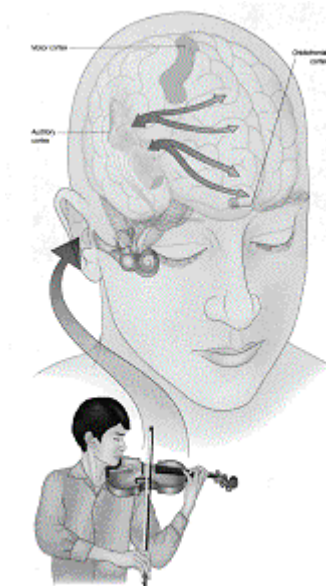


## Bio. Quantum Physics of Sound and Music

Science of Quality Series n° 10 . -Previous articles in [www.w.babin.net](http://www.w.babin.net)

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Musical-mind : Author Apogee Series 3Pilot v1.Ou1

Sound perceived by humans is produced by the brain through the stimulus of external vibration transmitted and converted into information signals, by means of the hearing organs focused in the activities of the cochlea. The brain exercises pre-attentive research functions, interactively searching to be synchronous with all frequencies that are similar to the spectrum of the human voice and their differences in tones and frequency before producing the effective sounds that we hear. Sounds in fact, are not a direct expression of external acoustic vibration but sensory simulation produced by the brain. Hence, the brain do not recognises directly the external frequencies as physical sounds or noises, but as “Information Energy” derived by the “entangling activity” of transformation of vibration waves in information signals. In fact the last information signals are not an immediate consequence of the physical vibration of air. This is because vibration, if not transduced in quantum-signals, cannot interact with the information activities of the brain neurons. (1)

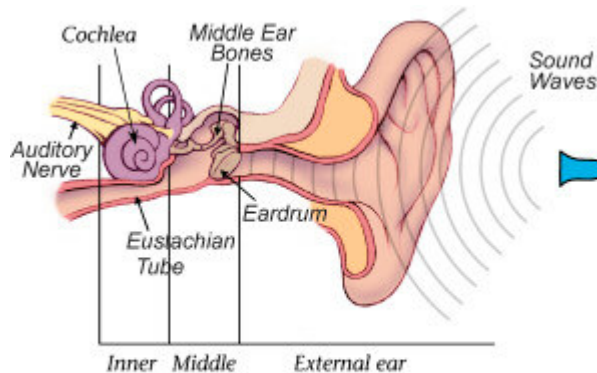
Also, we do not see light directly, because when we get a sensation of light, it depends on a transformation of the lighting stimulus of photons that produce the sensation of light as an effect generate by the brain through the changes of photon frequency in information signals produced by means of entangling actions of the ocular bulb in the retina. In a similar way, “phonons” of sound-vibrations need to be transformed into informational signals to interfere with the brain’s pre-

selection activities; the last are preferentially focused versus recognizing the human voice.

Generally speaking, “Bio-Quantum Physics “, following the above premise, has the opportunity to re-educate people in order to understand the limits of the mechanical approach to science that has been applied to current thinking, without trying to deeply understand the role of sensory operators in transforming Free Energy of photons or phonons into “Information Energy” in order to permit the signal exchange between the brain and the external world.

Today, the application of Quantum Physics to the Science of life, is becoming very important in order to break the previous limitation on the perspectives for future knowledge by society. As a matter of fact, sound, voices, music, rhythm, etc., are of vast importance in every culture on earth, so that the impact of a trans-disciplinary interpretation of “*Bio. Quantum Physics of Sound and Music*”, can have a profound influence on an innovative role in human life and society, both via new scientific cognition and emotional experiences of the art.

In particular, humans love music because it resonates with the innate brain structure of mental and emotional information. In fact music is a fine art of vibration emissions, consisting of sound and silence expressed through time, by means of a variation of air pressure. So that today in the context of information society, it is becoming of huge importance to interpret how the ears interact with the brain, isolates and decodes air-vibrations into distinct signals of “Information Energy” perceptible by the brain for producing embodied sensations of sound and music.



Anatomy of the Ear

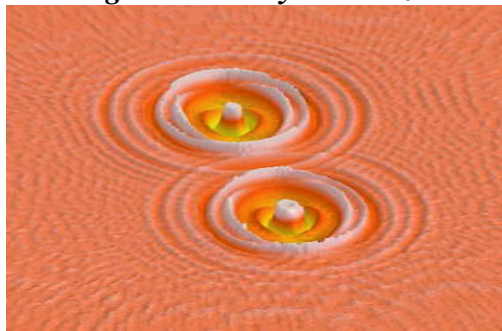
The cochlea is shaped like a snail and it is a complex apparatus of the inner ear that works to transform external vibration in information signals in coordination with the pre-attentive input of the brain that in mammals pass through the internal “Stereocilia filaments” inside the “Organ of Corti”. In fact the cochlea receives sound wave vibration within the hearing frequencies range, that it is diverse for different animals. The external vibrations pass through the ear by means of the transmission of the ossicles of the hearing bones, striking the upper closing oval membrane. The perceived vibrations of diverse wave composition travel through a fluid of various densities enclosed in the inner helix of the cochlea. This permits it to distinguish the different forms of sounds (pitch, loudness, timbre) of the mechanical vibration received. In the final section of cochlea, the “*stereocilia of hairs cells*”, works as a trapping system able to “*entangling phonons*” in order to transform them in information signals that can interact with the pre-attentive research functions, transmitted by the brain through the acoustic nerve. Hence the cochlea is the basic hearing organ that converts the mechanical vibration of air into an information energy impulse understandable by the brain as production of sound. (2)

The transduction in sensory activity is operated by Stereocilia (external). There are about fifty filaments of Actin-protein living in each of the various thousands of hair cells; the last are

hexagonally packed cells, posed along the helix of the cochlea, where hair cells present a systematic progressive variation in length, number, width and symmetry, predetermined by the DNA. Therefore, the system of stereocilia act as sensory transduction-microvilli to discriminate and monitor through a “decode/recoding” method, the form of the incoming pulsing waves, in order to convert their wave forms into information signals and to send to the brain the “Information Energy” that produces the sensation of sounds. The microvilli are not only involved in pseudopodial movement in order to analyse the incoming waves and to alter the polarization of the actin-filaments, to transmit an electrical signal through the auditory nerve, but also works as a source of joining “*entangled phonons*”, to teleport “*q.bits*” of information energy to the brain in a way that the communication among Energy , Matter and Information can be transduced into a trapping-cavity of the hair cells to transfer information energy in a common scale of energy codification.

Looking to reproduce “*entangling information signals*” today the hearing system it is already exploited in many technologies of wireless communications and certain types of antenna networks.

***Entangled Waves Synchronization.***

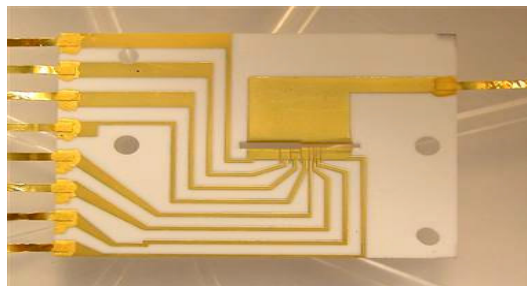


<http://www.physorg.com/news6484.html>

*Image credit: National Institute of Standards and Technology*

*The Image below show the interaction of "spin waves" emitted by two nano-oscillators that generate entangled microwave signals.*

For instance, based on Entanglement, Teleportation takes place inside an ion trap made of gold electrodes deposited onto alumina as it is showed in the following figure:



**ION TRAP –NIST ; <http://www.msnbc.msn.com/id/5225655/> ;**

In conclusion, nature has a superior intelligence and works using communication that is not limited to our common interpretation of the reductionistic and localized approach of mechanical science. The entangled effect represents the appropriated methodology for energy re-codification in order that the brain is able to produce sounds and music from vibration. Sound and music are an extremely subjective, aural experience, programmed by means of the DNA/Brain interactivity to transfer “Information Energy codification”, through sensory entangling-transducers, so that we can make sense of, and have empathy with our surrounding environment by brain's production of sound and musical sensations.



[Music Therapy http://www.berklee.edu/news/2002/02/brain.html](http://www.berklee.edu/news/2002/02/brain.html)

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- (2) -Hearing and hair cells : <http://www.bcm.edu/oto/research/cochlea/Hearing/>