
Renaissance and Reformation
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**Galluzzi, Paolo. The Italian Renaissance of Machines. Trans.
Jonathan Mandelbaum**

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force of the Inquisition, and how the church abandoned its persecuting attitude. Some might wish for more on theological issues, but the choice of a wider focus—on how the Inquisition and its conversion strategy were experienced—is justified. The answers to the question of why the pragmatic line prevailed are more satisfying. A critical consideration of the cosmopolitanism attributed to Rome, found in the eighteenth century in the framework of the rediscovery of Italy and Rome (think of the Grand Tour), deserves more debate.

Fosi's book is firmly rooted in classical and noteworthy historiography but looks at the new historiographical trends—revealing a strategy of the Roman Catholic Church, and its contradictions. Although it appeared in Italian in 2011, this volume, published by Brill in the series Catholic Christendom, 1300–1700, takes a much revised form, “fuller and richer than the Italian original” (12), now in English. This is highly interesting to students and scholars working on early modern Europe.

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Galluzzi, Paolo.

The Italian Renaissance of Machines. Trans. Jonathan Mandelbaum.

Cambridge, MA: Harvard University Press, 2020. Pp. xi, 276 + 107 ill. ISBN 978-0-674-98439-4 (hardcover) US\$39.95.

Based on the Bernard Berenson Lectures delivered at Villa I Tatti in 2014, Paolo Galluzzi's book explores the personalities and advances in knowledge that contributed to the transformation of the technical arts in the Renaissance. Using the historical category of artist-engineers to rethink the Renaissance, Galluzzi traces their transformation from obscure mechanical practitioners to in-demand influencers at princely courts over the course of his three chapters. He therefore joins the likes of scholars such as Daniela Lamberini and Pamela Long in shifting Renaissance historiography away from the artistic and literary achievements of the age toward often overlooked developments in technical knowledge and production.

The first chapter of Galluzzi's book centres on the great output of pictorial visualizations of machines and technical systems developed in Siena during the late fourteenth and early fifteenth centuries. A large part of the chapter is dedicated to the work of Mariano di Jacopo, called Taccola, whom Galluzzi credits as the first practitioner to promote and acquire cultural and social recognition for technical knowledge and production. An analysis of images from his manuscripts, *De machinis* and *De ingeneis*, allows Galluzzi to highlight Taccola's role in reviving ancient technical knowledge through dynamic and expressive graphics. Uninterested in extolling the technical innovations and practices developed by himself and contemporaries, Taccola focused his attention on translating the content of classical texts in his manuscript illustrations. In restoring the technical achievements of antiquity, Taccola laid the groundwork for a connection between classical cultural and the mechanical arts that defined artist-engineers as humanists of machines. Galluzzi notes that Taccola's successor Francesco di Giorgio drew upon classical technics and productions in his work, yet combined them with images of self-designed technical pieces in a new system of compositional organization. Combining drawings with descriptive texts, using cutaways and rotating views, and grouping machines based on construction and operation principles, his work laid the foundation for the illustrated technical treatises that over the course of the Renaissance found great success among princely patrons seeking to develop construction, hydraulic, and military projects.

In chapter 2, Galluzzi examines the graphics of Leonardo da Vinci, revealing how the polymath used illustrations as tools of representation and investigation to understand the different constructions and operations of machines. While drawing had been essential to the rehabilitation of classical techniques and practices for Taccola, for Leonardo it was key to the generation of new technical knowledge. In examining a broad range of Leonardo's drawings, including anatomical graphics and mechanical designs, Galluzzi demonstrates how the artist used illustrations to create close focus studies on the causes underpinning technical functions. Describing Leonardo's drawings as experimental exercises, Galluzzi argues that mechanical elements came to be understood by the artist as universal. There was thus a transformation in the conceptualization of machines and technical systems. Rather than understanding machines as indivisible entities, Leonardo viewed them as composites of a limited number of basic mechanics. Different functions were the

result of unique combinations of these mechanics, which were applicable to the human body and built machines alike. As Galluzzi writes, this understanding shaped Leonardo's notion of both organic and inorganic machines as physical expressions of the mechanical principles governing the natural world.

The third and final chapter of the book tackles the development of a new method of interpreting and depicting mechanics that occurred in the second half of the sixteenth century. Galluzzi notes that a cultural movement, which included figures like Niccolò Tartaglia and Galileo seeking to promote the nobility of mechanics, transformed machines into mathematical structures in their graphics. Investigations in mechanics took on an abstract character, and graphics no longer represented composite machines. Rather, drawings were now used to illustrate elementary mechanisms primarily through geometric principles. It was thus in the middle of the sixteenth century that a division between practice and theory began to emerge: engineers who were knowledgeable about the general laws of mechanics were clearly distinguishable from mathematically-illiterate practitioners.

Collectively, the chapters of this book outline the journey of technical practitioners from Renaissance workshops to baroque experimental laboratories. In a period of economic development, profound urbanization, and constant warfare, artist-engineers offered Renaissance society creative solutions to technical problems, new ways of imagining and understanding the world, and empirical methodologies that laid the groundwork for the new sciences. Galluzzi's richly illustrated book therefore does well to demonstrate how artist-engineers revolutionized the conceptualization and production of textual and visual content, and, consequently, produced radical innovations in graphic representations that reflect the ever-fascinating world that is the Italian Renaissance.

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