ARCHITEKTURWISSENSCHAFT

Vom Suffix zur Agenda

Juan Almarza Anwandter, Jan Bovelet,
Michael Dürfeld, Eva Maria Froschauer,
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Forum Architekturwissenschaft
Band 5

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Die Schriftenreihe *Forum Architekturwissenschaft* wird herausgegeben vom Netzwerk Architekturwissenschaft, vertreten durch Sabine Ammon, Eva Maria Froschauer, Julia Gill und Christiane Salge.

Was ist Architekturwissenschaft? Der Begriff lässt Unschärfen zu und kann so auf der einen Seite suggestiv und produktiv sein, auf der anderen Seite aber wirft er zahlreiche Fragen auf: Von welchen Architektur- und Wissenschaftsvorstellungen, sei es in der Geschichte oder in der Gegenwart, sprechen wir hier? Was meint Forschung unter dieser Begriffsklammer Architekturwissenschaft und mit welchem Material und welchen Methoden arbeitet sie? Welche Akteurinnen und Akteure betreiben Architekturwissenschaft und mit welchen Perspektiven? Diese Fragen waren der Gegenstand des 5. Forums Architekturwissenschaft unter dem erweiterten Titel „Vom Suffix zur Agenda“, das vom 14. bis zum 16. November 2018 an der BTU Cottbus-Senftenberg stattfand. Das Ziel der Tagung lag in der weiteren Klärung und Präzisierung des Selbstverständnisses, der Fundierungen, der Arbeitsfelder und der Potentiale von Architekturwissenschaft, gerade auch vor dem Hintergrund der vielfältigen Sichtweisen auf Architektur, für die das Netzwerk seit seiner Gründung steht.
Der vorliegende Band versammelt erstmals unter dem Titel „Architekturwissenschaft“ eine Reihe unterschiedlicher Aspekte des Zusammenkommens von Wissenschaft und Architektur und zeigt auf, welche Rolle das eine für das andere spielt, gespielt hat, oder in Zukunft als institutionalisierte Architekturwissenschaft spielen wird.

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PAOLO SANVITO

Architecture as One of Many Mathematical Sciences

Was Mathematics an Auxiliary Science of Architecture in the Early Modern Period?

Some attention should be paid to changes occurring in Northern Italian academic circles during the early modern period in the definition of the natural sciences. Specifically to the extent to which they were seen as related to other disciplines such as geography, geodesy, 'the artes' or arts 'of drawing': architecture, fortification and mathematics. In Padua, what we may call peripheral realms of science were definitively finding a stronger legitimation in the scholarly world. At the same time these peripheral realms also became absorbed by the official sciences around the year 1550, anticipating later changes in the academic perception.Let us be reminded of developments around the earliest invention and subsequent diffusion of technical schools in the 18th century, where physics, astronomy and statics began to be taught. Even in the late Renaissance, the ancient science of mechanics was occasionally identified with engineering ('scientia de ingeniis') or architecture, which was theoretically defined a 'Scientia', and ended up being classified among the 'scientiae mediae' or mediation sciences.

Since the middle of the 16th and during the following century in Italy, some decisive changes occurred in the academic circles concerned with scientific teaching. The 17th century has long been recognised as a century of innovations in scientific history, opening with Galileo and, so to say, closing with Newton's *Principia mathematica*. Therefore, there is large consensus about

the importance of this specific historical period. However, the historical turn happened in the 16th century. In this period especially the Paduan University was concerned with updating the definition of the natural sciences: in first place physics, astronomy, mathematics and harmonics (beside medicine or biology). The former were seen as intrinsically related to other subordinate disciplines, particularly the 'artes machinativae' of hydraulics, geography, geodesy and the 'artes designamenti' or 'arti del disegno' respectively of drawing, such as architecture. In addition there were also the military arts, fortification construction, metal working, and of course geometry.

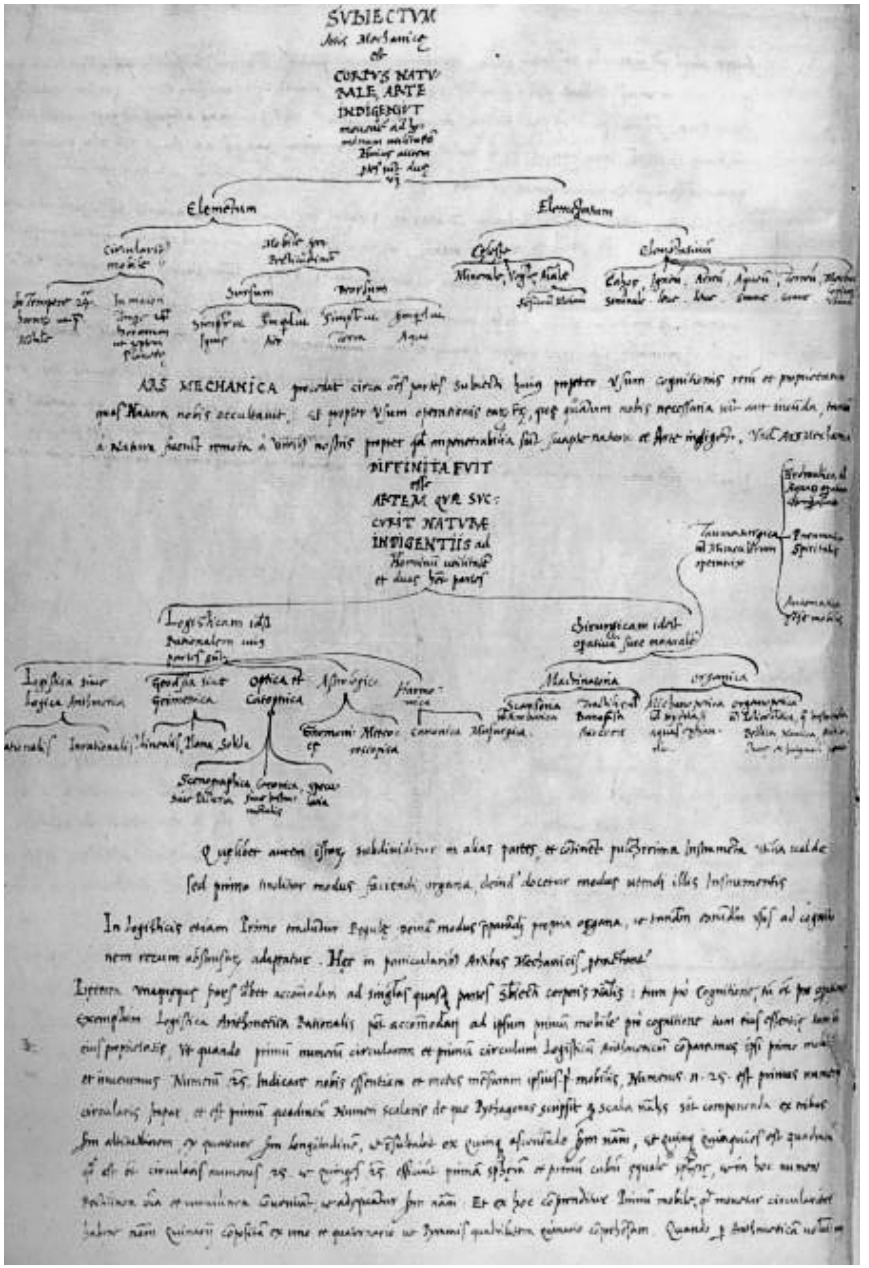
In fact, in Padua, each of those realms of science which may be thought of as peripheral, due to their practical nature, such as geodesy or engineering, were definitively finding stronger legitimation in the scholarly world as they became further absorbed into the more strictly scientific realm. The impulse came from politics: the administrative crisis of the Republic after the War of Cambrai (1509) had set the entire Venetian state on fire at multiple levels. Communication routes between the many distant parts of the state needed improvement, and territorial control had become a necessity. In fact, the threat of aggression through the Habsburg monarchy, or the Ottoman empire at the border to Krain, in Italian Carniola, or present Slovenia, was a just fear. The ancient division of the natural sciences from mechanical craftmanship proved highly unproductive at this moment in history, at least with regard to Northern Italy. The experimental sciences, such as the former science of weights ('ratio ponderum or Scientia de ponderibus', i.e. medieval mechanics, as conceived by Jordanus Nemorarius or Giordano di Nemi), or optics were at the same time becoming thoroughly absorbed by the official sciences[1] around 1550. This anticipated more recent developments in academic perception and in current definitions. Optics

1 Walter R. Laird: The scope of Renaissance mechanics. In: Osiris, Ser. 2, vol. 2 (1986) p. 43, 68, pp. 46–7.

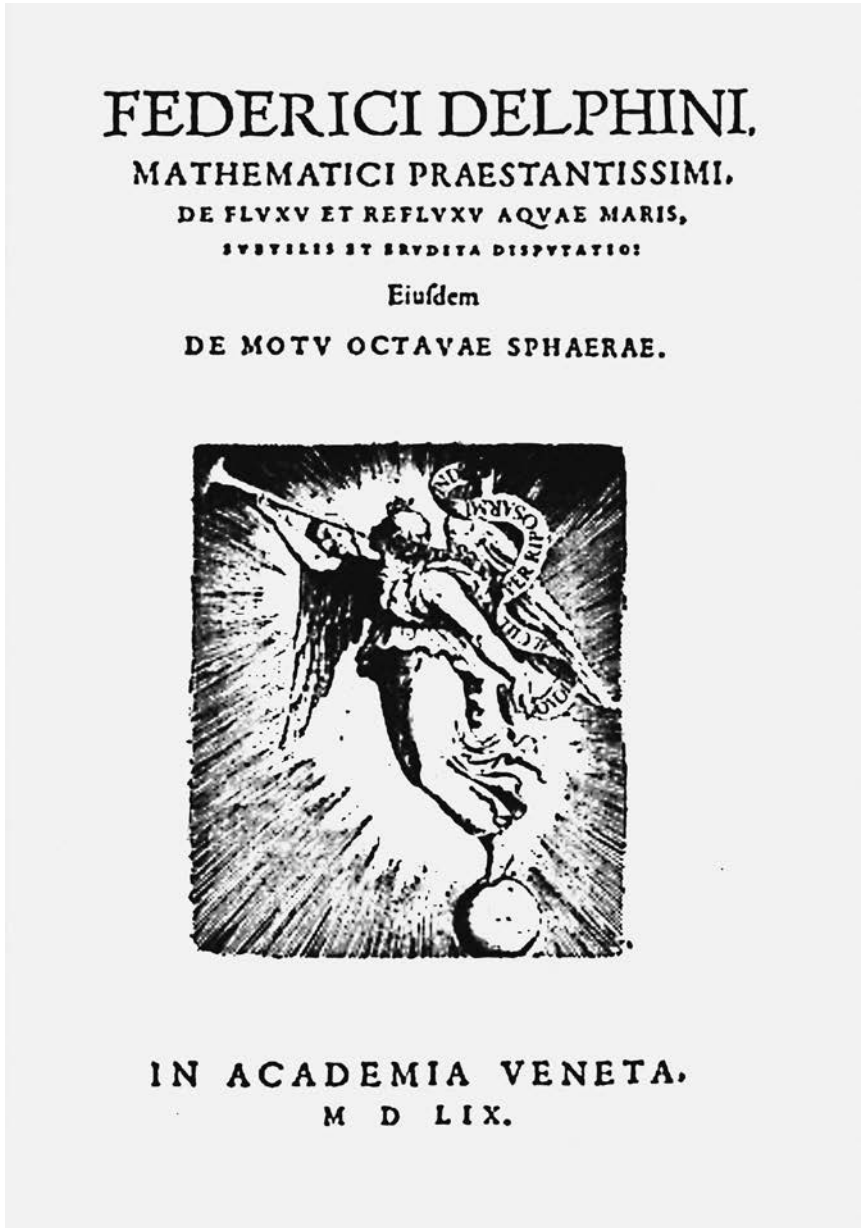
● Fig. 1: Biblioteca or “Libraria” Marciana, Venice – Jacopo Sansovino. After 1537. Source: Von Venice scapes – Eigenes Werk, Gemeinfrei, https://commons.wikimedia.org/w/index.php?curid=90150457 (January 30, 2021)

was developing fast and becoming important, a fact that made it even clearer that before one begins to study a science or a discipline, one needs to clarify its relationship to the others.

For example (in one initial case), academic perception of the sciences changed with Ettore Ausonio, who wrote the *Degli orologi, astrolabi et altri instrumenti*, which can now be found in Milan in his codex of optical writings: he proves the shift to new objects of interest. Ausonio was the ‘Reggente della stanza dei Matematici of the Accademia Venetiana or della Fama’, hosted in the Venetian ‘Libreria’ (Fig. 1), today the Marciana Library, diagonally opposite to St Mark’s Basilica. After the foundation of the Academy in 1561, Ausonio was repeatedly appointed by its directors to publish some of the most up to date texts on optics and hydraulics of the early modern era. He also emphasised with his scholarly contribution as a teacher and with his writings the usefulness of optics for a whole range of practical, visual and/or mathematical disciplines, involving navigation, painting, geography, time measuring (which depends on the light and shadows of



● Fig. 2: Ettore Ausonio, diagram of classification of the sciences, from his untitled manuscript, Bibl. Ambrosiana, Milano, G 121 Inf., f. 16v. Source: S. Dupré, Utrecht


FEDERICI DELPHINI.
MATHEMATICI PRAESTANTISSIMI.
DE FLVXV ET REFLVXV AQVAE MARIS,
SVBTILIS ET ERVDITA DISPVTATIO:
Eiuſdem
DE MOTV OCTAVAE SPHAERAE.
IN ACADEMIA VENETA.
M D LIX.

● Fig. 3: Federico Delfino: De fluxu maris, Venice, 1559; editio princeps 1528. Source: https://books.google.de/books?id=m-RQAAAAcAAJ&dq=de%20fluxu%20maris&hl=de&pg=PP7#v=onepage&q=de%20fluxu%20maris&f=false (April 10, 2020)

● Fig 4: Titian/Cristoforo Rosa, trompe-l'œil ceiling with the Allegory of Sapientia, ca. 1564. Marciana, Antechamber and counciliary room of the Accademia Venetiana where Ausonio met with colleagues Barbaro or Pinelli to deliberate about the academic editorial programme. Source: Fototeca Archivio Lionello Venturi

dials), geodesy and a subdivision of the arts of drawing (Ausonio, *Degli orologi, astrolabi et altri instrumenti*;[2] containing also mostly optical writings, a manuscript in the Bibl. Ambrosiana, Milano; a further Bibl. Ambrosiana manuscript, MS D170 Inf., contains most of Ausonio's notes on cosmography, some of them as late as 1568); in Ausonio's manuscripts we find also a lot of the earliest calculation tables for use on dials, for example that of Venice for the latitude 45°.[3]

But this expansion in knowledge should not have seemed out of the ordinary during this period of history: all these sciences had already belonged, according to the still valid Aristotelian categories, to the field of "intermediate mathematics", those of

2 Manuscript Bibl. Ambrosiana, Milano, D 178 inf., p. 283 and following.

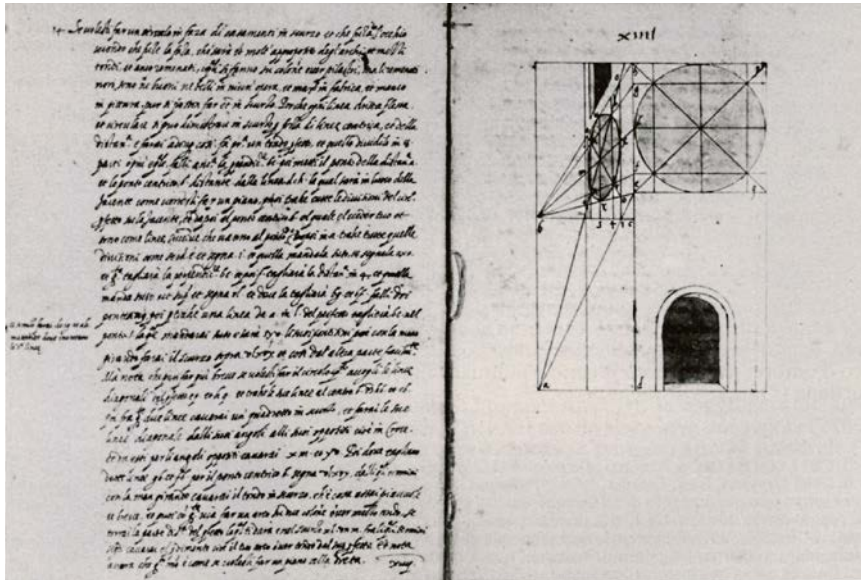
3 Giuseppe Moleto: Manuscript Bibl. Ambrosiana, Milano, D178 Inf., ff. 88r.

an experimental kind. Technically, they could be classified as middle, 'mediae', sciences, "according to their object", 'subjectum', as the diagram reproduced here explains (Fig. 2). What was the status, for example, of the science of hydraulics? Was it even *worthy* of scholarly research in the second half of the century? As one of the editorial directors at the Accademia, Ausonio arranged the posthumous edition of his former teacher Federico Delfino's (†1547) treatise *De fluxu maris* (Fig. 3) and also the translation into Italian of the manuscript *Tractatus de occulta causa fluxus et refluxus maris* (On the Occult Causes of Sea Tides) by Federico Crisogono da Zara (†1538). Modern historians of science have extensively disputed and investigated the specific issue of the reciprocal status of all these disciplines, which can be recognised as the definition of early modern 'mixed' or 'mediation sciences', subordinate to Aristotle's natural sciences.

A second highly explicative example is offered to us by a close acquaintance of Ausonio's: mathematics professor Giuseppe Moleto, one of bishop Daniele Barbaro's friends (Fig. 4) and also a distinguished cosmographer, mathematician and Chair for Mathematics at the University of Padua (Fig. 5). He states in his *Dialogo della Mechanica* (Fig. 6), now in the Ambrosiana Library, that mechanics should be established as an average Aristotelian science, alongside the other 'mathematical' sciences (such as astronomy): "The intermediate sciences are those which concern the [concrete] material as to their subject, and therefore are said to be natural; as to their demonstration, they concern mathematics. This is proved by Aristotle at the beginning of his *Mechanical Problems* and likewise in the Second Book of the *Physiká*. Furthermore, in many passages of the *Metaphysics*, this is evident".[4] Mechanics should be therefore detached from, but dependent upon natural philosophy as such, which was part of

4 Giuseppe Moleto: Manuscript = *Excerpta astronomica* Bibl. Ambrosiana, Milano, S 103 Sup., f. 141v, "scritto al Sr. Georgio Gozzi": "Le scienze medie sono quelle, che quanto al soggetto riguardano la materia sensibile, et però sono dette naturali, et in quanto alla demonstratione riguardano la mathematica, del che fa fede Aristotele nel principio delle sue mechaniche e così ancora nel secondo della fisica; et in molti luoghi della sua metafisica, come in quelli si può vedere." To explore Ausonio in more depth see also: Sven Dupré: Galileo, the Telescope, and the Science of Optics in the Sixteenth Century. Dissertation, Universiteit Gent 2002.

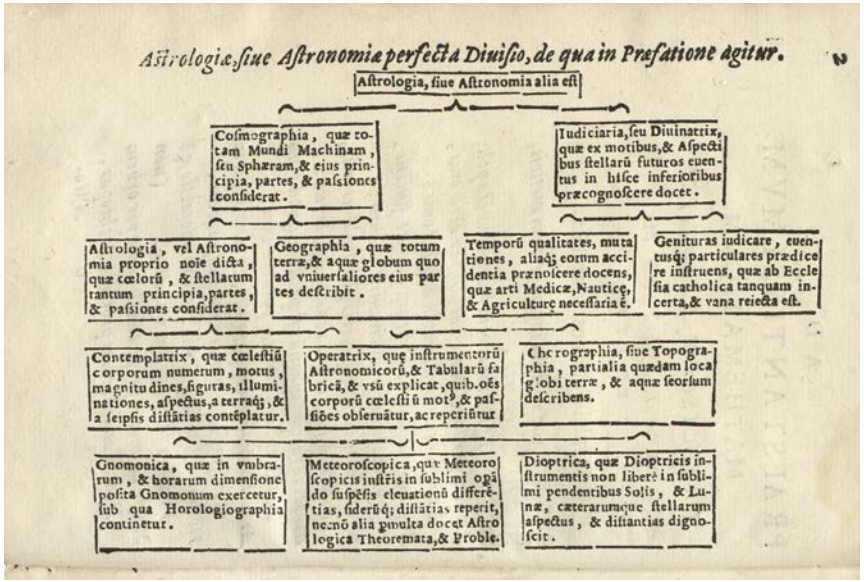
● Fig. 5: Geographia di Claudio Tolomeo, second edition, Venezia presso Vincenzo Valgrisi, 1573, non numbered page: Portrait of Ptolemy. Source: https://books.google.de/books?id=vqIsob-mWrYC&dq=Geographia%20di%20Claudio%20Tolomeo%2C%20second&hl=de&pg=PP7#v=onepage&q&f=false (April 10, 2020)



● Fig. 6: Sketch by Moleto (in Pinelli's library) on the perspective: "Prospettiva, o sia trattato matematico sopra i modi di mettere varie cose in perdimento, ò sia scorcio dichiarato con le figure". Ms. B.A.M. P 103 Sup. [manuscript]. Source: Biblioteca Ambrosiana Milano

the regular philosophical curriculum in Padua – and elsewhere (Fig. 7). For mechanics, Moleto used the scholarly lemma of "middle science" or Scientia media. Mechanics was no more a practical art, yet it was not entirely a natural science either. It was, finally, "something in the middle"[5] while at the same time being about to be re-founded and redefined, becoming more and more mathematical or 'subalterna' i.e. "subalternate" to mathematics in the same manner as "astronomy, harmonics and optics". More specifically mechanics was subalternate to geometry, rather than to mathematics. But the idea of subalternation, i.e. a hierarchic system, still remained valid!

5 Walter R. Laird: The unfinished mechanics of Giuseppe Moletti [Moleto]: an edition and English translation of his Dialogue on Mechanics, 1576. Toronto, Buffalo, London 2000, Introduction, p. 4. And Walter Roy Laird: Nature, Mechanics, and Voluntary Movement in Giuseppe Moletti's [Moleto's] Lectures on the Pseudo-Aristotelian Mechanica. In: Walter Roy Laird, Sophie Roux (ed.): Mechanics and natural philosophy before the scientific revolution. London 2008, pp. 173–183, p. 173: "not merely that mechanics imitates nature but also that nature itself uses mechanics in its own works"; and 174: "mechanics emerged as a mathematical science, promising rational and mathematical explanations of the marvellous effects produced by the arts."



● Fig. 7: Francesco Barozzi: Cosmographia in quatuor libros distributa …, 2nd ed., Venetiis 1598, c. 2 or 1585 (many editions; the Italian version was Venetia 1607). Source: https://books.google.de/books?id=ZYx6aqj-Zh0C&hl=it&pg=PP5#v=onepage&q&f=true (April 10, 2020)

As we read in this same manuscript treatise about the statute of mathematics, the *Discorso che cosa sia Matematica* (Manuscript of the Ambrosiana Library, shelf mark S 103 Sup.) the middle sciences are, as we read above, the following ones.[6]
However, Renaissance scholars were able to demonstrate that it was exactly the debate in these years, around the Aristotelian *Mechanical Problems* (orig. Mechanica; or Μηχανικά), the ancient handbook of mechanics, which lead to the transformation of the "very status of [this] science".[7]
At this point we should not forget that someone had opened this path in Venice even as early as 1497: three years before he died

6 See footnote 4. As quoted from Corrado Dollo: Astrologia e astronomia in Sicilia dalle Efemeridi di G. Moleto agli Almanacchi di G.B. Hodierna. In: Pietro Nastasi (ed.): Il meridione e le scienze, secoli XVI–XIX, Atti del Convegno, Palermo 1985. Palermo 1988, pp. 203–228, p. 274, from the above mentioned Moleto ms., in Bibl. Ambrosiana, Milano, shelf mark S 103 Sup., f. 141v, = *Excerpta astronomica*; Moleto, renowned among Galileo's predecessors received a notable "augmento […] di stipendio" in 1584 according to the same Dollo, Modelli scientifici e filosofici nella Sicilia spagnola, Napoli 1984, p. 268.

7 Laird 2000 (note 5), Introduction, p. 4.

and way earlier than Barbaro or Moleto, Giorgio Valla[8] printed his treatise *Cleonidae harmonicum introductorium interprete Georgio Valla placentino* in Venice. The treatise is essentially a theoretical-harmonical exposition, which significantly also included Vitruvius's *De Architectura*.[9]

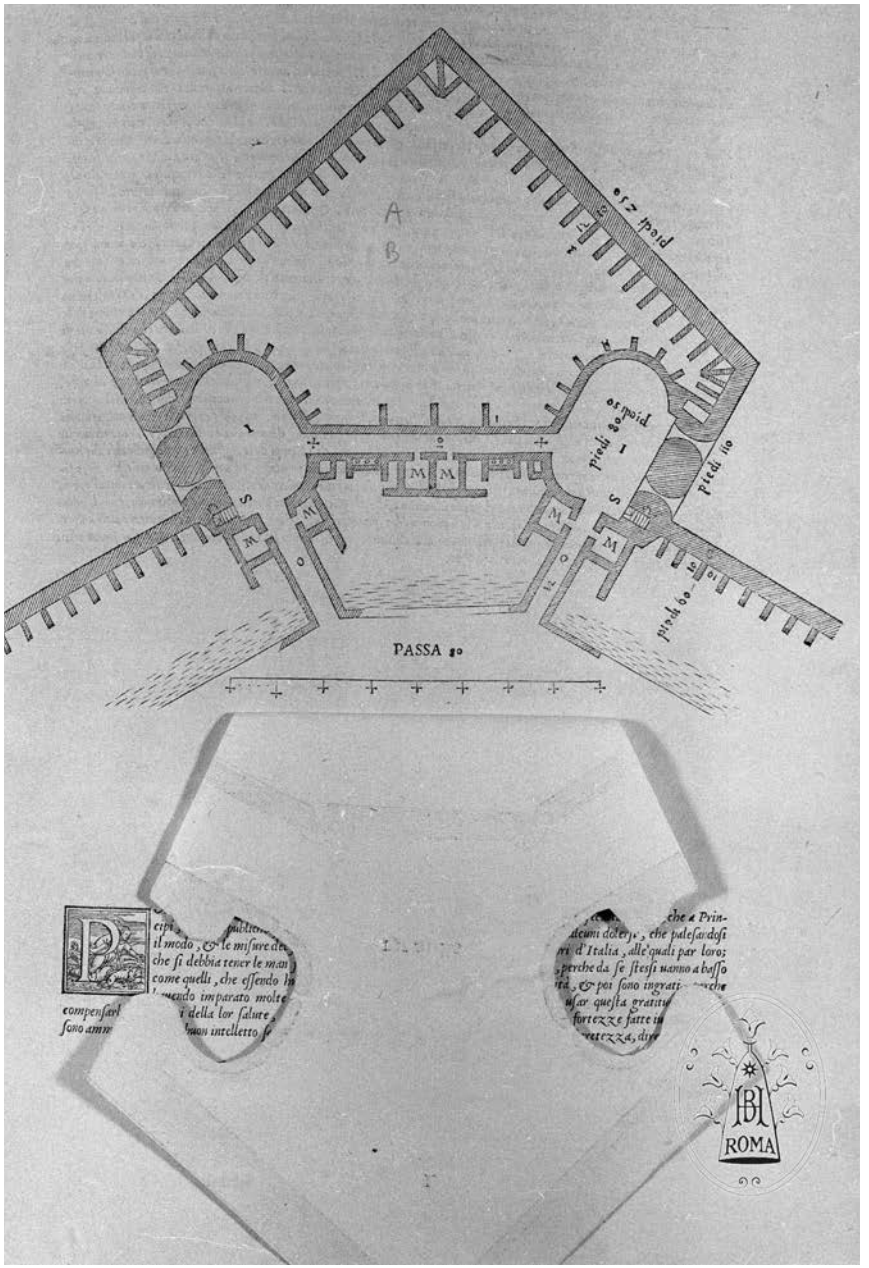
Let us bear in mind, in order to better historically frame the described developments, that it was during the earliest invention and subsequent success of the technical or polytechnic schools in the 18th century that physics and statics began to be taught. Even in the late Renaissance the ancient science of mechanics was occasionally identified with engineering, which was then called 'scientia de ingeniis'. Therefore, the technical term *engineering* existed and the corresponding profession also. For example, 'inzinierius' is a very ancient word that had already come into use in cathedral workshops.[10] But of course, needless to say, there had at this time never been a lecture course on engineering at *any* university in Europe.

The sixteenth century, however, prepared the necessary foundations to elevate engineering as an autonomous discipline, separated from its neighbours. In this context we might also better understand now why Vitruvius' encyclopaedic treatise *De architectura*, with its long astronomical, as well as meteorological and musical harmonic digressions, could be presented by Daniele Barbaro in his first Italian edition (Fig. 8). This earliest publication in 1556 was a treatise in the natural sciences that would be catalogued by librarians and collectors as mathematical, as we are once again able to verify in the ancient library catalogues. Such is clearly the case for the library of the scholar Vincenzo

8 Johan Ludvig Heiberg: Beiträge zur Geschichte Georg Valla's und seiner Bibliothek. Beihefte zum Centralblatt für Bibliothekswesen 16. Leipzig 1896, p. 70: "adhuc interpretamur ad octauumque iam librum pervenimus". Valla's monographic courses went through Vitruvius's work only including the Octavus liber, as demonstrated by Heiberg.

9 Claude Victor Palisca: Aristoxenos redeemed in the Italian Renaissance. In: Claude Victor Palisca (ed.): Studies in the history of Italian music and music theory Oxford 1994, pp. 189–199, p. 195. Cleonides at the end of the 16th century is often confused, respectively identified with Euclid: the famous Paduan philosopher Francesco Patrizi is one such case.

10 Giuseppe Albenga: Le vicende del nome ingegnere. In: L'ingegnere II-9, (1928), pp. 548-560.



● Fig. 8: Multiple ground plans of a bulwark. Source: Daniele Barbaro: Vitruvius, Italian edition, Venice 1556, p. 38

Pinelli in Padua (sold to the Milanese cardinal Federico Borromeo in 1604), incomparable in size to any other private Renaissance library, as we are led to understand from its historical catalogues where mathematical books published by Marcella Grendler are classified.[11] Moleto's entire library in turn had in fact been inherited at the bequest of Pinelli, in 1588; unfortunately both collections were therefore lost to Padua, when the latter died in 1604 and they were sold in Milan.[12] Vitruvius' *De architectura* – in conclusion – *was* indeed the mathematical treatise the early modern scholars thought of, much more than an architectural one. Even in the still extant Renaissance libraries which we are able to use in Italy, Vitruvius bears a shelf mark from the mathematical 'class' – for example in the Marciana Library in Venice, where it bears the "IV" shelf mark, given to all mathematical writings.

Even something secondary in the second, expanded Vitruvius edition of 1567, i.e. its preface or *Prologo*, which was written by Francesco De Franceschi Senese, a self-confident publisher, may resonate to us with an intense vibration: "Et in somma chi non ha le mathematiche, non ha la Theorica" (and finally: he who does not possess mathematics, does not possess theory);[13] furthermore, on the same page: "La Filosofia ci esplica la scienza delle cose naturali, che da Greci è detta physiologia, la quale è necessario che lo Architetto con studio maggiore habbia conosciuto". Thus, mathematics was considered as one among the natural sciences.[14]

As Laird points out, Moleto essentially "tried to extend mechanics into topics until then treated within the tradition of natural philosophy", i.e. the realm of the natural sciences, and we can value his judgement as a conclusion: here Moleto's effort to bring major innovation to the scientific paradigms of his epoch is, in my opinion, clearly evident.[15] The development of mechanics was therefore undergoing a process of emancipation since that moment.

In 1560 Francesco Barozzi, one of the Paduan lectors for mathematics, argued that with regards to the status of all the sciences referring to the concept of 'medietas', (the intermediate state, which he also labelled, with the modern, Italian term, 'raccomunanza' or 'communance'), were of one natural discipline with the others. Each of the disciplines have to be seen as unified by proportional calculation: in addition, 'cosmographia', or astronomy, would be based on the reciprocal, proportional calculation of sidereal distances. The heavenly bodies' distances determine their movement in an exact, mathematical way; and mechanics, strictly speaking, is to be seen as a cosmography in the microscopic and earthly world. The power ratios, principles of weights and levers determine the functioning of mechanisms. Barozzi dedicated his translations of Proclus's mathematical treatises to none other than Daniele Barbaro (Fig. 9). His highly Platonic and late Platonic vision was partially alternative to the orthodox Aristotelian one, proving a strong pluralism among scientific circles amongst Padua at this time. But I would rather prefer not to stress the traditional opposition between these two philosophical schools in Italian academic circles. In fact, 'Logica' and 'Mathematica' were two closely related doctrines in Aristotle's mind and this fundamental link does not need to be considered as opposite to Platonic principles: on the contrary, the concept of the two disciplines might be seen as a wide-spread foundational comprehension of Greek wisdom, no matter whether one philosophical school is sometimes more, sometimes less predominant than the other. As Gabriel puts it,[16] "pour Aristote, la

11 See Marcella Grendler: A Greek Collection in Padua: The Library of Gian Vincenzo Pinelli (1535–1601). In: Renaissance Quarterly 33 (1980), 3, pp. 386–416.

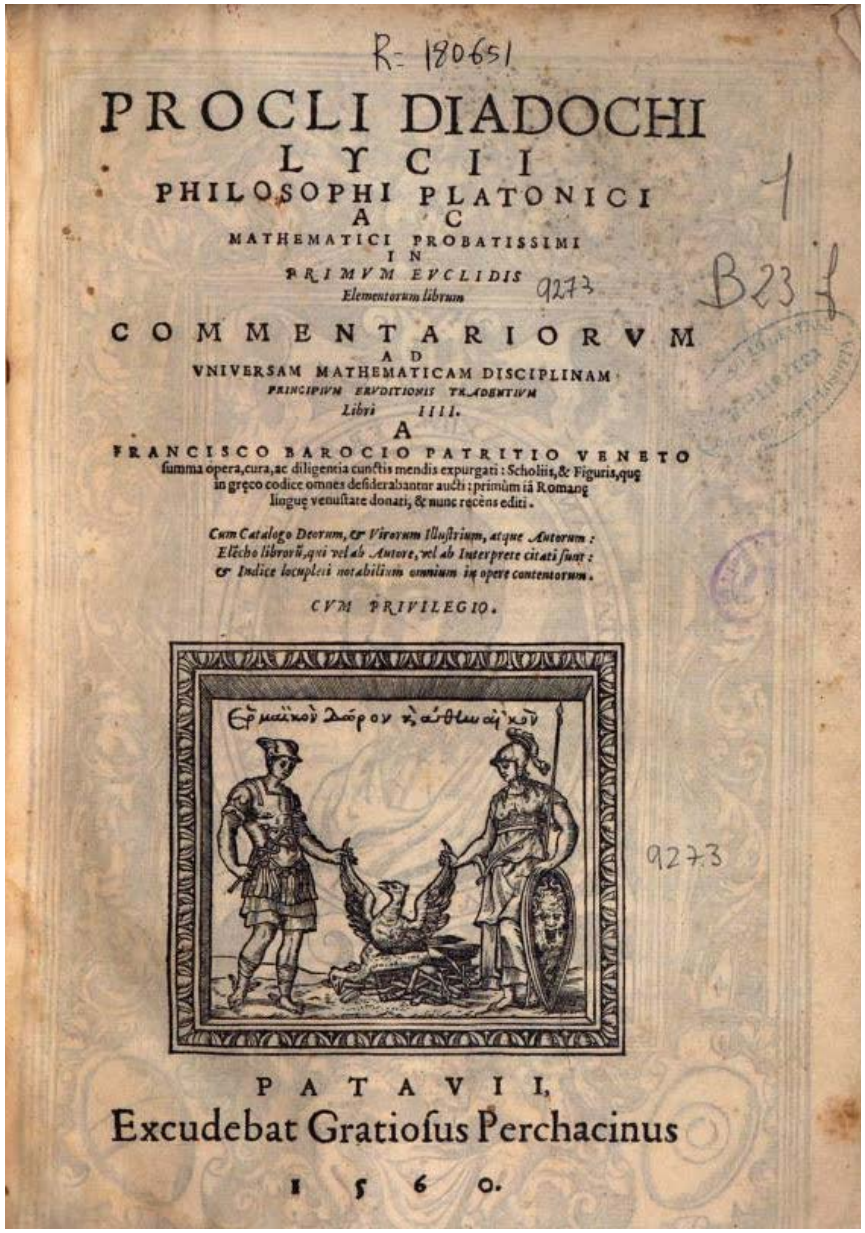
12 Adriano Carugo: L'insegnamento delle matematiche all'Università di Padova prima e dopo Galileo. In: Storia della cultura veneta, vol. IV, 2. (1980), pp. 151–183, p. 151. But this information had already been retrieved by Antonio Favaro: Amici e corrispondenti di Galilei, XL, G. M. In: Atti del R. Ist. veneto di scienze, lettere ed arti LXXVII (1917–1918) pp. 48–118.

13 Barbaro 1567, *Prologo* by F. De Franceschi Senese, non numbered page, corresponding to [ch. 4 r].

14 "Philosophy explains the science of all natural elements, which the Greeks called 'physiologia', and it is necessary that architects assimilate it with an even deeper study [than other disciplines]."

15 Laird 2000 (note 4), p. 4.

16 Augustin Gabriel, Frère (S.G.): Matière intelligible et mathématique. In: Laval théologique et philosophique 17, (1961) 2, pp. 173–196; 18 (1962) 2, pp. 177–210, p. 173.



● Fig. 9: Barozzi, Procli Diadochi Lycii: ... In primum Euclidis elementorum librum …, Padova 1560, frontispiece. Source: https://books.google.de/books?id=2XoNAyILCNcC&hl=de&pg=PP5#v=onepage&q&f=false (April 10, 2020)

mathématique fournit le type achevé de la démonstration; aussi conçoit-il cette dernière avant tout sous son aspect mathématique, et c'est à cette science qu'il applique, en premier lieu, le nom de mathésis, qui veut dire discipline". Many Platonists would have agreed with such statements.

However, maybe it was therefore just obvious that, after Moleto had held the local professorship for mathematics, where he had Galilei as his pupil, the Tuscan scientist would eventually become his successor and the author of the most important treatise on mechanics and physics of this time.

Finally, Barbaro in his translation of Vitruvius, also comes back to contemporary mechanics in the specific sector of the treatise in which he deals with engineering in the 10th Book. Here, in Barbaro's commentary, architecture, this time in its Vitruvian sub-declination of 'mechanics' – or 'machinatio' –, is presented as intermediate. It is "located and subalternate, under two sciences: the natural science, by receiving from the latter its object; and mathematics, because it receives from mathematics its subtle arguments and demonstrations".[17]

The Backlash of the Described Transformations of Architectural Practice

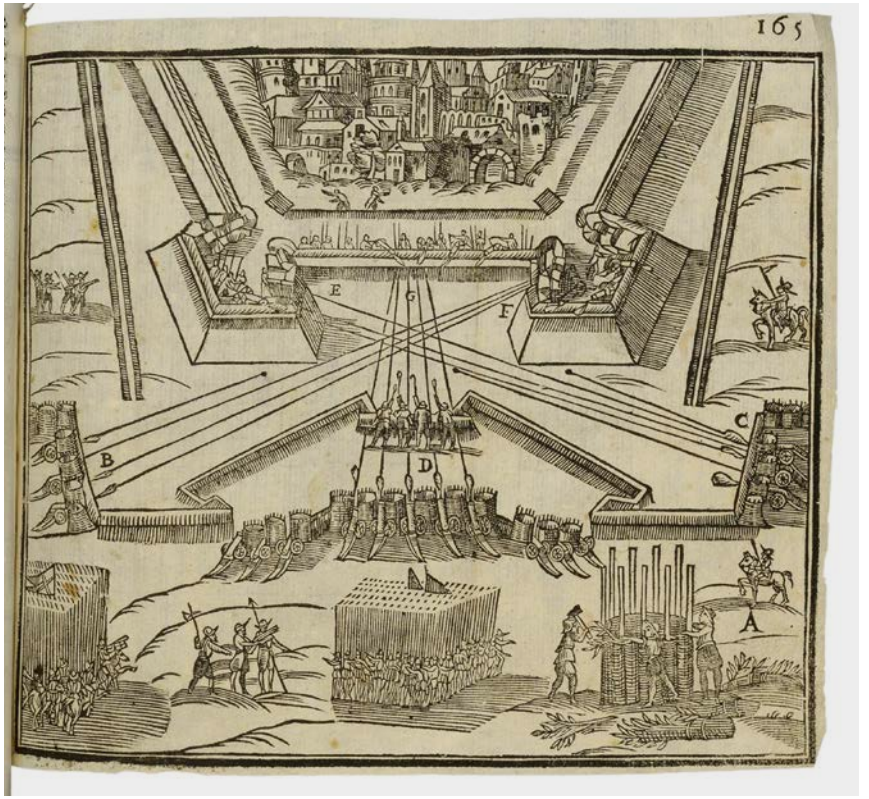
In the manuscript catalogue of the aforementioned library owned by Vincenzo Pinelli in Padua (famously described by Marcella Grendler in 1980 as the largest scientific library in northern Italy), architectural works are squeezed into a single shelf together with the *Discorsi di Gioseffo Moleto mathem.*[atico?] the theoretical mathematical treatise quoted above (with slightly different title). And although Pinelli was more of a mathematician than anything else, several writings about architecture are recorded

17 Daniele Barbaro: I dieci libri dell'architettura di M. Vitruvio tradotti & commentati da Mons. Daniello Barbaro eletto patriarca d'Aquileia, da lui riveduti & ampliati; & hora in più commoda forma ridotti, in Venetia, Appresso Francesco de' Franceschi Senese, & Giovanni Chrieger Alemano Compagni, 1567, p. 440: "posta, et alternata sotto due scienze, […] la scienza naturale, ricevendo da quella il suo soggetto […] et […] la matematica, perche le sottili ragioni, et dimostrationi da quella riceve."

there, though evidently with a special emphasis on the science of engineering: the *Architecti Pallad.[ii], folio volgari, Ven.a; Anton.[io] Rusconi de Architettura folio volgari, Ven.a*; and the "Manual Practice of Shooting", *Prattica manual de artegliaria, f.º Ven.a* by Luis Collado (Milan 1586), belong together (Fig. 10). Further on, we find Julius Frontinus's *Stratagemata*, another theoretical military work. From this list, beside Palladio only Rusconi was in fact better known in Venice as an engineer than an architect. Collado was a practitioner with an international reputation who was also the responsible advisor for the fortification of Taranto and of Milan. And yet his name did not make its way, for example, into the reliable and thorough *Geschichte der Architekturtheorie* by Hanno-Walter Kruft. This fact clearly demonstrates that our contemporary coordinates of what is defined as "architectural theory" do not match the coordinates of the Italian Cinquecento, even though modern theory so closely relies on the theoreticians of this intellectually dense period.

What was happening, that was relevant for the history of architecture, around the middle of that century? In the course of reforms to the local (Paduan, but also European) branch of Aristotelianism, architecture, which was clearly traditionally defined via Vitruvius as an 'episteme' or knowledge and not a science (such is the term used in its theoretical sources), ended up being classified among the intermediate sciences, the 'scientiae mediae'. No other visual art beside architecture was going to receive this honour again. Barbaro's "betrayal" of a state secret, on the other hand, demonstrates on a pragmatic level the high social relevance of this art for the survival of entire states and how useful architectural theory was increasingly becoming for the new era. Barbaro's embarrassment about the sensibility of his military-architectural excursus is evident in the fact that the two plates published by him in 1556 at p. 42 and 44 disappeared from the expanded, corrected edition of 1567.

In fact, of course, the debate was not only about finding a definition, or a technical term for mechanics/architecture/engineering and there was much more at stake: it had a major backlash on the statute of the related disciplines and its understanding in the



● Fig. 10: Luis Collado: Prattica manuale dell'artiglieria, Milan 1586, p. 165, "del duodecimo modo di tirare per effetto di difendere una fortezza". Source: https://books.google.it/books?id=5Z3X5b-3kELIC&hl=de&pg=PP5#v=onepage&q&f=false (April 10, 2020)

scholarly world and at the same time on the practical engagement and rooting of this discipline in society. This was also the view of governments. It is therefore worthwhile reconsidering, as I have attempted here, the phenomenon of wavering fluctuations in the status of disciplines, and in particular of architecture, which, despite its visibility, has too often been neglected by architectural historians.

Before the 16th century, in fact, architecture as a discipline does not ever seem to have seized the pivotal function it reached with such governments as, for example, in the Venetian Republic. Here members of the Council of the Invited (Consiglio dei Pregadi, the Venetian Senate, consisting of 120 members), were mostly active

in a debate about the function and ethical relevance of engineering and the task of public, or governmental, building. Several relatives of Barbaro's, for example, were members. A large deal of the theoretical works from this "century of architectural theory"[18] concerned the interrelation of geodesy, mechanics and further natural sciences in the service of the most efficient rule of the territory, from Cyprus to Bergamo: for canalizations, deviations of entire river basins, drainages, the amelioration of harbours, road construction, city walls and fortresses. In an analysis of the role of "truth" in architecture, according to Barbaro, "virtue [or goodness] consists of the implementation of truth" ("La virtú consiste nell'applicazione [di *veritas*]"), whether logical or rational truth, whose principles have "the capability of bringing their light into matter" ("d'influire il lume loro nelle cose").[19]

18 Erik Forssman: Palladios Lehrgebäude. Uppsala 1965.

19 Either Daniele Barbaro: I dieci libri dell'architettura di M. Vitruvio tradotti & commentati da Mons. Daniello Barbaro eletto patriarca d'Aquileia, da lui riveduti & ampliati; & hora in più commoda forma ridotti, in Venetia, Appresso Francesco de' Franceschi Senese, & Giovanni Chrieger Alemano Compagni, 1567, p. 8; or Daniele Barbaro: I dieci libri dell'architettura di M. Vitruvio tradotti & commentati da Mons. Daniele Barbaro eletto patriarca d'Aquileggia, in Venetia, appresso Francesco Marcolini, 1556, p. 8.

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Was ist Architekturwissenschaft? Der Begriff lässt Unschärfen zu und kann so auf der einen Seite suggestiv und produktiv sein, auf der anderen Seite aber wirft er zahlreiche Fragen auf: Von welchen Architektur- und Wissenschaftsvorstellungen, sei es in der Geschichte oder in der Gegenwart, sprechen wir hier? Was meint Forschung unter dieser Begriffsklammer Architekturwissenschaft und mit welchem Material und welchen Methoden arbeitet sie? Welche Akteurinnen und Akteure betreiben Architekturwissenschaft und mit welchen Perspektiven? Diese Fragen waren der Gegenstand des 5. Forums Architekturwissenschaft unter dem erweiterten Titel „Vom Suffix zur Agenda“, das vom 14. bis zum 16. November 2018 an der BTU Cottbus-Senftenberg stattfand. Das Ziel der Tagung lag in der weiteren Klärung und Präzisierung des Selbstverständnisses, der Fundierungen, der Arbeitsfelder und der Potentiale von Architekturwissenschaft, gerade auch vor dem Hintergrund der vielfältigen Sichtweisen auf Architektur, für die das Netzwerk seit seiner Gründung steht.
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