

Ptolemy's Musical Shadow

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Although an early and important source for ancient music theory, we are less familiar with Ptolemy's *Harmonics* than with his “awkward” geocentric conception of the universe, perhaps because Ptolemy did not develop new doctrines but tried to reconcile existing paradigms – the Pythagorean ratio theory with the sensualist approach advocated by Aristoxenos. Later in the 16th century in the controversy between Gioseffo Zarlino (1570-1590) and Vincenzo Galilei (1520-1591), the “Sintono di Tolomei” – Ptolemy's diatonic scale – played a decisive role, and one is tempted to interpret Zarlino as a thinker in the Pythagorean tradition and his opponent as a neo-Aristoxenian.

Two pictures from Zarlino's *Sopplimenti musicali* (1588), have received little attention to date. They are related to experimental devices, called heliconae discussed in Ptolemy's *Harmonics*. They are equipped with a systems of parallel strings of equal length tuned to the same pitch and a non perpendicular bridge permitting the study of musical harmonies. Zarlino's drawings feature the cube, a Pythagorean triangle and a circular diagram to prove the universality of his “senario”, {1, 2, 3, 4, 5, 6}, the extension of the Pythagorean tetraktys from four to six mutually related sounds or numbers.

Ptolemy's and Zarlino's instruments can be played and explored as virtual instruments.

[1] Claudius Ptolemaios (c. 1410). *Harmonica*. Bodleian Library MS. Barocci 124

[2] Raffaello (1511). *School of Athens* (details)

[3] Ludovico Fogliano (1529). *Musica teorica*. Nicolini da Sabbio, Venezia 1529

[4] Gioseffo Zarlino (1571). *Dimostrazioni harmoniche*. Venetia 1571, p. 116

[5] Gioseffo Zarlino (1588). *Sopplimenti musicali* (Venice: Francesco de Franceschi, Sanese, 1588)

[6] Gaspar Scott (1657). *Magiae universalis naturae et artis, Pars II. Acustica, [Francofurti] : Schönwetterus, 1657, p. 289*

[7] Francisco Salinas (1577). *De musica libri septem*. Mathias Gastius, Salamanca, 1577

[8] John Wallis (1682). *Ptolemy's Harmonics*, 1682

[9] Gioseffo Zarlino (1562). *Le Istitutioni harmoniche* (1562). First Edidtion: Venezia 1558

[10] Jane Piper Clendinning (1987). *Zarlino and the Helicon of Ptolemy: A Translation with Commentary*, p. 43

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