

HISTORY OF HARMONIC THINKING

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Compositions: “LLULL. El Misteri del Logos” (oratorio-concert, texts by Ramon Llull and Werner Schulze), 1998/99; “Fibonacci Haiku” for bassoon, 2004; “CALCULUS“ (theatre-opera, text by Carl Djerassi), 2004/05

Exhibitions: PHAINOMENA (Harmonics & Acoustics), Zürich 1981; JAHRTAUSENDTURM (Music & Architecture), Magdeburg 2000; ARCHITEKTUR UND HARMONIK IM DIALOG (Team INTERNATIONALE PROJEKTGRUPPE HARMONIK), Wien 2001

Abstract: 40 years ago a new science called *Harmonic Research (Investigación Armónica, Harmonikale Forschung)* was established in Vienna.

In the academic world it is represented by the internationales harmonik-zentrum (international center for harmonics) at the University of Music and Performing Arts Vienna, Austria. Werner Schulze is the director of this centro para la investigación armónica.

*All that is spatial has a sound.
Tone emerges from harmony.
Harmony emerges from concord.
Harmony and concord are the roots
from which music, laid down by the ancient kings, emerged.
Spring and Autumn by Lü Pu Wei, 3rd century B.C., vol. III/5*

1 HARMONIC THINKING TODAY

The idea that the universe originated in sounds, or consists of sounds, was widely believed in ancient civilisations. At first this belief was outlined in myths and symbols. But when the Greeks evolved “from mythology to philosophy”, this concept was still accepted,

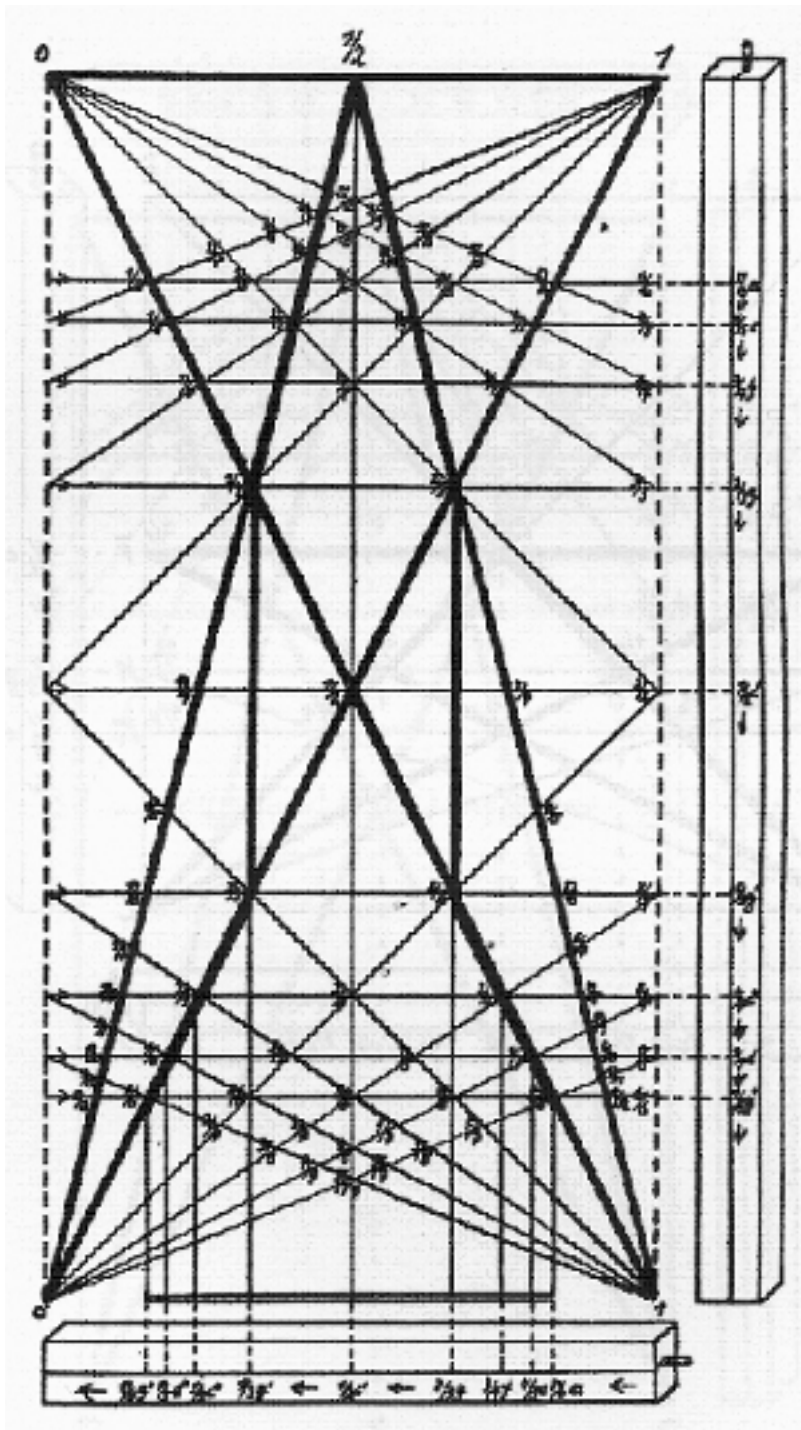
and it was reflected by the *Pythagoreans*. Harmonic Thinking was based on *numbers* (arithmós, a, b), *proportions* (lógos, a:b), *means* (mesótes, a:m:b), and *analogies* (análogía, a:b = A:B aná lógon x:y) – especially *analogies between nature, man and music*, which we may call the “Golden Triangle” of Harmonic Thinking. Numbers and proportions (proportionality) rule the tone duration (rhythms) and intervals in music, but at the same time they are understood as universal laws, which correspond to psychic and intellectual dispositions of man as well as to the arts (téchne) and to ethical and political laws of the state (pólis).

This theory did not emerge all at once, since the school founded by PYTHAGORAS in the 6th century B.C. did not leave any written documents. One century later fragmentary writings came into light, and closer connections can we find in PLATON's dialogues *Phaidon*, *Timaios*, and *Politeia*. 500-600 years later, in the first centuries A.D., Pythagorean doctrines appeared again, in documents which have been proven to be authentic, so that it must be assumed that there was an active tradition at that time and during the centuries before. NICOMACHOS of Gerasa, IAMBlichOS of Chalkis and THEON of Smyrna are the main representatives of this “New-Pythagoreanism”, and from them some ideas survived into the Middle Ages. But apart from the theory of music, there is no consistent tradition of harmonic ideas in other disciplines.

The rediscovery of Harmonic Thinking, which we owe to the humanists, takes place in the Renaissance period. To scholars well into the Baroque epoch, the concept of a world harmony based on musical laws is very familiar. One of the great scientists at the beginning of the modern age makes it his life's mission to write about this world harmony: JOHANNES KEPLER (1571-1630), the famous astronomer and mathematician, who book 5 of his *Harmonices mundi libri V (Five Books of World Harmony, Linz/Austria 1619)* compares the orbits of the planets with musical intervals. (Even in his first work, the *Mysterium Cosmographicum*, which he writes at the age of 23, KEPLER set out some thoughts on a geometrically based world harmony.) But in his time KEPLER was misunderstood, and at the end of the Baroque epoch the Pythagorean theory of world harmony sank into oblivion.

During the 19th century this situation changed when the German scientist ALBERT VON THIMUS (1806-1878) picked up the old ideas again and rediscovered the ancient harmonic tradition. He wrote a two-volume book entitled *Die harmonikale Symbolik des Alterthums (The Harmonic Symbolism in Antiquity)*, and he brought to light many interesting ideas; he mixed them, however, with his own speculations inspired by ancient symbolism. His life-work would hardly have had a noteworthy success, if not the German-Swiss scholar HANS KAYSER (1891-1964) took up the investigations of THIMUS and correlated them with other scientific achievements. This so-called “Kaysersche Harmonik” was a synthesis of the Pythagorean tradition, overlaid with his own highly speculative metaphysics. We owe a lot to KAYSER and to his successor RUDOLF HAASE (* 1920), but with clear limits on speculation and with a far-reaching foundation on the principles of the arts.

Through the interdisciplinary dialogue among the sciences and arts Harmonic Research discovers analogies between nature, man and music. In that way relationships are established which could not have come to light through the individual sciences.



Interdisciplinary dialogue between geometry, music theory & architecture
 Hans Kayser: Ein harmonischer Teilungskanon, Zürich 1946, 38

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