

Science & Consciousness

New Science and Ancient Wisdom to Discover the Mysteries of Life

The Influence of Frequencies on Vital Processes:

- Neurons and Music
- Superior Tuning in 432Hertz, Fractals and the DNA
- Oscillations and Neoplasia

The Secret
positive thoughts or affirmative thoughts?

Ervin Laszlo
Temporal non-locality: A field not yet explored

Bosons Yes, Bosons No
The Fall of the Paradigms

Pre-natal Life
A Interview with Jaap van der Wal

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Chords & Fractals at 432 Hz

The musical application of the fractal theory, with the 432Hz tuning - the new alchemy of electronic music - resonates to the fundamental frequencies of life: heartbeat, DNA replication, brain synchronisation and also to the Schumann resonance and the geometry of creation. Most of the musical productions existing from 1939 vibrates instead at incoherent frequencies of 440Hz chords. How curious is that!

by Andrea Doria

Around 99% of the musical productions we listen to daily through the media, the sonographic supports (CD/DVD) and on the web, has a basic tuning of 440 Hz.

Since I had the opportunity to put my fingers on my first modular synthesiser, I always considered the sound generated by that instrument as coherent information. The auditive manifestation of a complex geometric hologram available through a relatively simple form of art. It was 1989 and the instrument was an old Multi Moog. Since then, many years went by and in the field of electronic synthesis evolutionary jumps have been made which are absolutely stunning, adding newer and newer elements to the common frequencies generated by normal base oscillators. Such sounds, often superficially defined "cold" or "rigid" by the supporters of acoustic sounds, are instead in my opinion the purest expression of the mathematical congruency of the Intelligent Universe, which wants to express itself and communicate part of its nature to us.

Due to a greater disclosure, in the last years, of the most fascinating discoveries in the scientific fields, especially in the field of atoms in quantum mechanics and in the models utilised to generate fractals, new and totally revolutionary scenarios of sound experimentation are now being realised in regard to electronic music. They will allow the new sound alchemists to elaborate new acoustic models from scratch, which will be able without a doubt to radically change not only the direct expressive and participatory contact with the listener, through devices which are able to visibly translate such models, but also to affect, in a coherent way, the field that permeates matter, through which these frequencies travel and take life. A real electronic underground movement, absolutely destabilising, is actually taking place, perhaps even greater than the Futuristic Movement itself, conceived by painter Luigi Russolo (1885-1947) and poet Filippo Marinetti in the far 1912.

The tuning fork and the octave

Before getting into the explanation of this new principle for composition where electronic music is the protagonist, it is necessary to acquire more detailed information on the suppression of specific information concerning music in general, starting from the basic instrument which measures it: the tuning fork. Although it is a well known instrument, for musician newbies and non musicians it is practically unknown, so it is good to reminded what it is and why it is important in this sonic revolution. The tuning fork has different meanings, but more commonly it indicates an instrument able to create a standard tone, that when hit, oscillates at the precise frequency of 440 Hz (hertz). Such frequency is used today as the standard tuning for all electronic music instruments that are put on the market. It is also an instrument used in medicine to transmit the vibrations through the bones, in order to make different types of acoustic examinations as the Rinne test, the Weber test, the Schwanbach test, the Bonnier test, the Galle test and the Bing test. Small tuning forks are also utilised to generate fixed frequencies in some security systems, such as train circulations on our rail networks.

The Greeks used the term diapason (tuning fork) to indicate what today is called the *octave*, meaning the interval between one note and the other of double frequency. The etymology of the term derives in fact from the Greek language *dia pason* and means *through all* (tones). Therefore before starting to tune our instrument and compose, it would be necessary to understand that the diapason is first of all a scientific instrument. Or at least it should be!

Going through different vintage documents, my attention was caught by some events where the protagonist was none other than Giuseppe Verdi. In 1884, Giuseppe Verdi obtained from a Musical Commission of the Government of that time, a decree law which normalised the tuning fork at a LA (3) of 432 oscillations per second. This decree is still exhibited at the Giuseppe Verdi Conservatory in Milano.

(Image caption: Software version of the famous 'Moog Modulator' by Robert Moog)

In a letter sent by Verdi himself to the above mentioned commission, one can read: *"Ever since the normal Diapason (which then was at 435 Hz) was adopted in France, I suggested we should also follow that example, and I formally requested several orchestras in Italy, among which the one from La Scala, to lower the tuning fork, conforming to the normal French. If, for mathematical reasons, the Musical Commission instituted by our Government deems to reduce the 435 vibrations of the French tuning fork into 432, the difference is so small, almost imperceptible to the ear, that I willingly adhere. It would be a serious, most serious mistake to adopt, as it is proposed by Rome, a tuning fork of 450 vibrations. I also agree with you that the lowering of the tuning fork does not take anything away from the sound and the verve of the performance, giving on the contrary something more noble, more full and majestic that could not be achieved by the shrieks of an overly high pitch tuning fork. As far as I'm concerned, I would like a single tuning fork to be adopted by the whole musical world. The musical language is universal, therefore why the tone named A in Paris or in Milan, should become a B-flat in Rome?"*

The "normal tuning fork" (LA at 435 Hz) to which Verdi refers, is the one kept in the Museum of the National Conservatory of Paris, whilst the so called "scientific tuning fork" referred to by the decree unanimously approved at the Congress of Italian Musicians in 1881, is the one proposed by the physicists Sauveur, Meerens, Savart and by the Italian scientists Montanelli and Grassi Landi, calculated on a central DO (index 3) of 256 cycles per second.

It is important to underline that the rush towards the higher pitch started with the unilateral adoption of a higher LA (440 Hz) by the military Russian and Austrian bands at the time of Wagner. Such tuning fork was accepted by convention in London in 1939, without adducing any scientific justification or any reason based on the laws governing the Universe.

Maria Renold's **valuable research**, has demonstrated more than once that through the normal standard tuning based on LA at 440 Hz, the listeners in the room started to exhibit controversial and antisocial behaviours.

Vibrations and emotions

From this short excerpt of events, one can immediately notice how there has been a "deliberate" attempt to alter frequencies, leading to a forced cracking in musical harmonies. Why do I say "deliberate"? Simply because my blessed logic suggests to me that once one has entered into possession of a measurement and an objective value with regard to a phenomenon, meaning that this study has served to understand certain mechanisms of such phenomenon, to alter it without knowledge and without adducing plausible reasons, is equivalent to plain *interfering*. It could also be a simple choice dictated by taste, but in my opinion it is legitimate to remain doubtful.

Today's science tells us that everything in the Universe is energy in vibration. The vibrational rhythm of an object, including the human body, is called *resonance*, and a sound is *"the vibration of an elastic body which is transmitted into the surrounding element (air) and propagates through periodic molecular wave condensations and rarefactions, resonating acoustically (in Italian it is written "by sympathy", Daniela Enrico translator's note) not only with the instruments of the same tone, but also with multiples and submultiples of its frequency."*

Therefore, based upon what has been said so far, and based on my over fifteen years experience as an electronic composer able to perfectly comprehend the relationship between sound, harmony and human emotions, I don't think I'm wrong in suggesting that the disharmony dictated by a too high-pitched tuning fork could be the cause of antisocial behaviour in our society. Just think that around 99% of the musical productions we listen to daily through the media, the sonographic supports (CD/DVD) and on the web, has a basic tuning of 440 Hz. These doubts

were further strengthened in me when I got to know Graham H. Jackson, an extraordinary musician and teacher, trained in Waldorf pedagogy, founded by Rudolf Steiner, who spent most of his life researching the spiritual basis of harmony. In his book, *The spiritual basis of Musical Harmony*, Graham describes the life and experiences of the priestess of tuning, Maria Renold. Maria was involved in research and experimentation based on the study of different tunings and their objective effects on the public, before her demise in 2003. In her book, *Intervals, Scales, Tones and the Concert Pitch C=128 Hz* (Temple Lodge Publishing, 2004), she reveals all the relevant mathematics in the process of 432 Hz tuning. The interesting thing is the mentioning of a certain Heinrich Schreiber, or Henricus Grammateus, an Austrian mathematician, who apparently set this tuning by ear already in 1518, without realising what he had achieved: a real tuning system which Renold defined of “twelve real fifths.” The musician describes that when her piano was tuned at 432 Hz, the bystanders observed not only an increase in the richness of the timbre and tone quality, but that the latter seemed to come from some *unspecified* points in the centre of the room, rather than from the piano itself, thus referring to the famous “free etheric tone”, often mentioned by Rudolf Steiner. A sort of additional harmonic, operating in resonance with the instrument.

Other interesting ideas come from the life and experiences of Maria Renold. Her precious research showed, more than once, that through the normal standard tuning based on LA at 440 Hz, the listeners present in the room started to exhibit controversial and antisocial behaviours. When instead the tuning of the same instrument was made at 432 Hz, the same people, newly invited to listen to the same concert, were *pleasantly impressed and enthusiastic*. For over twenty years Maria Renold was able to notice those evidences, by interviewing and testing over two thousand people, 90% of which preferred the lower pitch tone, of an **equi-temporal (in Italian equo-temporale, I'm not sure how to translate this, translator Daniela Enrico's note)** scale based on a C at 256Hz and an A at 432Hz.

Coherence and golden harmony

Now, thanks to the disclosure of the **valuable insights and research of Ananda Bosman, a very dear friend and also a courted visionary scientist residing in Norway**, electronic musicians of the whole world are finally exchanging all the necessary information uniting the musical theory of fractals to the 432Hz tuning, in order to start composing their music coherently and in harmony with [Ananda Bosman's writing now is introduced]:

- 1- the human heart (heart beats)
- 2- the double helix of DNA (replication frequency)
- 3- Maximum brain function by the bi-hemispherical synchronisation entrainment of the brain lobes,
- 4- the planets fundamental frequency of the Schumann resonance
- 5- the musical geometry of creation

measured by the temporal geometric rhythms of:

- 1- 36 BPM (beats per minute)
- 2- 54 BPM
- 3- 72 BPM
- 4- 108 BPM
- 5- 144 BPM

As we know from Kepler's laws, the planetary arrangement of our solar system follows the tuning scale of C at 256 Hz, and the planets are also an octave inside the Triangular Sierpinski Fractal, which is the self-organised “random” model used as the grid of all the gas molecules contained in an mol of air (1000 molecular reactions), thus allowing the harmonic resonance phenomenon to emerge and the coherence of musical information to resonate in symmetry. This is due to the nature of the tuning cascade of C = 256, which follows the perfect golden mean spiral of music, as the true and equanimous universal tempering system (the path of superconductivity, which is zero electric resistance). Such a musical spiral (golden mean PHI) enables the cascade among the respective summations of octaves of each respective scale (8, 16, 32, 64), incorporated in a holographic model inside the recursive microcosm of C = 256. In other words, an electronic

amplification, or a recording that has been amplified and accurately tuned and composed at 432 Hz, is holographically complete in each scale. In even more specific terms, every level of the musical track, including the portion between electronic intervals (even more evident in CD recordings), embodies the ratio of the entire myriad of holographic information of the twelve octaves of the golden mean spiral, including in this “whole” the hyper tones, the lower tones, infrasound and ultrasound, through every respective octave of the forces governing the Universe. In the golden mean proportion the scale changes in order to follow the harmonic step, but the ratio stays the same. That means that there is no loss of information in the data cascade for each scale. Other fascinating theories are brought to life around this method for composition, where 8 Hz become a fundamental and recursive component ($8 \times 54 = 432$). As we know, the resonance of our planet “beats” at around 8 cycles per second (Schumann resonance) and one cannot help but notice that, through the 432 Hz tuning, in this scale the 8 cycles become the 27th overtone (C).

8Hz is the frequency upon which the DMT molecule operates, a hallucinogenic substance produced by our pineal gland. 8 Hz is the replication frequency of our DNA and 8 Hz is also the alpha wave rhythm of the brain, where our “parallel processors”, or cerebral bi-hemispheres are synchronised to work together.” [End Ananda Bosman’s excerpt, with summary of Ananda Bosman’s ideas]

Ananda introduces us to the possibility that the neocortex, 90% of which is “non assigned”, becomes reawakened in this synchronisation, by operating in every cellular dendrite with maximum flux of information for that scale. The waves of “ordinary” awareness range from 14 to 40 Hz. In this range just some cellular dendrites of the brain operate, which are mainly using the left hemisphere as centre of activity, where the flux of information is billions of times weaker. A bit like when one uses an old 386 processor compared to a last generation Pentium. In other words, at 8 Hz each one of us could operate exactly like a super computer.

To briefly conclude, in case of a real plan of scientific experimentation based on these data, one could note that they are not simply “random”, but that there is a strict correlation among all these elements and the use of coherent musical frequencies. It is my wish and desire that soon this information could awaken the interest it deserves, because the “coincidences” dictated by this mysterious number, 432, keep appearing everywhere in nature, extending to the ancient monuments in Egypt and Teotihuacan.

Moreover, there is much talk of the alleged beneficial effects of music therapy, but almost no talk about the frequencies to which we are all subjected daily, that come in fact from a “non coherent” tuning fork.

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For any information and exchange of experiences and opinions, please visit the forum:

432hz.automiribelli.org

Bibliography and web info

— **Ananda Bosman’s website:**

<http://www.akasha.de/~aton/Unidance.html>

— Music: A Time Frequency approach - www.uwee.edu/surepam/media/TFAM.pdf

— R. Strassman, M.D. *The Spirit Molecule* - Park Street Press — www.rickstrassman.com

— Alm. J. And Walker. J., Time-frequency analysis of musical instruments, SIAM Review, 44, 2002, pp. 457-476

— Fractal music webpage:

<http://www.fractalmusicclub.com/default.asp>

— Graham H. Jackson *The Spiritual Basis Of Musical Harmony* - www.grahammusic.com

— *Time Frequency Analysis of Musical Rhythm I:* www.uwcc.edu/walkerjs/media/TFAMR.pdf.

— <http://it.wikipedia.org/wiki/Diapason>

— <http://www.native-instruments.com>

[NOTE: The 2003, original text of Ananda Bosman, that was excerpted from can be seen online, here: http://432hertz.com/256_432Hz.html and the 2000 and 2001 article, here: <http://www.akasha.de/~aton/Unidance.html> & is further extrapolated, here": <https://432hz.com/science432hz.html>]