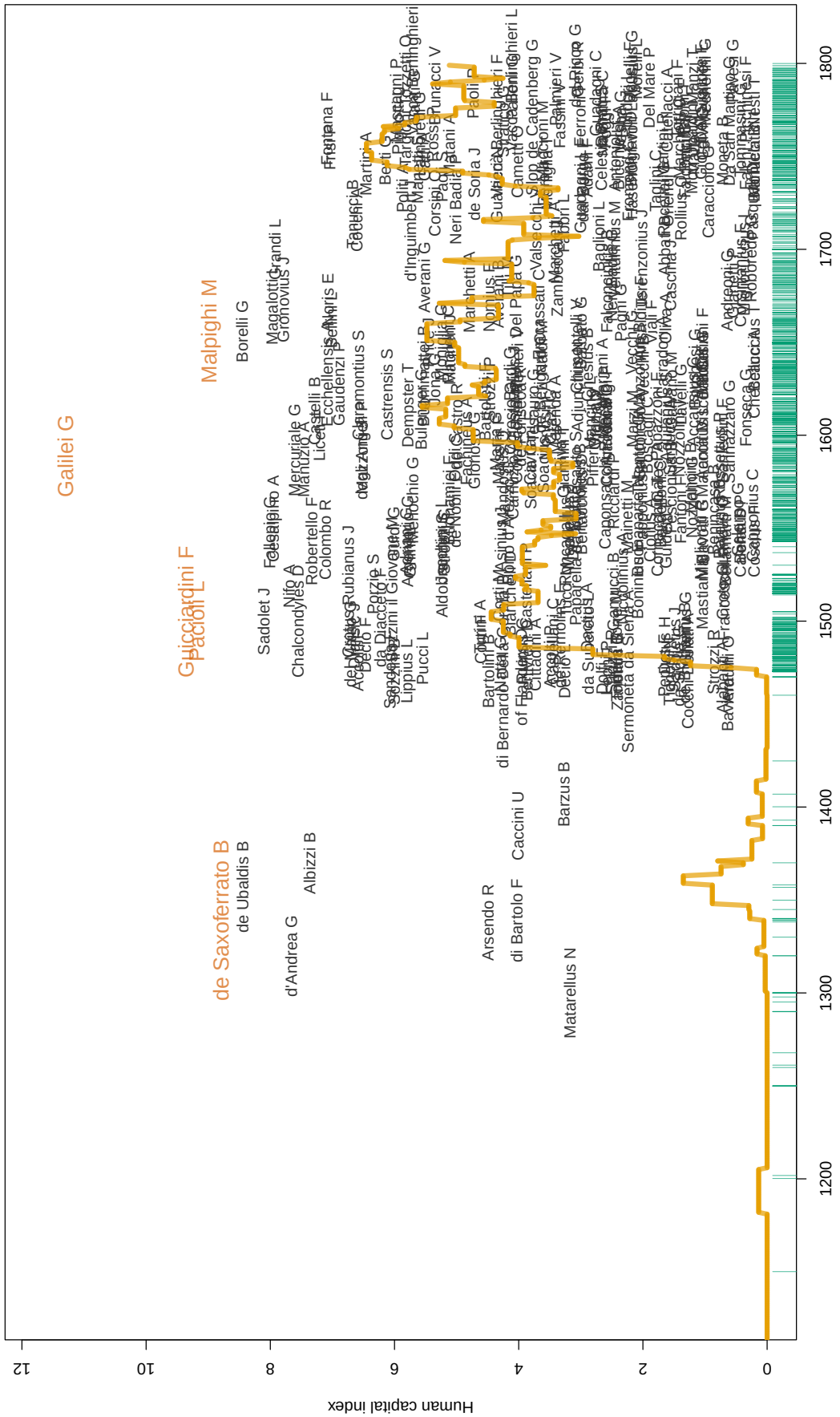

Figure 4: Famous scholars and university notability (orange)

Francesco Guicciardini (Florence 1483 – Arcetri 1540) was a diplomat, politician, and historical writer with strong ties to the Medici and Niccolò Machiavelli. In 1512, he was appointed ambassador to Ferdinand the Catholic, but soon returned to Florence as a magistrate. The following year, he entered government thanks to Pope Leo X. He was successively governor of Modena (1516), Reggio (1517), Parma (1521), and Romagna (1524). Pope Clement VII asked him for advice, which resulted in an alliance with Francis I in the League of Cognac (1526) against Charles V. Francesco Guicciardini was then appointed commander of the pontifical troops. One of his most important works is "The History of Italy" which he wrote during the period 1537-1540. He provided an impartial and realistic account of the Florentine political events that occurred from Lorenzo the Magnificent's death (1432) to Pope Clement VII's death (1534). His statue can be seen at the Uffizi Gallery in Florence.

Luca Pacioli (Sansepolcro 1448 – Sansepolcro 1517) was a mathematician and economist who largely contributed to accounting. In 1470, he became a member of the Franciscan Order and he then had the opportunity to teach mathematics at several prestigious Italian universities. Once back in Sansepolcro, he wrote "Summa de arithmetica, geometria, proportioni et proportionalita" (1494), in which he elaborated the first theoretical framework for the double-entry bookkeeping system. In 1497, he was invited to Milan by Duke Ludovico Sforza where he started to closely work with Leonard da Vinci. A few years later in Florence, Luca Pacioli was appointed Superior of the Franciscan Order in Romagna by Pope Alexandre VI. In Pisa, Luca Pacioli taught Euclid in the years 1500-1503 and 1504-1506 (Grendler (2002)).

Marcello Malpighi (Crevalcore 1628 – Rome 1694) was a biologist, anatomist, and physiologist. He is remembered as the founder of microscopical anatomy. Thanks to his research with the use of the microscope, he contributed to William Harvey's theory of blood circulation by observing that capillaries connect veins with arteries. He also studied plant anatomy and the human nervous system, and he eventually discovered the role of taste buds. He gave his name to the renal or Malpighian corpuscles and to the botanical family Malpighiaceae. In 1669, and became a member of the Royal Society in London, and in 1691, he was appointed official doctor by Pope Innocent XII.

Bartolo de Saxoferrato (Sassoferrato 1313 – Perugia 1356) was a jurist, a specialist of Medieval Roman Law belonging to the postglossator movement. In 1355, he was appointed consiliarus by Emperor Charles IV. He was among the first to theorize international law, for instance by strengthening the autonomy of the city-states in Northern Italy, while incorporating their interactions with one another under the Holy Roman Emperor. His reputation was so great that he inspired several characters in plays, such as Dr. Bartolo in "The Marriage of Figaro," as well as the adage "nemo bonus íurista nisi bartolista" (no one is a good jurist unless he is a Bartolist).

8 Related scholars

Andreas Vesalius (Brussels 1514 – Zakynthos 1564) was an anatomist and physician. He is considered the founder of modern anatomy. During his stay in Pisa, invited by Grand Duke Cosimo I de' Medici, Vesalius worked at the Nuovo Studio Pisano, conducting public dissections. He managed to dissect two female corpses, a nun and a deformed woman, which was particularly interesting for an anatomist who had primarily worked with the corpses of male convicts. He also dissected a third corpse, that of Marcantonio Bellarmati, a reader in civil law, providing a detailed account of this autopsy in his work "Epistola Radicis Chynae" (1546). Although Cosimo I offered him an annual salary to study and teach anatomy at Pisa, Vesalius refused, and the university remained without an anatomy teacher until 1545. Vesalius stayed in Pisa for approximately three weeks at the beginning of 1544, teaching anatomy and conducting dissections without receiving a salary. His refusal of a salary and the uncertainty of his posi-

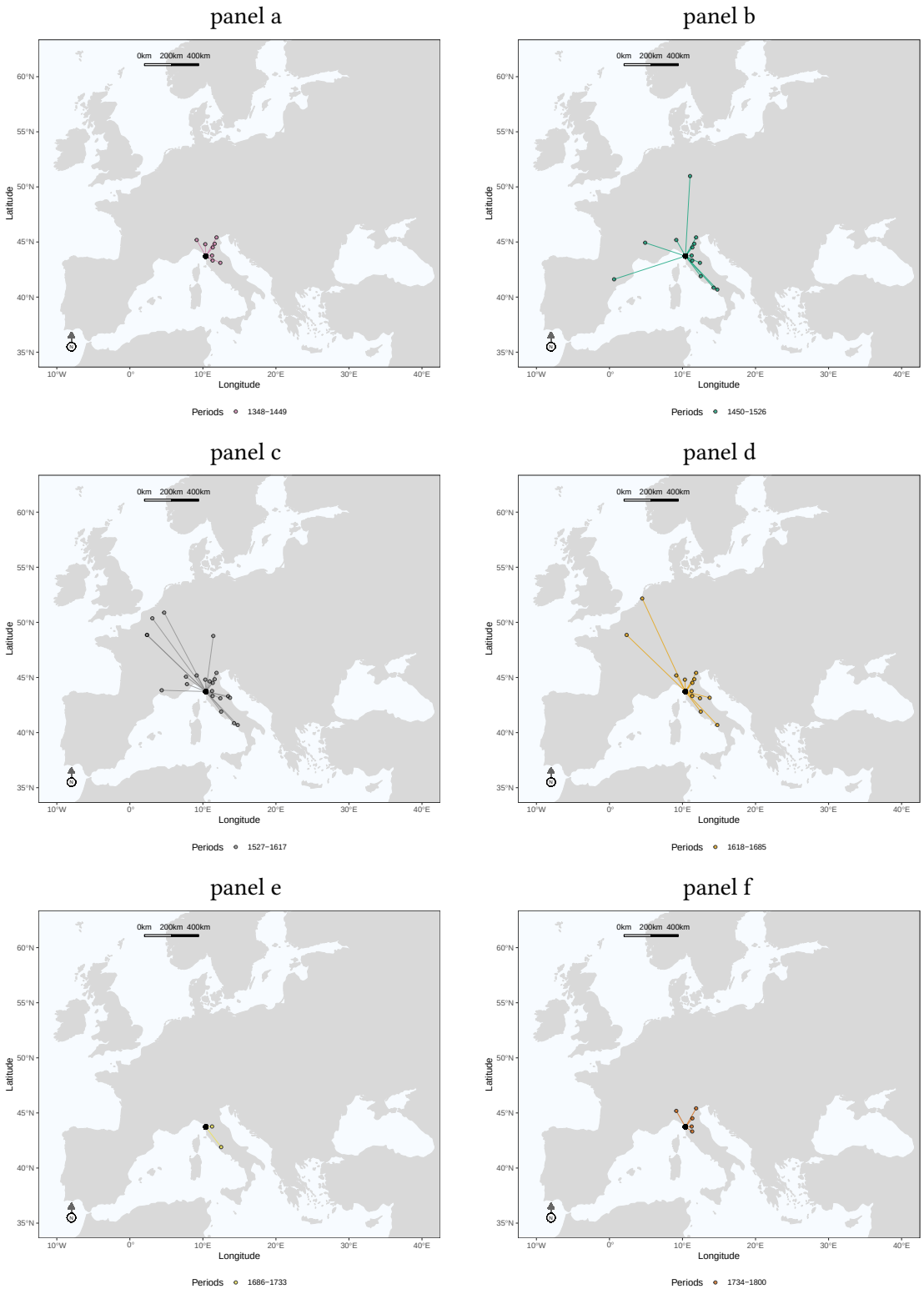

Figure 5: Links between Pisa and other universities through scholars' mobility, by period

tion with Emperor Charles V prevented him from being appointed as the anatomy lecturer in Pisa.

Leonardo Fibonacci (Pisa c.1170 – Pisa c.1250), an Italian mathematician also known as Léonard de Pise, was born and died in Pisa. He received his education in North Africa, where his father worked as a merchant. Throughout his journeys in the Mediterranean, Fibonacci extensively studied the algebraic works of al-Khuwārizmī and recognized the Indo-Arabic numeral system as highly advanced. Upon returning to Pisa, he published "Liber abaci" in 1202, introducing the Indo-Arabic numeral system and disseminating knowledge from Arabic sources in algebra and arithmetic. In 1220, Fibonacci further contributed to mathematical literature by publishing "Practica geometriae," a comprehensive summary of contemporary knowledge in geometry and trigonometry.

9 University network

Our assumption is that a professor's involvement in multiple universities throughout their career establishes a connection between those institutions. We present the universities that were linked to the University of Pisa during each period in Figure 5: there are not many connections with universities in the rest of Europe, and, notably, during the period 1666-1733, the connections with other Italian universities decrease drastically.

10 Who's who on the moon

Another way to measure the notability of individuals is to look for signs of recognition such as street names, ... and lunar crater names. The following three professors received this honor.

Galileo Galilei (Pisa 1564 – Arcetri 1642) see above.

Fortunato Liceti (Rapallo 1577 – Pisa 1657) was an Italian physician and philosopher. He taught theoretical medicine at several Italian universities, including the University of Pisa and the University of Bologna. One of his most notable works is "De Monstruorum Causis, Natura et Differentiis" (On the Causes, Nature, and Differences of Monsters), published in 1616. This text addresses the issue of anomalous phenomena in the animal and human kingdoms, seeking to explain the causes and nature of genetic anomalies. Liceti was also an advocate of the concept of "epigenesis," the idea that organisms develop progressively over time rather than being fully formed and pre-existent.

Vincenzo Renieri (Genova 1606 – Pisa 1647) was an Italian astronomer and mathematician. He secured a mathematics professorship at the University of Pisa in 1640 with the support of Prince Leopoldo de' Medici and Galileo, his mentor. Subsequently, he also obtained a Greek professorship, a subject he had taught for many years at the school of his Monte Oliveto congregation. His work primarily focused on observations of Jupiter's satellites, contributing to the improvement of Galilean tables concerning the movements of these celestial bodies. His studies on Jupiter's moons were published only after his death.

11 Final Thoughts

Pisa is an old university with strong scientific traditions.

12 Anectodes

The anatomist physician Antonio Catellacci was highly successful among his students. In fact, his explanations were particularly popular because they were interwoven with literary references. His love for humanistic culture led him to rewrite the human physiology curriculum in Latin elegiac distichs (stanzas composed of two lines, the first being a dactylic hexameter and the second a dactylic pentameter), in order to make it easier for students to learn it.

Acknowledgments

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