

“Whispers of Harmony” Is the Pythagorean Notion of Harmony Still Relevant in Our Times?

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My talk is based on two of my multimedia art projects:

- “Tones and Whispers”, realised with the support of the Institute of Cognitive Neuroscience, London, UK
- “Life Matters”, initiated at the International Centre for Genetic Engineering and Biotechnology in New Delhi, India

Each of us is a fragment of the space-time continuum, made of the same components as the rest of the world and, on atomic level, immortal.

This contemporary awareness would have no meaning without the Pythagorean idea of the World’s Harmony being the most pervading and beautiful concepts developed by the human mind. Expressed in consonant relations between macro and micro components of the Universe, it gave rise both to science and art. Pythagoras believed that the whole matter emanated tones, that the whole world was music. He divided it into *Musica Mundana* (later known as Music of Spheres) and *Musica Humana* (music of the human body). He based his harmonic model on *number* and the melody of structures filled up the space. In the 12th century, J.Kepler changed it into polyphony introducing a different scale for each planet relevant to its distance to the Sun — the centre of that time Universe.

His tractates “**Harmonices Mundi**”, was the last attempt to synthesize all the accessible knowledge in order to reveal the ultimate secret of the Universe. His ambition failed and the fragmentation of human experience continued: science separated from religion, substance from form, matter from spirit.

Nevertheless the dream of Harmony remained. The contemporary interpretation of J.Kepler’s “Music of Spheres” opens the Golden Record, our message to far away civilizations, carried on boards of Voyagers, testifying for the potential of human imagination and cognition.

For “Tones & Whispers” Kepler’s musical notations were performed on theremin (instrument using radiowaves) and visualised in the form of spheres surrounding the planets. Animated by the musician’s hands they circulate inside the visual landscape made of images from fMRI brain scan and distant galaxies. The planetary melodies merge with sounds of human brainwaves, everyday environment and far off cosmic space creating a multilayered composition. There is no center but the human brain, no other space than that confined between hands.

After 1905, there were no more absolute measurements, only relative measurements depending on the observer’s position. In this *Anno Mirabilis* A.Einstein gave each of us the right to equally misshaped and fragmented access to the World deprived of a any determined nexus and point d’appui.

The end of the Euclidean order activated the search for dimension that led to the discovery of self-similar fractals. The repetition of simple patterns, developing into more compound structures, recalled harmony.

The Cosmic Accord as Kepler assumed, reverberated once at the moment of Creation (according to present calculations 13-15 billions years ago) filling the universe with the eternal polyphony. Much later a new line joined in: **the music of life**, scored up in genetic information that assures the persistence of its performance.

The genetic code, composed of repetitive variations of ACGT — with slight differentiations — is common to all life on Earth, having evolved from a single moment that took place around 3 to 5 billions years ago.

The genetic effect is the result of an orchestration of groups of genes, the dynamics of which are extremely sensitive to perturbations and cannot be fully foreseen. The chaos theory left no hope for any deterministic and steady performance. Harmony assumed shape of the temporal state of synchronization and the readiness of different systems to interact and correlate their random

behaviors became a key feature of our unstable micro and macro, animated and unanimated worlds. These divisions, however, underwent radical changes.

Science asserts that, on the biological level, only DNA is alive; making the rest of the organism (including ourselves) merely a part of genes' much larger habitat. The vital feature of a gene is that it contains knowledge about its niche and causes the environment to keep that knowledge in existence. The gene itself has no property that would distinguish it from unanimated matter: life turned out to be very contextual.

The project "Life matters" refers to this new perception of life that puts the fundamental human questions (How did we come here? Who are we? Where are we going?) in a new light. Initiated at ICGEB, it was inspired by the research on pathogens that have been accompanying human race from its beginning (malaria) as well as new ones foreshadowing the future (SARS). The project bridges micro and macro processes, computer modeling with physical surrounding, scientific data with everyday experience creating a contemporary multidimensional environment. Designed as an artistic laboratory, it aims to provoke personal reflection on the relationship of the man with the rest of his universe that makes the matter of life matter.

It seems that the main characteristic feature distinguishing human beings from other organisms is the highly developed consciousness of existence.

Consciousness is as an emergent phenomenon resulting from the "harmonious functioning" of an entirely unconscious system. It is a property of the human brain embracing all our thoughts, emotions or beliefs which, as experiments revealed, are encoded as spatio-temporal patterns of its neural networks, driven by DNA.

Is then the nature of our thinking the consequence of the way our brain has developed? Is the model of reality it creates a fruit of Darwinian selection? If so, the same processes might have prevented us from other directions of reasoning and a "general theory of epistemological and ontological relativity" may embrace other logics, other mathematics, other micro and macroworlds and other realities different from our (human) standards.

Our reality is all that we can get information from. We use artificial mediators, cultivate various experimental methods and theories linked to them in order to "perceive

with the mind" that what we cannot perceive with our economical *sensorium*.

The dream of Harmony might not be the only key to the Universe but we haven't developed another one. Maybe we were not even able to; neither do we know whether it brings us closer to the Truth. Yet in this dream we find our humanity and regain our dispersed oneness. Through redefining it, reforming or questioning we activate layers of our creativity that helps us to deal with the World and gives us hope that one day the reality of knowledge will evolve into the reality of understanding.

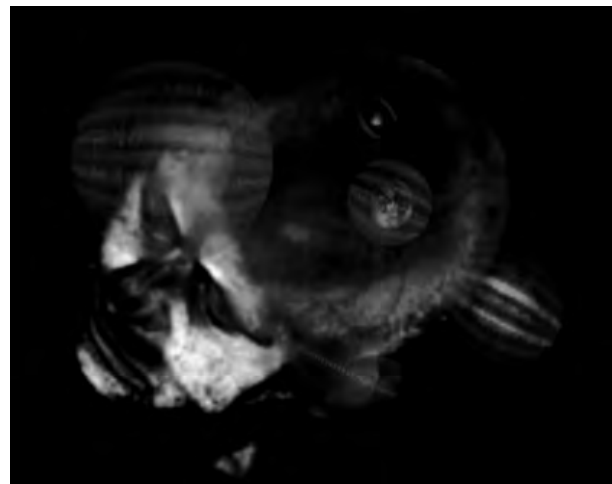


Figure 1: Tones & Whispers. Video still



Figure 2: Life Matters. Video still