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Dedicating Science and War Books Networks of Power Between Science and Politics in the Early Modern Period

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Abstract

The article explores the dedications to promoters and patrons found in military and mechanical engineering books between the last decades of the sixteenth century and the first half of the seventeenth century. These dedications are significant because they show how the authors of those books managed their strategies of self-promotion within the power of the court and weaved new relationships with promoters and patrons. Through their dedications, they attempted to guarantee both their status as authors and that of their books. Circulating as objects throughout elite political networks, these scientific books also enabled less tangible transactions of knowledge, prestige and power.

Keywords: Dedications, Early Modern, Engineering, Science, War Books

1. Introduction

In the prologue of his book *Entre poder y placer. Cultura escrita y literatura en la Edad Moderna*, Roger Chartier asserted the importance of breaking with what he viewed as the spontaneous attitude that makes us suppose that all texts were written or read in the past according to the rules and practices that characterise the contemporary relation with written culture (2000, 9).¹ Chartier stressed what he called the ‘mutations’ that determined the circulation of discourses, conditioned by their uses and possible appropriations. His work showed the need to approach the study of written culture and its discourses from the viewpoint of the processes that determine their forms of production, communication, and reception (1992, 20).

¹ This article is associated with the project E-SENS: Power and Cultural Representations: Sensory Scenarios and Circulation of Objects among the Hispanic Elites (sixteenth-seventeenth centuries) PID2020-115565GB-C22.

From this perspective, the study of dedications in books on technical and scientific topics that proliferated in European centres of power from the mid-sixteenth century is of the greatest interest. Their texts, along with the images on the title pages and frontispieces, were part of the works' textual materiality, shaping discourses conditioned by the social and political demands of the court on the relationship between power and knowledge. Specifically, the dedicatory messages showed the utility of military and mechanical engineering for the government and the progress of states (Campillo 2008; Ilari 2012). Their authors used these preliminary texts to devise their strategies of self-promotion within the power of the court and weave new relationships with promoters and patrons. This editorial sponsorship contributed to the building of exchange networks between science, technology and politics.

These dedications were thus part of a 'culture market' managed by the publishing world, in which patrons, authors and publishers played the role of agents exchanging political, social and cultural prestige (Paoli 2009, 20-33 and 2020). This was a kind of 'courtly economy', to use the expression that Amedeo Quondam employed to analyse the relations of sponsorship and patronage that developed in the early modern period in which intangible as well as tangible goods – including reputation, fame, memory, praise and esteem – changed hands (2013, 248-249). This economy was fundamental in the case of books on mechanical and military engineering, since their authors and editors could write dedications full of allusions to courtly habitus (magnificence, exemplarity, memory and liberality) and carry out an unprecedented vindication of the role that science and technology could play in the government of states. This rhetoric often legitimised the figure of the engineer as a professional devoted to the liberal arts, with which he aimed to raise his economic and social status (Zanetti 2023).

2. *Dedications in the Discourse of Progress*

2.1 *From the Common Good, the Glory of the Ruler and the Progress and Conservation of the State*

Since Gérard Genette foregrounded the significance of dedications in the late 1980s (see Genette 1987 and 1989), many important contributions have been made to their research, especially in the last few decades (Viala 1995; Chartier 1996a; Biancastella, Santoro and Tavoni 2004; Paoli 2009).² But only a few of these studies have been applied to the dedications in technical and scientific books, particularly to books on subjects related to aspects of military and mechanical engineering such as artillery, fortifications, pyrotechnics, hydraulics, the invention of measuring instruments, and mechanical devices for military and ludic use (see Falcini 1963; Biagioli 1990; Findlen 1990; Eamon 1991; Biagioli 1993 and 1995; Ferrero 2005, 217-234 and 269-284; Torrini 2005). The preliminaries of these books were particularly important because they provided a material space in which to negotiate the circulation of scientific knowledge and its political power. The comparative scarceness of studies on these introductory texts is particularly notable considering the importance of the information they provide in understanding the role they played in the development of modern science and technology as symbols of power; especially, if we consider that they are crucial for investigating the networks of sociability and scientific-technical exchange that their authors established with government structures (Bertoloni Meli 2006). In addition, these dedications provide information about how economic and scientific-intellectual interests were integrated into the social and cultural realm (Villa 2010).

² For a detailed bibliography of dedications in texts in the Italian tradition in the modern age, see the website of the research project: *I margini del libro*, <<https://www.margini.unibas.ch/web/it/index.html>>, accessed 1 December 2024.

To understand the scope and implications of these types of dedications within the patronage and sponsorship system, as well as in the creation of exchange networks between technical-scientific knowledge and power, it is important to consider that, from the late 16th century onward, books describing technological innovations contributed to an ideal of 'progress'. This ideal encompassed crucial issues for modern states, such as navigation, agricultural management, artillery, civil and military architecture, trade, the manufacturing and processing of new raw materials and the invention of devices for courtly leisure. In this way, books on military and mechanical engineering came to be in demand by princes and important members of the court. This presented an opportunity for authors, patrons, printers and publishers to engage in the system of technical-scientific patronage. It helped shape a publishing market that recognized the growing belief that the progress and reputation of the state and prince were closely tied to their mastery of technology, for both military and recreational purposes.

Military and mechanical engineers deployed their dedications to promote their own interests and appeal to the common good, public utility and the glory of the ruler. The effect was to establish a 'specialisation' in the rhetoric of the dedication genre, which went beyond the simple clichés of the usual 'rhetoric of praise'. This specialisation appeared in a large corpus of books of military and mechanical literature, including those devoted to military architecture, instructions on military strategies for the defence of the state, the invention of new mathematical instruments for the practice of war and manuals of instruction on artillery for war or fireworks for festivals. Also in this corpus were books on mechanics, which presented an illustration of the functioning of many machines and technical devices for military and ludic purposes, as well as those intended for use in such activities as navigation, agriculture and the production of manufactured goods.

This article deliberately covers a wide range of this little-known corpus to make clear the rhetorical similarities as well as the differences that their authors strategically employed. Many of these books were aimed at the libraries of the nobility and aristocracy, as both archives of knowledge and ostentatious displays of power. Through their circulation among powerful figures, they contributed to the construction of technical knowledge in the modern era (Naudé 1627; Bouza 1992, 131; Chartier 1996b, 95).³ Numerous books offered the patron new devices and mechanical instruments that would be of service in the progress and maintenance of the state, such as the instrument that the Florentine Giovanni Francesco Fiammelli offered to Cosimo I de Medici for military use 'nécessaire á i gouverni di stati, e di guerre ... massime ne tempi di guerra'⁴ in the dedication of *La riga matematica* (1605, n.p.), or the one that the French Real Engineer Jean Errard de Bar-le-Duc offered to the monarch and the French nobility in *La Fortification réduite en art et démontrée* (1600). This latter dedication explained how the book contributed to heighten the glory of the king and to promote the state and its economy. On other occasions, the dedications showed how the book strengthened the state through the dissemination of knowledge and the training of professionals in the military art, especially in artillery. This was the case with the works of Diego de Álava y Viamont (1590), Luis Collado (1592), Cristóbal Lechuga (1611) or Julio César Firrufino (1626).

Within this background, the emergence of the publishing genre of the 'theatres of machines' was vital (Vérin 1999; Dolza and Vérin 2000 and 2004; Dolza 2009; Ravier-Mazzocco 2013; Gómez 2017, 39-54). The books belonging to the 'theatres of machine' genre explained

³ Gabriel Naudé pointed out that there is no more honest and certain way to acquire fame among society than to build lovely, magnificent libraries and then commend them and consecrate them to public use.

⁴ (necessary for the government of states and wars ... especially in times of war). Unless otherwise stated, all translations are mine.

the workings of mechanical instruments and devices that were displayed before courtly audiences, providing both knowledge and pleasure. They offered a form of mechanical spectacle aimed 'a chi si diletta di questa nobilissima scienza',⁵ as Filippo Pigafetta said in the translation of *Mechanicorum liber* (quoted in Ferraro 2008, 82). This manner of intellectual leisure introduced machines into the cultural and social spaces of gardens, chambers of wonders, cabinets of curiosities, court theatres and libraries. The books attained an important socio-cultural position and took part in the debate that had arisen in the sixteenth century about the nobility of mechanics and the distinction between practical and ludic mechanics (Gómez 2017). They are of interest here principally because of the information they provide about the relationships that developed between engineers, publishers and patrons. They enabled their authors to present mechanics as a speculative activity within the liberal arts which was placed at the service of the common good and the glory of the prince, in times of both war and peace. The authors of those books, all of whom were engineers with good relations in the court, were responsible for fortifications, hydraulic structures and architecture, but also for festivals and firework displays, which were carried out by the artillery. In other words, they were instrumental both in the celebration of military prowess and in the display of power. It is therefore not surprising that most of them (Besson, Ramelli, Bachot, Bar-le-Duc and Caus) worked in the service of monarchs who were invested both in the success of their armies and in peacetime spectacle to assert their power.

The authors of theatres of machines made the most of the enjoyable or pleasurable aspects of reading their books. They emphasised these qualities in their dedications to capture the attention of patrons and promoters and to seek collaboration towards the cost of printing books that, owing to their many illustrations, were quite expensive. In their dedications, some of the authors specified that they were also the authors of the plates which enriched their books (Ravier-Mazzocco 2009, 50). When Salomon de Caus addressed Louis XIII in *Les raisons des forces mouvantes* (1615), one of the books on mechanics that was most influential in courts in the first half of the seventeenth century, he stressed the pleasurable aspect of the book: 'fi ie peux entendre que vostre Maiefté prenne quelque plaisir à ce mien petit œuure, celame donnera courage de l'augmenter de quelques autres gentils desseings' (Dedication page).⁶ Thus de Caus appealed to the king both stressing the utility of the machines and praising the aesthetic enjoyment offered by the illustrations.

The situation was similar in the case of dedications in books on pyrotechnics and fireworks, activities which were regarded by some authors as a matter of state.⁷ Treatises on fireworks reached a status of their own because the publishing market was aware of the importance of fireworks displays as exhibitions of power in a Europe at war. The frontispieces that announced books on fireworks were, in this regard, a declaration of intentions. For example, Francis Malthus' *Traite feux artificiels pour la guerre* (1632), dedicated to Cardinal Richelieu, displayed a magnificent frontispiece with the figures of Mars and Neptune accompanied by a dragon that breathed fire, flanked by two cannons. In this case, it was a scenographic presentation of the achievements that the author attributed to the power of the French monarchy and that the editor was able to reflect through the image: military success, represented by the figure of Mars, and the overseas expansion that Richelieu himself

⁵ (to those who delight in this most noble science).

⁶ (if I should hear that Your Majesty felt some pleasure from this small book of mine, it would give me strength to enlarge it with some other lovely drawings).

⁷ This was the case of Appier-Hanzelet 1630.

had promoted as part of state policy, represented by the image of Neptune. Both elements became the visual reflection of the author's verbal praise of the patron in his dedication. The figure of the god Neptune showing Mars the design of a military fortification surrounded by cannons and instruments of military engineering, such as the compass, constituted an image of the power of the French monarchy in the European context, as powerful as the dedication itself (Piñeiro and Vicente 2006). Appier-Hanzelet's *La pyrotechnie* (1630) presented a frontispiece with cannons, under the words 'Marte et Arte'. It thus displayed visually what was stated in the dedication: that the use of gunpowder and artillery for both recreational and military purposes had become a matter of state and, therefore, an element of power. And *Pyrotechnia Or a Discourse of artificiall Fire works* (1635) by John Babington, dedicated to the Earl of Newport for his 'entertainment', showed different mechanical devices used to create firework displays (Figure 1). By combining word and image these books showed that mechanical instruments and machines invented for military use could also create spectacular visual displays and so exhibit political power.



Figure 1 – Frontispiece of John Babington, *Pyrotechnia Or a discourse of artificiall Fire works for Pleasure*, London, Thomas Harper, 1635 (public domain)

2.2 The Intellectual Itinerary of the Engineer. The Nobility of Mechanics as a Strategy of Promotion

The dedications of these books created a context in which authors, publishers and printers were able to establish the standing of scientific knowledge and that of its proponents. When François Béroald published a new edition of Jacques Besson's *Theatrum instrumentorum et machinarum* (1578), he removed the dedication to Henry III that Besson had included in the first edition and inserted a new preface in which he affirmed that the idea of progress in society was linked to the use of machinery. This perspective was taken up by other authors, who used their dedications to dignify mechanics by associating it with mathematics and hence elevating it to the theoretical realm of the liberal arts. The effect was to ennoble both the person who created the machine and the person who observed it. Probably for that reason Salomon de Caus recommended in his dedication to the king in *Les raisons des forces mouvantes* that he should be versed in 'toutes sortes d'arts & sciences ... spécialement aux sciences des mathematiques, & à celles qui despendent d'icelles' (Dedication page).⁸ Only in that way would he be able to decide for himself where and when their use was necessary and put the arts and sciences at the service of his own glory and pleasure. The idea was reflected in the magnificent frontispiece to the book: a door, flanked by the figures of Archimedes and Heron of Alexandria, opens theatrically to reveal the secrets of mechanics, vindicating its new status as a form of knowledge belonging to the liberal arts and worthy of the attention of the King (Figure 2).



Figure 2 – Frontispiece of Solomon de Caus', *Les raisons des forces mouvantes*, Frankfurt, 1615, with the images of Archimenes and Hero of Alexandria (public domain, Smithsonian Libraries and Archives)

⁸ (all kinds of arts and sciences, especially in those of mathematics and everything that depends on them).

Euclid's *Geometry* also came to form part of the iconography that adorned the frontispieces of these books, especially the theatres of machines, in order to imbue them with authority. Vitruvius, who had devoted part of his *De architectura libri decem* to machines, became a prestigious point of reference, as would Aristotle for his contribution to mathematics and Archimedes for his treatises on weights, spheres and cylinders. Authors of the theatres of machines included these references to elevate their books to the implied status of their patron, complimenting their dedicatee and affirming the significance of their own knowledge. The inclusion of their images presiding over the frontispieces of the books became the perfect addition to the discourse that they were going to present to the patron in the dedication (Galuzzi 2003; Lamberini 2003; Chirone and Cambiagli 2007).



Figure 3 – Frontispiece of Ambroise Bachot, *Le Gouvernail d'Ambroise Bachot Capitaine Ingenieur du Roy ...*, Melun, Ambroise Bachot, 1598, doi: 10.3931/e-rara-61276 (public domain, Eisenbibliothek Schlatt. EM/Bt 29)

Engineers similarly used the dedications of their books to vindicate their own social and professional status (Long 2011). When the military engineer Gabriele Busca dedicated *Della architettura militare* (1601) to Juan Fernández de Velasco, Constable of Castile and governor of the State of Milan, he compared him with the kings to whom Archimedes, the greatest expert in mechanics of antiquity, had dedicated his works. Busca used the comparison to turn mechanics into one of the virtues of a ruler at the same time as the author himself made claim to be a sort of new Archimedes. This reference was not an exception: most of these authors established a link with mathematics and the principles of the new science. Diego de Álava even included the term

‘nueva ciencia’ (Title page)⁹ in his book published in 1590, dedicated to King Philip II of Spain. De Alava’s volume demonstrated the use of trigonometric instruments and such devices as the planisphere, astrolabe and military quadrant. De Álava also examined the methods of Tartaglia, aligning himself with the new science of artillery, which he considered the heir of geometry. His dedication also included praise for ‘los admirables secretos de la Aritmética y la Geometría como parte de las matemáticas, a las que alababan Pitágoras y Platón’ (26).¹⁰ In the same way, such engineers as Fiammelli, Tensini, Babington, Firrufino, Ramelli, De Caus, Appier-Hanzelet and Malthus claimed to be mathematicians and framed mathematics as fundamental to their work. They thus defended the contents of their books and promoted their social status above that of a simple mechanic to reach the reputation of a mathematician within a prestigious tradition of learning (Biagioli 1989; Vérin 1993; Pautet 2016). Some of these authors supported this kind of self-fashioning by adding self-portraits to their books. Agostino Ramelli presented himself in a courtly demeanour by showing the upper part of his body in military dress and with a compass in his hand (Figure 4). The effect was to present *Le diverse et artificiose machine* (1588) as a vindication of military engineering and therefore as a science related to liberal arts. Similarly, Gio. Antonio Rampazetto’s edition of Buonaiuto Lorini’s *Delle fortificationi* complements the narrative of self-promotion in its dedication ‘Al Seren.^{mo} Principe et alla Illvstrissima Signoria di Venetia’¹¹ with a magnificent image of the engineer in courtly habit (1597) (Figure 5).



Figure 4 – Portrait of Captain Agostino Ramelli in *Le diverse et artificiose machine*, Paris, 1588 (public domain)

⁹ (new science).

¹⁰ (the admirable secrets of arithmetic and geometry as part of mathematics, which Pythagoras and Plato praised).

¹¹ (To the Most Serene Prince and the Most Illustrious Lordship of Venice).



Figure 5 – Portrait of Buonaiuto Lorini in *Delle fortificationi*, Venezia, Gio. Antonio Rampazetto, 1597 (public domain)

Through both word and image, these preliminaries offered material spaces in which to negotiate the tangible and intangible benefits that the dedicator and dedicatee might obtain (Chartier 1996c).

3. Authors, Publishers and Printers: Strategies and Discourse

3.1 Intellectual and Military Ability in the Rhetoric of Praise

Authors, publishers and printers of books on war and mechanical engineering took advantage of the possibilities of the conventions offered by the dedication to demonstrate their strategies and intentions to their patron or sponsor. They made use of a textual formula that was already perfectly codified in the late sixteenth century, as shown by the book *Della dedicatione de' libri* by Giovanni Fratta, published in Venice in 1590. This practice continued to be developed during the seventeenth century and entered a process of codification that led to the publication of a kind of handbook that gave examples of dedications for the use of secretaries (Brugnolo and Benedetti 2004; Santoro 2004; Terzoli 2002; Paoli 2009; De Blasi and Pedullà 2010; Villa 2010).

In this setting, Sebastián Fernández de Medrano, military engineer and head of Brussels Military Academy, referred to the practice of dedicating books on military engineering to the Count of Monterrey in *El perfecto artificial, bombardero y artillero*:

Una de tres razones, Ex^{mo} Señor, juzgo que son las que comunmente conbidan à los Efcritores à dedicar fus obras à los grandes Principes y Heroës, fiendo la una, la de buscar el que puedan con fu soberana proteccion peregrinar por todas partes libres de la Cenzura, à que toda Obra publica està fugeta; y otra la de que fiendo personas verfadas en la Facultad que contiene la Obra, merezca de fu gran conocimiento, una pia correccion: y ultimamente por arrastrarles à ello una natural inclinacion: y como todas tres hallafe yo me aliftian para con V.E. ocurro à fu Grandeza respecto no poder elejir otro fagrado mayor que la de la efclarecida y antiquiffima Cafà de V.E. en que tantos Claficos Coroniftas han empleado fus fubtiles plumas ... (1699, 3r-v)¹²

Here de Medrano summarises the main reasons why engineers had been writing dedications for over a century. Their aim was to guarantee the circulation of their book, their knowledge and their own prestige by putting it under the intellectual authority of a patron who was not only endorsed by his ‘efclarecida y antiquiffima Cafà’ and by his lineage, but also by being ‘[entendido en la] Facultad que contiene la Obra’.

This appeal to the intellectual ability of the patron was indeed widely used by authors and became part of their rhetoric of praise. For instance, Antonio Lupicini extolled Francesco I de’ Medici in the dedication of his *Architettura militare* (1582) because he thought Francesco was an ‘esperto’¹³ in mathematics and the liberal arts. In the same way, when Gabriele Busca dedicated *Della Architettura militare* (1601) to Juan Fernández de Velasco, Constable of Castile and Governor of the State of Milan, he described the intellectual and cultural profile of his patron, whom he represented as an erudite who spoke several languages, understood the theory and practice of military architecture and possessed a library full of books on philosophy and all the sciences and liberal arts (Vázquez Manassero 2019). Indeed, de Velasco’s library aroused the admiration of all who visited him (Cieri Via 2004). Busca praises his patron because of his ability to gather knowledge in his library, and stressed the value of books in shaping memory:

che con grandiffima cura, & diligenza, non hauendo rifguardo à fpesa ne à fatica, hà da tutte le parti dell’Europa, & d’altre Prouincie ridotti infieme; che empie di merauiglia chiunque la vedde, & confidera Potrei dire della fua Real Descendenza valore virtù, & generofità di tanti Heroi fuoi Progenitori, & di tutta la Illuftrifs. Cafà Velasca in ambedue le arti della pace, & della guerra, incominciando dalle antichiffime memorie in tutti tempi per magnanime imprefe. (1601, a2v)¹⁴

The engineer Luis Collado would also allude to this in his dedication to Philip III in his *Platica manual de artilleria* (1592). In it, he presented to the monarch the ‘secretos’¹⁵ of the matter that he had been able to study as an engineer in the service of the king in the Duchy of Milan and emphasised the role that the king played as an illustrious patron because of the Spanish books

¹² (Of three reasons, Your Excellency, for which I judge that they often invite writers to dedicate their books to great princes and heroes, one is that they seek the sovereign protection of that person in order to travel everywhere free of the censure to which all public works are subjected; and another is that because they are people versed in the faculty the book contains, deserve a pious correction with their great knowledge; and lastly to bring a natural inclination to them. And as I find all three assist me for Your Excellency I recur to your greatness; I could not choose higher sacred respect than the enlightened and ancient home of Your Excellency in which so many classic chroniclers have used their subtle pens ...).

¹³ (expert).

¹⁴ (which, with the greatest care and diligence, and without regard for expense or effort, has brought together people from all parts of Europe and other provinces; which fills anyone who sees it and considers it with wonder, I could say of its Royal Descendency, valour, virtue and generosity of so many Heroes, its Progenitors and of all the Illustrious House of Velasca in both the arts of peace and war, beginning with the most ancient memories of all times for their magnanimous undertakings).

¹⁵ (secrets).

that filled his libraries. Collado's dedication contrasts the pen and the sword, and attributes the scarcity of Spanish books to the greater attention that the King of Spain had paid to war over learning. The authors of these dedications attribute to their patron the role of 'inspirador primordial ... del libro que se le presenta',¹⁶ so that the king became 'en poeta o en sabio'¹⁷ and his library the mirror of his power (Chartier 1996c, 210). In this way, the dedication brought prestige to the patron, apart from his political or military merits, through the possession and conservation of the book in a library. The dedications helped to determine the way in which both the book and its patron would be valued and perceived. It should be recalled that the meaning of these books changed over time because of their relationship to specific readers. The moment when these books entered the libraries of these politically powerful individuals would make a 'mark of significance' for the history of the book itself.

The rhetoric of praise, characteristic of these dedications, was focused on exalting the military capability of the patron. The authors usually appealed to the patrons' experience of war and their tactical control of the military aspects of the state, which was normally linked to the prestige of the dynasty or house to which the patron belonged. The Florentine engineer Giovanni Francesco Fiammelli, for example, in his dedication to Alessandro de' Medici in *Il principe cristiano guerriero* (1602), stressed the military ability of the pope, whom he described as an example of a Christian prince, at the same time extolling the power of the Medici through their ability to hold positions of princes, prelates and governors. Fiammelli presented his book to the Medici in an attempt to promote himself in the pontifical court. Indeed, publishing books on military architecture was a strategy that occasioned large networks of contacts (Gómez 2019a). With this objective, Fiammelli published *La riga matematica* where, in the dedication to Cosimo II de' Medici he exalted the military origins of the house and stressed the military power of the duke to whom he attributed the successful organisation of the fortifications that defended the state's borders. Fiammelli thus made the patron the owner of what he offered him: an instrument for drawing city plans, measuring river depths and planning the army on the battlefield. However, the book probably mattered more to Fiammelli than the instrument it described. The book formed part of a strategy of self-promotion with which he tried, in the dedication to the duke, to make the reader a witness of the relationship that might exist between an engineer and his patron and draw the maximum benefit from the value of the connection (Jouhaud and Merlin 1993).

The inclusion of the Medici coat of arms in *La riga matematica* suggests that the strategy of affirming the patron's military prowess had become quite usual among authors and printers. This rhetorical device acquired great significance in seventeenth-century Italy, for it was bestowed on different types of patrons, whatever their social status (nobles, popes, kings, military officers). Accordingly, together with his dedication, Cristóbal Lechuga, sergeant major and artillery lieutenant in the states of Flanders, included a xylograph representing the royal coat of arms of Philip III in his *Discurso del Capitan Cristoual Lechuga*. The xylograph occupied the centre of a large decorative display, including allegories of evil and justice flanking the coat of arms. The objective was mainly that of glorifying the patron, but also that of covering the costs of printing the book by asking for the economic support of the person being honoured (see Paoli 2014). In order to strengthen this appeal for support, these emblems gradually became more decorative. This is the case of the interesting, coloured coat of arms of the Farnese that Antonio Blado, the printer of Cesare d'Evoli's work, included in *Dell'ordinanze e battaglie* (1583), dedicated to Alessandro Farnese (Figure 6). The emblem of the patron sometimes even appeared

¹⁶ (primordial inspirer ... of the book being presented to him).

¹⁷ (a poet or a wise man).

in the frontispiece of the book, as in Francesco Tensini's *La Fortificatione* (1624). The book's frontispiece includes, on a small scale, the emblem of dedicatee Duke Francesco Contarini, as part of a magnificent display of allegorical figures that referred to geometry and mathematics, together with a disordered set of instruments used in artillery and military mechanical engineering. The book acquired, by virtue of these cover images, a figurative dimension that, as a complement to the dedication, gave it a value similar to that of any work of art dedicated to a patron or sponsor. In sum, these books inserted themselves within the broader material culture associated with the propaganda of the patron or promoter.



Figure 6 – Coloured coat of arms of the Farnese in the frontispiece of Cesare d'Evoli's book *Dell'ordinanze e battaglie...*, Rome, 1583 (public domain, Biblioteca Nazionale di Napoli Vittorio Emanuele III).

3.2 Between Servitude, Gratitude and Clientelism

Military and mechanical engineers employed much of the rhetoric and textual formulae governing the relationships between patrons and clients in a court, while adapting them to their own interests. For example, they generally demonstrated an attitude of servitude towards the state and the person to whom they offered their books, which had become quite usual in dedications at that time. This trope became so widespread that it earned the criticism of some writers who regarded it as degrading for a man of letters (Bianco 2008). For example, Francesco Tensini literally stated that he was the 'vassallo' and 'seruitore'¹⁸ (1624, Dedication page) of the Venetian senate and the Contarini in the dedication of *La Fortificatione*; Luis Collado was

¹⁸ (vassal) and (servant)

the 'Humilissimo criado, y vassallo'¹⁹ (1592, Dedication page) of King Philip III in his *Plática manual de artillería*, and G.B. Fiammelli was the 'Vmilissimo Seruo'²⁰ (1604, 2v) of the same king in *Il principe difeso* (1604), while he offered another of his books, *Il principe cristiano guerriero*, to the Medici 'in segno di servitù'²¹ (1602, Dedication page).

These declarations of loyalty were generally addressed to one person, although sometimes, as in the case of the engineer Giovanni Battista Isacchi's *Inventioni* (1579), they were extended to many members of the most important Italian families (Alessandro Farnese, Alfonso d'Este, Ranuccio Farnese, Claudio Gonzaga and Felice Paccioto, among others). Isacchi offered to each of them one of his 'secreti'²² connected with military and mechanical engineering, probably to increase the success of his book and promote himself among different patrons. It was also usual for authors to dedicate their books as a sign of gratitude. Fratta had criticised this practice in his book (1590, 21r), but nevertheless, it became quite common.

The formula would often include allusions to the collaboration between the author of the book and the person to whom the book was dedicated, or to the benefits that the author aimed to obtain with the dedication, or in gratitude for those he had obtained. Tensini said that he dedicated *La Fortificatione* to the Venetian senate out of gratitude for having knighted him. Cristóbal Lechuga addressed his discourse to Philip III for having been given the post of field marshal. Diego de Prado, artilleryman and cartographer in the service of the Spanish monarchy thanked Juan de Acuña, member of the royal council and artillery general captain, for providing the protection which allowed him to develop his career and achieve the success of his books: Acuña had helped the initial manuscript of *La obra manual y plática de la artillería* (1591)²³ to reach a more technical and interesting level and thus present it in 1603 before the Council of State under the name of *Encyclopaedia de Fundición de artillería y su plática manual*.²⁴ It seems that by then Acuña had become a patron of artillery books, as can be deduced by Lázaro de la Ysla's dedication to him in 1595 in the first treatise on artillery published in Spain. Similarly, the engineer Agostino Ramelli, the author of the most famous treatise on machines (1588), declared in his dedication to Henry III of France that he offered the book to him as a sign of gratitude for freeing him from prison when he was sick while he was working in his service in La Rochelle. Gabriello Busca thanked Juan Fernández de Velasco for his favours and kindness (1601) during his years of service as an engineer in the Duchy of Milan. These dedications demonstrated the existence of a clientelism relationship between the authors and the people to whom they offered their books. One of the clearest examples is the dedication that García de Céspedes, head cosmographer of Philip III, addressed to Archduke Albert, Count of Flanders, and Duke of Brabant in his *Libros de instrumentos nuevos de geometría* (1606). The author asked nothing of the king, but in his dedication defined a relationship between himself and his patron in which he was fully integrated into the cultural, intellectual and power clientele networks of the court. Céspedes alluded to the books he had written in Castilian and to a book on navigation which was in the process of being printed for the king (1606). The effect was to suggest that he was already integrated into these networks.

¹⁹ (most humble servant and vassal).

²⁰ (servant).

²¹ (as a sign of servitude).

²² (secrets).

²³ BNE, Mss/9024.

²⁴ Despite this, it seems that the manuscript never reached the printers. It can be consulted at the Cambridge University Library, Mss. 2883.

In this way, the dedications became a social space in which to continue to write these books. Along with the context in which the book was produced and transmitted – who owned it, where it ended up – the dedications determined the possible uses and appropriations of the book. For this reason, the theatres of machines were usually dedicated to a monarch whom the author claimed to have inspired the book, thus converting the work into a mirror of the patron's power, which was deemed worthy of public admiration. Thus, the dedications provided a platform for those with technical knowledge, typical of military and mechanical literature, to engage with power. They exalted the military ability of the monarchs, as well as their knowledge of the liberal and mechanical arts. For this reason, books on machines were often dedicated to a monarch who, according to the author, had inspired it. They exalted the military skill of the monarchs and their knowledge of the liberal and mechanical arts. Similarly, authors praised nobles and military officers for their contributions to the greatness of the state. In all cases, the dedication remained faithful to the same linguistic register, based on appealing to the appreciation, reputation, fame and praise of the patron, true to the values of a courtier society in which liberality, magnificence and exemplarity took precedence.

3.3 *From Protection to Sponsorship*

In the context of the exchange of favours, authors of books on military and mechanical engineering made use of their dedications to obtain protection and sponsorship for future books, although most often they purported to have no personal interest (Jouhaud and Merlin 1993). The Florentine engineer Lupicini, for instance, included in the dedication addressed to Francesco I in his treatise on military architecture a request for his support in order to 'seguire l'altre mie opere cominciate attenenti a simili materie'²⁵ (1582, 5), while in *La Fortificatione*, Tensini informed the Most Serene Prince and Excellent Senate of Venice that he had some other 'vtilissime inuentioni'²⁶ (1624, Dedication page) that he had held back for another occasion. Even more interesting is the case of the dedication to the Duke of Lerma that the printer Horacio Cardon introduced in the Castilian translation of Jacques Besson's *Theatrum instrumentorum et machinarum*²⁷, the so-called 'Teatro Español' (Besson 1602, Dedication page).²⁸ Cardon said that his only purpose was 'seruir al publico, y en particular à V. Excellencia, de quien siempre quedare muy humilde y verdadero Seruidor'²⁹ (1602, Dedication page). However, the dedication added a request to establish a *commercial* relation with the duke, which would make him the 'protector de todas las [obras] que salieren de mi impresion' (1602, Dedication page).³⁰

Cardon's dedication followed nearly all the clichés of the genre. One of them was that the author hoped for protection against criticism and envy (Matt 2005). This was especially relevant when the book described new instruments or mechanical engineering inventions. In those cases, there was a significant economic interest because the authors usually claimed the profits that their invention might earn. They therefore attempted to protect their works and

²⁵ (continue my other works that I have begun on a similar theme).

²⁶ (very useful inventions).

²⁷ The original Latin version by Besson was published in 1578. Besson's book was widely influential and enjoyed several reprints and translations. Here the reference is the 1602 Spanish translation, which was 'compuesta' by Diego Besson and introduced by a Dedication by the printer Horatio Cardon.

²⁸ (Spanish Theatre).

²⁹ (to serve the public and particularly Your Excellence, of whom he would always be his very humble and true servant).

³⁰ (protector of all the [books] that come off my press).

their status as inventors and asked for protection against ‘la dent venimeuse des envieux’³¹ or ‘l’envie des indiscrets et des médisants’³² (see Dolza and Vérin 2004, 7). These expressions showed the importance that technical culture had acquired at that time from the economic point of view and the extent to which that culture had begun to form part of the history of the book (Long 1991 and 2001). Isacchi’s *Inventioni* was published under the privilege granted by the Duke of Savoy and Prince of Piedmont, which was meant to stop anyone making use of Isacchi’s inventions. The author included his portrait in the first pages of the book, following the formula of courtly representation in the figure of the upper half of his body, preceding the list of people to whom he dedicated the book (Zappella 1988). Together, the portrait and the request for privilege show an author seeking personal recognition.

4. *Relationship Formulae and Exchange Networks: Printers, Authors and Publishers, Between Clients and Patrons*

In *La main de l’auteur et l’esprit de l’imprimeur. XVIe-XVIIIe siècle*, Roger Chartier stresses the importance of books’ preliminaries to understand the relationships between the power of the prince, the demands of patronage, the laws of the market and author-reader relations (2015, 14). Chartier does not mention dedications explicitly but, like other preliminaries, dedications mediate between different participants in a relationship expressed in print. It was in this context that books on mechanics or the art of war found their publishing fortune. Their contents formed part of the political, social and economic progress of the state, and the glory of the prince or patron. Meanwhile their authors aimed at their own promotion and that of their works. Dedications became an essential part of a political and intellectual model to which they gave rise and shape. They created hierarchies and models of relationships that did not exist before, with important consequences in the construction of cultural and political exchange networks that were generated according to shifting interests and priorities. The history of those books not only concurs to the development of a history of the circulation of scientific knowledge, but also resulted in the creation of a political power and prestige whose consequences outlasted the lifetimes of their authors; an aspect which has so far received little attention. Existing studies are usually limited to cases associated with a particularly important author. In this regard, the well-studied and known case of Galileo’s *Sidereus Nuncius* (1610) is emblematic. Historiography has converted it into an example of the extent to which the dedication of a book, a scientific one in this case, can become a key piece in the exchange of tangible and intangible interests of the governor and the man of science. The publication of *Sidereus Nuncius* transformed the political and intellectual relationships of the scientist and the patron to whom he dedicated the book and the scientific discovery it contained. Along with the physical book, Galileo dedicated to Cosimo II de’ Medici the famous invention of the telescope. He named the newly discovered four stars (actually moons) that orbited Jupiter the ‘Medicean stars’, in honour of the House of Medici. Galileo, at that time professor of mathematics at the University of Padua, used the dedication to ask Cosimo II for support with the aim of entering the service of the Medici and increasing his salary. The strategy was successful: only five months later, Galileo was named by the duke the Philosopher and Chief Mathematician of the Grand duchy of Tuscany and awarded a salary as professor of mathematics at the University of Pisa. In exchange, Cosimo II made *Sidereus Nuncius* and the innovative telescope an instrument with which to increase his authority and inter-

³¹ (the poisonous teeth of the envious).

³² (the envy of indiscreet individuals and slanderers).

national political prestige. He used his diplomatic networks to demonstrate how the patronage of science and techniques could play a vital role in the process of competition for political pre-eminence (Biagioli 1990 and 1993; Bucciattini, Camerota and Giudice 2012). Galileo's dedication of *Sidereus Nuncius* would increase even more the impact of a book that from the start received great international interest and was often given as a present among the most prestigious personalities in European courts, since it was an object that went beyond the discipline of astronomy to involve the wider territory of politics (Giudice 2023). The book, which revolutionised the relationship between humankind and nature, would also inspire a fruitful debate disseminated through the Venetian publishing industry. By publishing texts that made known contemporaneous scientific novelties, publishers helped create a cultured and knowledgeable public. Indeed, the publishing industry would take advantage of this situation to capitalise on Galileo's scientific success in the context of the rivalry between Florence and Venice (Hall 2013).

4.1 *Publishers and Printers as Mediators in Contact Networks*

Publishers and printers of books on war and mechanical engineering mediated in the creation of networks between men of science and political powers. The dedications surrounding the edition of Jacques Besson's *Theatrum instrumentorum et machinarum*, by the influential François Béroalde gives us an idea of their influence.

The book, which was published posthumously six years after the author's death, emerged from an earlier set of publishing negotiations. Besson had published *Cosmolabe* in 1567. It included a full series of inventions about which he intended to write a new book that would be dedicated to Charles IX of France, under the title *Livre premier des instruments mathématiques et mécaniques*. Besson wrote that book in 1569, when the king named him Master of Engineers, although it was not published for the following three years (see Besson 1572). By then Besson had published other books on scientific matters with the support of Protestant printers. One of them, the publisher Galiot du Pre, introduced Besson to François de Montmorency, a French nobleman and soldier involved in patronage, who provided Besson an entrance to the French court and paid for the publication of the second edition of the work *Art et Moyen parfait de tirer huiles et eaux* (1573) (Keller 1973; Hillard 1979; Vérin and Dolza 2001; Ravier-Mazzocco 2008). De Montmorency also presented the book on mechanical and mathematical instruments that Besson was working on to Charles IX and Catherine de' Medici and obtained the royal privilege for it to be printed.

François Béroalde came on the scene after Besson's death and, in 1578, promoted a new edition of the book, in which the politics of dedication were of great importance. Béroalde changed the title, removed the dedication to the king and changed the frontispiece. He added more detailed descriptions of the machines and instruments thanks to the collaboration of the printer Barthélemy Vincent, who made use of the engravings of the 1572 edition by the architect and designer J. Androuet du Cerceau, an active participant in the network that sponsored Besson's work (Régnier-Roux 2010). This newly formatted book was very successful and was translated into several languages (Latin, Italian, Spanish and German). The rising fortune of Besson's book was driven largely by the use of the dedication: a space in which new individuals could be addressed and new customers appealed to (Ravier-Mazzocco 2008, 6). This case shows the extent to which the translations of technical and scientific books could affect their cultural status and increase their power of intervention in new political contexts (Carreira da Silva and Brito Vieira 2019). This phenomenon acquired special relevance considering the proliferation of translations and publications of military and technical literature that took place in the early seventeenth century due to the great increase in the number of engineers.

Publishing in the language of the patron or protector was also a strategy of promotion that the authors often used and which they explicitly mentioned in their dedications. This frequently implied a modification of the original context in which the book had been created, and hence its broader meaning, once it was translated (Virol 2016). The case of the dedication that the Lyon printer Horacio Cardon introduced in 1602 in the Castilian translation of Besson's book is especially interesting. The printer used the vernacular translation to expand his influential publishing industry to reach the American readership which he mentioned in the (Spanish) dedication to the Duke of Lerma. Cardon must have thought that publishing in the language of the patron or promoter was a good strategy to win favours in the court. That the court was invested in modernising the country by disseminating scientific knowledge in the vernacular is something that Cardon must have known. It was for this reason that the book by the Protestant Besson could be finally published in the most Catholic of the European states.

In addition to printers, other figures contributed to creating networks of contact between writers and patrons through their books. An example is the Florentine grammarian Francesco Serdonati, who acted as an intermediary between the engineer Fiammelli and Cosimo II. This was also the case with Belisario Vinta, the duke's secretary, through whom Fiammelli sent several of his works. Additionally, in 1606, Fiammelli sent another of his books, *La riga matematica*, to Vincenzo Gonzaga, Duke of Mantua, in an attempt to expand his network of contacts.

4.2 *The Power of Family Networks*

The dedications in these books on war and mechanical engineering provide evidence of powerful networks that were used to guarantee the prestige of authors and publishers and their books. Writers alluded in their dedications to people who might form part of the family network of the dedicatee. Fiammelli again provides an interesting example in the dedication addressed to the Medici in *Il principe cristiano guerriero*. To make himself known in the papal court, the engineer employed the strategy of dedicating the book to Pope Paul V, within a joint dedication to Alessandro de' Medici, who had been Pope Leo XI and to whom the new pope was related. The author thus took an intermediate path in the politics of dedications by offering the book to the same person through another who played, as he himself wrote, the role of 'mediator'.

Fiammelli also resorted to appealing to the family networks of the dedicatee in *Modo di ben mettere in ordinanza gli eserciti*, which was dedicated to the cardinal Antonio Facchineto. In this case, Fiammelli appealed to Alessandro Farnese as mediator. As nephew of Paul III and brother of the Duke of Parma, Farnese was highly influential. In this way, the engineer hoped to improve his reputation as an author by placing himself under the protection of an illustrious patron. The allusion is especially interesting if we consider that Alessandro Farnese's military and intellectual prestige was also used by the printer of Cesare D'Evoli's work *Dell'ordinanze e battaglie*. This printer mentioned the relationship of the author's father with the Farnese family as a means of promoting himself. Both author and printer used other connections to assert their proximity to Farnese.

Other engineers made use of family networks to achieve their interests or to maintain a relationship of patronage or clientelism. In *Flagello Militare* (1676), Giovan Battista Martena explained to Fernando Giovanni Fajardo de Requesens y Zuñiga, Marquis of the Vélez and Viceroy of Naples, how the publication of this book had been made possible thanks to the contacts provided by the family network of the Vélez (1676). Martena took advantage of this to mention the marquis' father, from whom he had obtained a letter of recommendation to the Duke of Arcos when he was Viceroy of Sicily, which had enabled him to obtain the post of captain in the kingdom of Naples. In this case, the dedication was used to acknowledge the assistance he had already received.

A similar relationship was established between Gabriele Busca and Juan Fernández de Velasco, with whom he closely collaborated in the publication of books on fortification. In 1597 Busca acted as an intermediary in a network of technical-scientific knowledge that enabled him to obtain interesting images of military architecture requested by his patron. For some time afterwards, these formed part of the interesting collections of books and mechanical scientific and technical instruments that Velasco kept in his library, to which the engineer must have enjoyed access. To be precise, these were drawings of machines from Francesco di Giorgio's *De machina et architectura*, which was then in the Duke of Savoy's library. It was also intended that those drawings should reach the humanist Justo Lipsio, who was working on a new edition of the book *Poliorceticon* (Vázquez Manassero 2019). This example thus shows the mutually beneficial circulation of books between authors and patrons.

5. Conclusion

Authors, publishers and printers of books on military and mechanical engineering created networks of sociability, technical-scientific exchange and patronage by means of the paratexts of their books. These networks emerged in the last decades of the sixteenth century, when this type of literature contributed to an ideal of progress in the government of modern states. The role played in this context by publishers, authors and printers owing to the politics of dedication was essential. The relationships they established allowed information to circulate through books that were re-edited and translated into different languages and diverse formats. The preliminaries offered a physical space in which to mediate the dissemination of knowledge and power. At the same time, the dedication became a resource to legitimise the status of military and mechanical engineers and their books, to obtain protection patronage or to make the work, in the hands of the publishers, a best-seller in the publishing market, characterised by its capacity for reproduction and adaptation to the reading habits of different social groups. The creators of the books and their dedications attempted to determine their current and future status, owing to the importance that technical and scientific literature acquired in late sixteenth century as a way to exhibit and wield power.

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