

Leonardo

Review

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LEONARDO DA VINCI AS A MUSICIAN

by Emanuel Winternitz. Yale University Press, New Haven, CT, U.S.A., 1982. 241 pp., illus. Trade, £20. ISBN 0-300-02631-5.

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Emanuel Winternitz, founder and curator since 1942 of the Department of Musical Instruments at the Metropolitan Museum of Art, is the first to recognize the lacunae in previous discussions of acoustics and instruments in Leonardo's notebooks. At the core of his book is the first systematic and thorough attempt to study all the relevant notes and sketches against the background not just of contemporary musical instruments but also of Leonardo's other work with mechanisms and natural phenomena. The sketches in particular are often incomplete or ambiguous in their detail, and Winternitz's experience of the history of instrument technology pays dividends in the elucidation of the passages that, inasmuch as they were noted by earlier commentators at all, were often misrepresented.

Ideas about acoustics and sketches for musical instruments and machines are scattered throughout Leonardo's notebook, covering their entire chronological range [1]. A major preoccupation seems to have been the invention of the 'viola organista', a stringed instrument with keyboard in which the strings were to be vibrated mechanically, either by a bow moving continuously backwards and forwards or by a friction wheel. It is easy to see how such an invention (often called 'viola' in the sixteenth century) might have been prompted by practical musical experience for frottola, villotta, rispetto, strambotto or French polyphonic songs. The sketches reveal that he finally overcame the mechanical problems, and although there is no evidence to suggest that Leonardo ever built the 'viola organista', others evidently did [2]. Vincenzo Galilei, writing at the end of the sixteenth century, and Michael Praetorius in the early years of the seventeenth, both refer to examples, and in the eighteenth century one was in the Medici collection under the supervision of Cristofori, inventor of the piano-forte [3].

A second major group of sketches concerns the construction of the drums and is again mostly taken up with schemes for mechanization. Perhaps not surprisingly, in view of Leonardo's interest in war machines and fortifications, these instruments, some of vast proportions designed to be transported and activated by carriage wheels, were more of military than musical use [4]. Other sketches show Leonardo experimenting with the problems of obtaining different notes from a drum while beating it and the production of chords. A further group of drawings, already much discussed in the literature, relates to theatrical machines, devised by Leonardo for production at the court of Lodovico il Moro.

Four of the most important chapters are known through earlier published versions, and it is useful to have revised texts gathered together with new material. But Winternitz's attempt to provide context through preliminary essays (on musical environment, traditions and trends, musical friends, exchange of ideas, and the like) is less successful, partly because the connections with Leonardo are often tangential. Thus the instrument-maker Lorenzo Gusanasco (best known as Lorenzo da Pavia) is discussed at length for no better reason than that it is known that the artist stayed with him in 1499! Excursions of this sort gave the book a rather miscellaneous quality—it might have been preferable to present discussions of the sketches in a more straightforward and less encumbered way, as Kenneth Ponting has recently done for Leonardo's drawings of textile machines.

The context that needs to be emphasized is not so much the historical and social background as the relationship of these sketches to Leonardo's other activities. The importance of the concept of analogy in Leonardo's thought is evident from almost every page of the notebooks. Recently Martin Kemp has stressed that those who believe that Leonardo began by studying things as an artist but then became preoccupied with studying them for their own sake have missed the point [5]. He investigated each thing for the sake of understanding other things and ultimately as part of the process of seeing the universe as a homogenous organism. Analogies between mechanisms and organisms are characteristic of his mentality, and a

neat example with musical implications occurs in some of the drawings of the larynx and trachea in the *Quarterni d'Anatomia* [6] and their accompanying text. In this way three of Leonardo's seemingly divergent or at least unrelated interests—physiology, acoustics and the mechanics of musical instruments—are combined and related. Ultimately Leonardo was interested in investigating musical instruments or acoustical phenomena not so much for their own sake as because of an interest in the phenomenon of sound as part of the macrocosm, an idea that he himself expressed in parallels between sound waves in air and motion in water. Some analogies confirmed the more general assumption of the harmonious unity of nature. The character of this wider view, the primacy of the final grand analogy, is somewhat lost in Winternitz's book. Leonardo's interests in music should not be viewed in isolation: they illuminate questions not only of education and musical literacy, but of all the elements of his work.

References

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3. Dom Francois de Bedos de Celles, *L'Art du Facteur d'Orgues*, Vol. 4 (1778).
4. Manuscript Cod. Atl., fol. 335, recto-c.
5. Martin Kemp, *Leonardo Da Vinci: The Marvelous Works of Nature and Man* (Cambridge, MA: Harvard University Press, 1981).
6. Manuscripts Royal Coll. of Windsor, No. 12, 697–699.

MODERN ART AND MODERN SCIENCE: THE PARALLEL ANALYSIS OF VISION

by Paul C. Vitz and Arnold B. Glimcher. Praeger Publishers, New York, NY, U.S.A., 1983. 396 pp., illus. Trade, \$16.95. ISBN: 0-275-91780-0.

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The authors of this book have worked in both science and art, although each is best known for his activities in one field. Glimcher is founder and director of Pace Gallery in New York City; he studied with Vitz, a visual scientist who is now director of New York University's new graduate