STUDY GROUP MUSICAL DIAGRAMS

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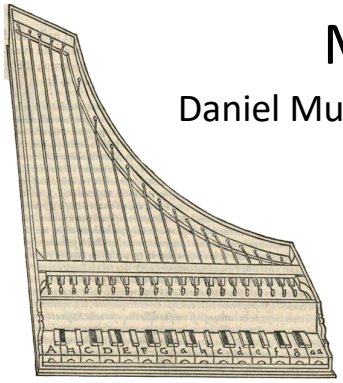

# Monochords – Polychords

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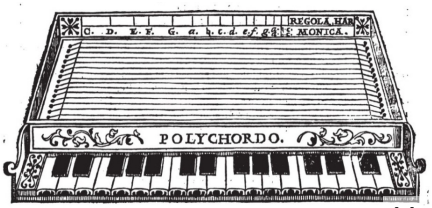
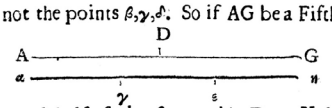



[11] [8]

Monochords are the epitome (quintessence) of Pythagorean ratio theory. Although continuous in the nature of pitch production, they served to prove the supremacy of small whole numbers and their ratios in music from ancient Greece to the Renaissance. But they were not instruments in practical music. With one or two bridges, it is possible to produce and demonstrate two or three notes and their harmonies simultaneously on a single string [1], but changing bridge positions takes too much time to be done in musical real time.

The Seaman's Trumpet, which could imitate the sound of a trumpet by exploiting the natural overtones [7], and the eBow [12] shown below are further developments of the monochord with practical applications as are the polychords described by Ptolemy (2nd century AD): Although the latter were conceived as experimental devices for demonstrating arithmetic-harmonic principles, they would also be suitable for accompanying songs in the various shades of the Greek tonoi [9]. Zarlino's further development [8] of Ptolemy's instruments, which would hardly be practical as mechanical musical instruments, is different. He wants to show the universality of the senario {1, 2, 3, 4, 5, 6} as an extended Pythagorean principle. Ptolemy's and Zarlino's instruments can be played as virtual instruments, the eBow as a real instrument.

ſtruck, but not the points β,γ,δ. So if AG be a Fifth to αη; and




conſequently each half of *that* ſtopped in D, an Uniſon to each third part of *this* ſtopped in γε; while *that* is ſtruck, each part of *this* will tremble ſeverally, but not the points γ,ε; and while *this* is ſtruck, each of *that* will tremble, but not the point D. The like will hold in leſſer concords; but the leſs remarkably as the number of diviſions increaſes.

[10]


[12]

[1] Ludovico Fogliano (1529). Musica theorica. Nicolini da Sabbio, Venezia 1529
[2] Gioseffo Zarlino (1571). Dimostrationi harmoniche. Venice: Senese, 1571
[3] Francisco de Salinas (1577). De musica libri septem. Mathias Gastius, Salamanca, 1577
[4] Claudius Ptolemy (c. 1410). Harmonica. Bodleian Library MS. Barocci 124
[5] Gaspard Schott (1657). Magiae universalis naturae et artis, Pars II. Acustica Francofurti] : Schönwetterus, 1657, p. 289
[6] Robert Fludd (1618). Utriusque cosmi historia, Vol I, Tract II, Lib VI, 232, 1624 (first edition 1618)
[7] Marin Mersenne (1636). Harmonie universelle. Paris 1636, Vol. IV, p. 218
[8] Gioseffo Zarlino (1588). Sopplimenti musicali (Venice: Francesco de Franceschi, Sanese, 1588)
[9] John Wallis (1682). Ptolemy's Harmonics, 1682
[10] John Wallis (1677). Dr. Wallis's Letter to the Publisher, Concerning a New Musical Discovery. Phil. Trans.(1665-1678), pp.839-842
[11] Gioseffo Zarlino (1562). Le Istitutioni harmoniche (First Edition: Venice 1558); https://muwiserver.synology.me/zarlino/
[12] https://wiki.sgmk-ssam.ch/wiki/E-bow_(Ralf)

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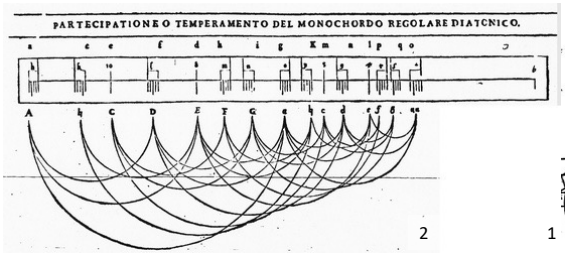

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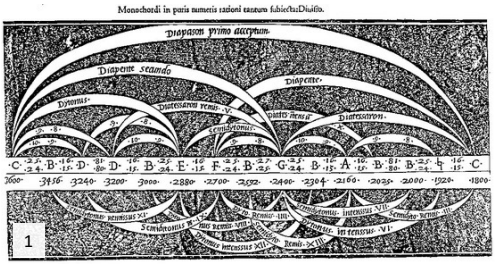

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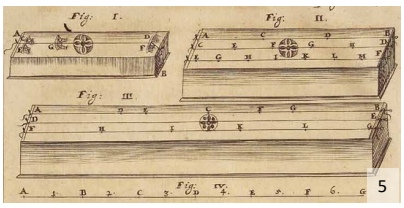

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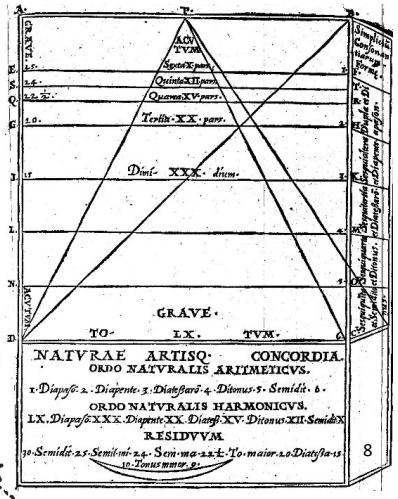

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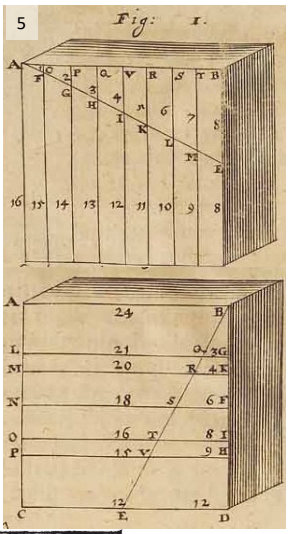

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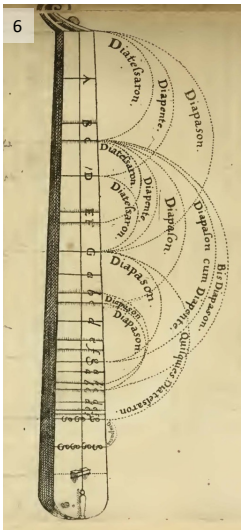

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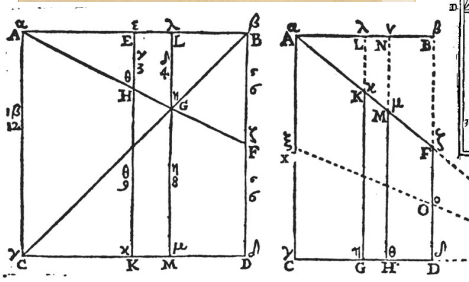
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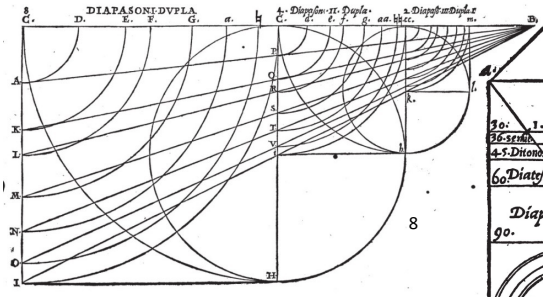

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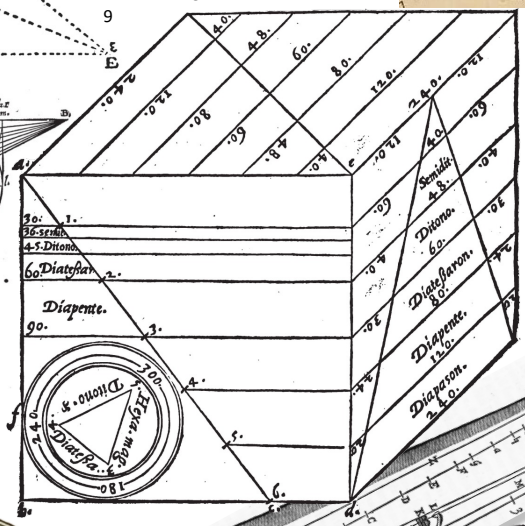


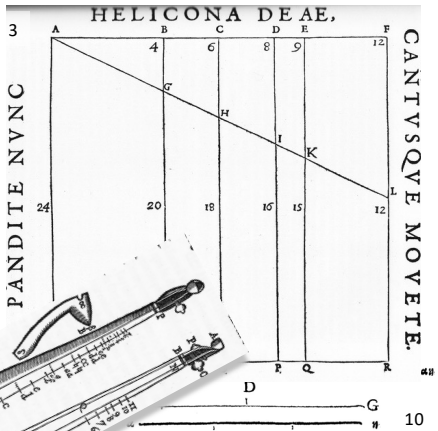

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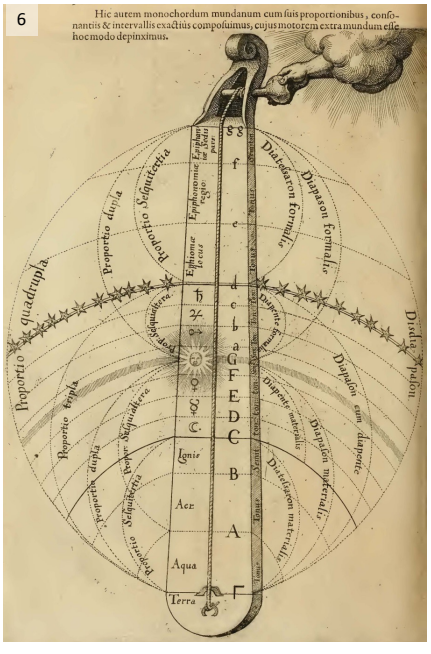

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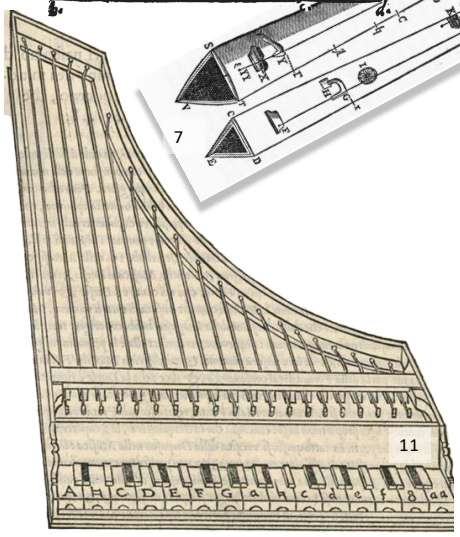
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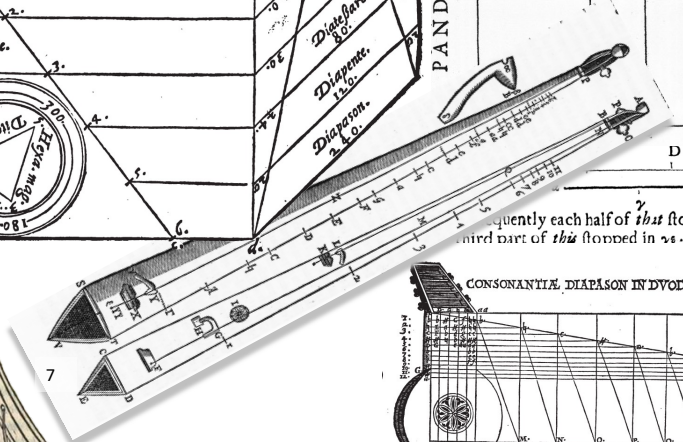
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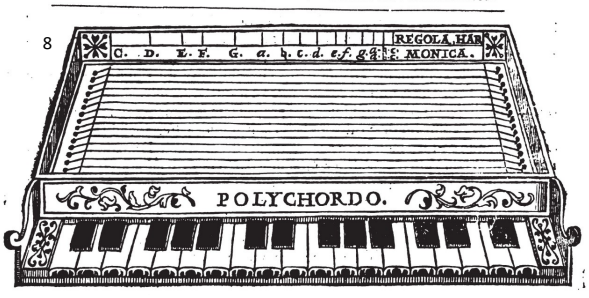

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