

TIBETAN SINGING BOWLS

TUBULAR BELLS

HEALING TUNING FORKS

I developed an interest in the science of frequencies and vibrations in 2011, as a logical consequence of accepting the fact that everything in the universe pulsates and, consequently, has its own frequency.

For over 4,000 years, and possibly up to a century ago, man still retained his great nature observation skills, which allowed him to perceive the effect of certain natural phenomena even if he was unable to provide a 'scientific' explanation.

Oriental cultures of the past have, without a doubt, shown the best powers of observation of nature and of the universe and in various spheres of knowledge they have produced 'dogmas' that modern western culture has only recently started to examine scientifically. Pulsation and the energy this phenomenon generates give life to everything that exists on our planet and everything that exists in the universe. These pulsations range in frequency from a very low to an extremely high one. When detecting sounds our sense of hearing can only perceive an infinitesimal part of all natural frequencies. This does not mean that frequencies that are inaudible to man do not exist.

The physical laws that define the '+' and '-' of our electric energy share the same principles of the concept of Yin and Yang: both are opposing but complementary forces that could not exist without each other.

In this brief paper I have tried to summarise everything that I have learnt to date while getting acquainted with the vibration world of Tibetan singing bowls, tubular bells and healing tuning forks and trying to observe their effects on man and nature.

Paolo Wolfsgruber

ABSOLUTE CONCEPTS:

Everything in the universe vibrates (or pulsates).

Atoms vibrate (pulsate) to create all things in the form of aggregates. Each aggregate possesses its own different, specific vibration (pulsation).

Man can 'go through' some aggregates of atoms, but not others. For example, we can walk through air, whereas the same cannot be done with a floor.

Only a very small number of vibrations produce sounds that are audible to man.

Humans can perceive **sounds** with **frequencies** (vibrations) included between **16 Hz** (Hertz) and **20,000 Hz** (also known as 20 kHz). From now on, we shall use the term '**sounds**' only to define frequencies that are audible to man. As previously mentioned, these frequencies are only an infinitesimal part of all **vibrations** that are present in the universe.

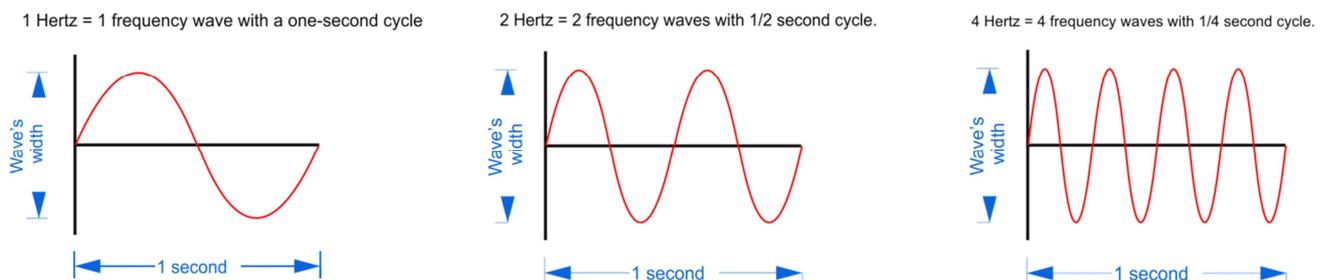
Interesting fact: whales sing (literally) by emitting frequencies that are lower than 16 Hz. While not being audible to man, these vibrations can be heard through the sea, as far as 400 km away, by other whales, who then start singing the same song back. Unbelievably every year whales change their song almost as if a new song had made it to that year's whale 'hit parade'. Whales can also produce higher sounds that are audible to man, but not in the form of songs.

A FEW OBSERVATIONS ON FREQUENCIES (or vibrations):

The **Hertz** (symbol **Hz**) is the unit of frequency in the International System of Units. It is named after Heinrich Rudolf Hertz, a physicist who made major contributions to science in the field of electromagnetism. The Hertz is defined as a **reciprocal second** (the meaning of this definition will become clearer further on), and it is measured as **Hz = 1/s**, that is 1 Hertz corresponds to the value of the **cycle** of a frequency measured in the space of 1 second. It is therefore also correct to say that the value of a frequency is expressed in **cycles per second** with the symbol Hz (Hertz).

*Interesting fact: the physicist Hertz decided to set the time of 1 second as the basis for his studies, that is to study and measure the vibrations that occur within a one-second cycle. 4,000 years ago the concept of 'cycle' had already been used to indicate the time between the beginning and the end of every phenomenon (...which then starts and ends again, and so on...). For example, the earth's rotation has a 24-hour **cycle**, seasons, planets, the solar system and the universe each have their own different cycle. Keeping our feet firmly on the ground we can say that our heartbeat (frequency) can be measured within a one-minute cycle; we have a sleep and wakefulness cycle, as well as a breathing cycle, and so on. Famine and abundance happen in cycles, as do peace and war. Even though these cycles may seem independent from each other, they are in fact part of each other and one strictly depends on the other to preserve the **life** of the entire universe. It is for this reason that they have long been known also as vital rhythms.*

Below we can see some examples of two-dimensional representation of a 1 Hz, 2Hz and 4 Hz frequency. Note how the higher the frequency, the more split 1 second is.



Note: The width of the wave represents the level or, if you prefer, the volume of the frequency.

NB: although in the above examples frequencies, or sound waves, are drawn in two dimensions, we know that in reality sound waves are **spiral-shaped** and that they propagate following a precise mathematical proportion called the **golden ratio** or **divine proportion**. This proportion specifies the ratio between two different quantities, the bigger of which is the mean proportion between the smallest and the sum of the two quantities. This number can be estimated, with growing accuracy, by the ratios between two consecutive numbers in the numerical sequence by the Italian mathematician Leonardo Fibonacci (1170-1240).

Interesting fact: In 1223 the emperor Frederick II was delighted to witness a curious contest in Pisa between abacists and arithmeticians, armed only with pen, paper and abacus. They were asked to solve the following problem: "How many pairs of rabbits will you get in one year (excluding cases of death) supposing that each pair gives birth to one new pair every month and that the younger pairs can already start breeding when they are two months old?"

The contest was won by Leonardo Fibonacci, from Pisa. The son of a wealthy merchant who used to trade throughout the Mediterranean, Leonardo had grown up in Arab countries. His father, an experienced accountant, had entrusted him to the masters of Algiers, who taught him the principles of algebra and calculation. Leonardo gave his reply so rapidly that he gave rise to suspicions of the contest being rigged. By the end of the first month there will in fact be the original pair and one extra pair that they have generated; at the end of the second month there will be a third pair although, having the second pair also started to breed, there will also be two additional pairs, making a total of 5 pairs, and so on. The reasoning follows this progression:

1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181, 6765, 10946, 17711, 28657, 46368, 75025, 121393... each new number is simply the sum of the previous two.

By dividing any number in the Fibonacci sequence by the previous one, the same ratio is obtained, which is called golden ratio (1.617977528...).

This is the first logical mathematical progression! This sequence, now known as 'Fibonacci numbers', is characterised by several properties (most notably the fact that by squaring any number in the sequence, the resulting number corresponds to the previous multiplied by the following number in the sequence increased or decreased by one unit according to a rule) which allow for some baffling 'tricks' to be created.

*Example: $21^2 = (13*34) - 1 = 441$ and $89^2 = (55*144) + 1 = 7921$*

Leonardo Fibonacci subsequently travelled to Syria, Egypt and Greece, where he met the most eminent Muslim mathematicians. These experiences gave life to the Liber Abaci, a huge treaty that disclosed the mysteries of the Hindu numeral system to the Western world, as well as the "quod arabice zephirum appellantur", which indicates a number which at the time had been unknown to the Greeks and Romans, a number as 'empty' as a breath of wind: zephyr, zefr, or zero.

If we were to build a spiral by applying Fibonacci numbers, the shape of this spiral would be as perfect as that of the seashells or the snail shells found in nature. The same is true of the propagation of sound or frequency waves.

Galileo Galilei (15th April 1452 – 2nd May 1519), one of the greatest scientists of all times, believed that "the book of nature is written in the language of geometry", thus confirming that the world's harmony manifests itself through shapes and numbers. By observing nature, we discover elegance and harmony, as well as a uniformity of structures between macrocosm and microcosm. In nature the spiral is in fact one of the most recurrent geometrical shapes. Sunflower seeds, for example, are arranged

in two groups of logarithmic spirals thus occupying the circular space within the flower as efficiently as possible. The number of clockwise and anti-clockwise spirals depends on the size of a flower and is correlated to Fibonacci's sequence as follows: 34/21, 55/34, 89/55, 144/89 and 233/144. The number of spirals in pinecone and pineapple bracts is correlated to the Fibonacci sequence. In succulent plants thorns are often arranged in spirals. Cyclone winds form almost perfect spirals as they converge towards their centre following an anti-clockwise direction (!) in the Northern Hemisphere and a clockwise direction (!) in the Southern Hemisphere. In DNA, the molecule that encapsulates our genetic information is a double-helix structure formed by two intertwined spirals. Spiral Arms characterize the Milky Way and many other galaxies in the universe. Different elements in plants, such as branches, leaves and seeds, grow according to a spiral pattern in order to optimize space and efficiency. Hawks close in on their prey and insects advance towards sources of light following a logarithmic spiral. In the human auditory system the cochlea is spiral-shaped to allow the vibrations produced by sound waves to be perceived. And so on.

*Leonardo da Vinci's famous drawing of the **Vitruvian man**, which can be dated back to 1409, one of the most famous depictions of the ideal proportions of the human body, shows how the body can be harmoniously contained within the two 'perfect' shapes - the circle and the square – according to the golden ratio.*

THE MULTIPLES OF THE HERTZ AND THE RECIPROCAL SECOND

Let's now explore the world of frequencies in a slightly more practical way.

Having established that 1 Hertz is the 'longest' unit of measure of a frequency lasting one second, we should now analyse how often can frequency be multiplied within that one-second timeframe. Defining the Hertz as reciprocal second means that the higher the vibration's frequency, the more the 1 second period is divided by the number of cycles of such frequency.

Certain manmade machines emit frequencies with extremely high cycles. A normal UMTS mobile phone, for instance, can emit and/or receive 2,200,000,000 Hertz in one second.

Below is a description of the multiples of the Hertz and their symbols:

1 Hertz (symbol **Hz**)

1 decahertz (symbol **daHz**) = 10^1 Hz = 10 Hz

1 hectohertz (symbol **hHz**) = 10^2 Hz = 100 Hz

1 kilohertz (symbol **kHz**) = 10^3 Hz = 1 000 Hz

1 megahertz (symbol **MHz**) = 10^6 Hz = 1 000 000 Hz

1 gigahertz (symbol **GHz**) = 10^9 Hz = 1 000 000 000 Hz

1 terahertz (symbol **THz**) = 10^{12} Hz = 1 000 000 000 000 Hz

1 petahertz (symbol **PHz**) = 10^{15} Hz = 1 000 000 000 000 000 Hz

1 exahertz (symbol **EHz**) = 10^{18} Hz = 1 000 000 000 000 000 000 Hz

1 zettahertz (symbol **ZHz**) = 10^{21} Hz = 1 000 000 000 000 000 000 000 Hz

1 yottahertz (symbol **YHz**) = 10^{24} Hz = 1 000 000 000 000 000 000 000 000 Hz

Let's translate these frequencies into practical examples:

- 1Hz (Hertz): The frequency of an earthquake's vibrations.

Interesting fact: During the first World War warning signs were displayed before wooden bridges banning soldiers from marching across them, since it had been

proven that marching in unison could destroy even the sturdiest of bridges. An analysis of the cadence of a march reveals that soldiers' feet strike the ground approximately every second (1Hz). This produces a wave (or magnetic field) with a frequency which is comparable to that of an earthquake.

- 16 Hz (Hertz): the minimum audible frequency for a child, 20 Hz for an adult.
- 20,000 Hz (Hertz) or 20 kHz (Kilohertz): top limit of frequencies audible to man.
- 261.625 Hz (Hertz): Middle C, the central note on the equal temperament scale. Equal temperament is the musical system used to build a scale based on the division of the octave into equal steps.
- 440 Hz (Hertz): is the frequency of the musical note 'A', used as a standard for tuning musical instruments (tuning forks).

Electronics:

- 44.1, 48, 96 and 192 KHz (Kilohertz): sampling frequencies typically used in CDs, DVDs and Audio DVDs.
- 740 kHz (Kilohertz): the clock speed of Intel 4004, the first commercial microprocessor (1971).
- between 1 and 8 MHz (Megahertz): the clock speed of early personal computers (late 1970s, early 1980s).
- between 2 and 4 GHz (Gigahertz): the clock speed of the latest single microprocessors (2000-2012).

Electromagnetism:

- 50 or 60 Hz (Hertz): the alternating current supplied by Italian plug sockets.
- 400 Hz (Hertz): the alternating current used in aviation, generated and used on planes.
- between 88 and 108 MHz (Megahertz): FM radio. Immediately higher frequencies are VHF and UHF, used by aviation and for television.
- between 800 and 2200 MHz (Megahertz): telecommunications – GSM 900, UMTS 2100, LTE 800, DCS and LTE1800 are the frequencies used by mobile phone networks to transmit and receive mobile phone signals
- 30 pHz (Petahertz): X-Rays.
- 1300 yHz (Yottahertz): Gamma rays, produced by the sun and by a nuclear reaction.

To represent with an obvious example our capacity to hear sounds with our ear (frequencies between 16 Hz and 20,000 Hz) compared with the whole range of known frequencies the latter could be compared to an 8-kilometre long film of which we can only see a single frame.

Interesting facts: in 1934, the University of South Carolina sponsored a Research Committee comprising doctors and pathologists to observe 16 terminal cancer patients at doctor Royal Raymond Rife's clinic (16/5/1888 – 5/8/1971). After 90 days 14 of the 16 patients were completely cured and after other 130 days, following the introduction of a change in the treatment, the remaining two patients were also cured.

The method used by Rife to destroy viruses consisted in increasing the emitted frequency to the value corresponding to the virus' resonant frequency (supposing that cancer is a virus- editor's note). This is in any case the same principle currently used by doctors to disintegrate kidney stones, by radiological therapies to fight tumours and... by singers to break a crystal glass when a note reaches the glass' resonant frequency. It is worth mentioning that, when used correctly, said frequency does not cause any damage to surrounding tissue. Unfortunately by 1939 most of the 44 doctors who eight year before had praised doc. Rife went as far as denying having ever met him. Some incidents, such as the destruction of his laboratory, the killing of some people close to him and the destruction of all the documentation in their possession, led Rife to put an end to his research. Since 1939, in order to hide him

from public opinion, the same existence of Doc. Rife has been brought into question. This story has many assumptions that would lead it to be considered an urban myth, similar to the one about the sad demise of the great inventor and physicist Nikola Tesla. No reliable or scientific evidence exists for these facts, with the exception of those regarding the inventions patented by Nikola Tesla, one of which is the alternating current everyone is still using today. What is on the other hand irrefutable is that doctor Hulda Clark (18/10/1928 – 3/9/ 2009) invented an electronic device called Zapper which at low voltage (about 7-9 volts) emits frequencies which are able to destroy microbes, parasites, moulds, etc. produced in the intestine or introduced with food. Intestinal parasites are carried by the blood throughout the body and settle where they find the most suitable conditions. This kind of 'electronic antibiotic' has no contra-indications for the human body and a few applications are enough to kill parasites, microbes and pathogenic viruses from the blood and the cells of living beings. But because this results in 'cadavers' being produced inside the body, which could lead to disorders, an adequate detoxification therapy must be implemented at the same time. The only drawback of this type of therapies is that a full recovery is not possible unless the environment of the sites where pathogens proliferate is modified. I am convinced that the same principle applies to cancer in modern medicine: we can operate and successfully eradicate a tumour but unless we intervene on the cause that produced it in the first place the problem will not be solved. Eng. Georges Lakhovsky (1870 – 1942) maintained that life is born out of radiation, is sustained by radiation and is eliminated by oscillatory unbalance. If a cell is forced to vibrate at a frequency which is different from its natural frequency it will get damaged and in order to heal it said cell must be exposed to a radiation of such frequency as to supply the energy needed to bring it back to its natural healthy state. If for Pasteur killing microbes was necessary, for Lakhovsky the oscillation, that is the cell's natural energy, should be restored through the use of radiation of adequate frequency. Driven by these considerations he created some energy devices formed of insulated copper and silver open rings of variable size which could be fashioned into bracelets, necklaces and belts. These devices were veritable open oscillating circuits which could redress the balance of the cells' energy levels thus healing them. In 1924 he started using his oscillating circuits in the fight against cancer at Paris' Salpêtrière hospital. Initially he experimented on geraniums affected by tumours, achieving the first successes; subsequently, encouraged by the oncology ward consultant, he used his method on terminal patients affected by cancer, leading to the extraordinary recovery of some subjects deemed incurable by doctors. Lakhovsky planned and built a multiple-wavelength oscillator which, thanks to the emission of innumerable harmonics, was able to resonate with any group of cells of the human body. With Lakhovsky vibrational medicine was born, or rather became known, as it had already been grasped by Tibetan monks 4,000 years before.

WHAT IS RESONANCE?

RESONANCE is the first of the three fundamental principles of physics (the second being harmony, the third intention) **on which is based sound massage with Tibetan singing bowls, tubular bells and therapeutic tuning forks tuned on specific frequencies.**

You will undoubtedly have heard a window's glass pane vibrate when a plane flies past or tea cups clinking when a very noisy heavy vehicle goes past in the street.

This phenomenon is called RESONANCE or atom magnetic resonance (each atom has its own frequency), which was studied and defined by the brilliant Italian inventor Pier Luigi Ighina (1908-2004). **Frequencies relate to one another** and vibrate in unison. If one can understand this concept with the example of glass vibrating whenever a plane flies past (a frequency audible to humans), one can begin to understand how the phenomenon of resonance also occurs for all the many other frequencies which we cannot hear.

The example of the plane and the window glass is only a small demonstration that helps to understand the amount and type of phenomena which are incomprehensible by the human mind unless they can be seen, heard and touched with hand! (like a doubting Thomas!). Man does not believe unless he can see, hear and touch with hand. In short for man something that is not tangible is not real. The men of 'science' of the past had many intuitions about some natural phenomena but these will never be accepted unless they become tangible or can be scientifically reproduced. But this does not mean that these phenomena do not exist! Whenever we realize that we are not able to understand a phenomenon occurring in nature we call it a mystery. How many mysterious phenomena did mankind witness throughout the millennia without understanding their meaning?

*Interesting facts: 13.7 billion years ago the **Big Bang** occurred and the universe was born. Nobody knows exactly what there was before. What we know is that at some stage something of apocalyptic proportions occurred; a huge explosion which released tremendous heat and a temperature of billions of degrees. 376,000 years later the temperature had dropped to 'only' 3,000 degrees centigrade: this allowed the first electrically neutral atoms to form and, subsequently, the matter which we know. It was then that electromagnetic waves and photons, no longer forced to interact exclusively with hot plasma's free electric charges, started propagating into the space which was being created by the progressing expansion.*

It was at that time that the Universe emitted its first radiation, a primordial radiation which started to spread throughout space in every direction.

*Therefore if we wanted to 'listen' to the signal emitted by the Universe when it became 'visible', that is when it was 376,000 years old, we should first of all try to look for traces of an **isotropic electromagnetic radiation** (i.e. a radiation which can be detected in space in every direction) using a radio telescope. In the Sixties during a radio astronomy survey some scientists discovered by chance an electromagnetic radiation which could be detected in every direction. Having ascertained that it was not a simple interference originating on Earth, as they had initially assumed, they subsequently concluded that it was the background cosmic radiation, which was in fact called CMBR (cosmic microwave background radiation). To that frequency corresponds an emission temperature of -270,27°C (absolute zero).*

It was therefore possible to conclude, as has been by now ascertained, that the primordial Universe was crossed also by sound waves! Knowing that sound propagation cannot occur in a vacuum this could initially seem strange. But immediately after the Big Bang space was not mostly empty as it is now, on the contrary, it was particularly dense: this justifies the argument which claims that for a certain period of time after the Big Bang sound waves could be generated and propagated throughout the Universe. It is also well-known how a double bass, which has thicker strings and a bigger body than a violin's, produces deeper sounds, i.e. sounds with a wider wavelength. It is therefore easy to understand how, due to the

immeasurable size of the environment in which they were produced, the sound waves generated during that particular stage of the Universe development were characterized by an infinitely low frequency and, therefore, a huge, unimaginable wavelength, which can be calculated in several thousand light years! (not in 1 second, as we usually calculate frequencies in Hertz). So those sounds would definitely not have been audible to a hypothetical human presence, or any creature known to us. To this purpose John G. Cramer (24/10/1934, professor of physics at the University of Washington– USA) processed the figures recorded by the WMAP space probe (which, as is known, had recorded differences in matter concentration, i.e. compression and rarefaction (pulsations comparable to phenomena connected with the propagation of an acoustic wave) using a software for audio playback. Following several adjustments he increased the recorded acoustic frequencies by a factor of 10 to the power of 26 to make them audible to the human ear. The resulting sound was similar to the fundamental sound of a Tibetan singing bowl. This is another mystery.

The same happened with the recording of the interstellar 'sound' transmitted by the US probe Voyager 1 20 billion kilometres from Earth and after a 36-year journey. If the frequency of that 'interstellar' sound is increased using the rule of the octave (which will be explained further on) until it is audible, the resulting sound corresponds to the sound made by Tibetan singing bowls. How did some Tibetan monks conceive and build their bowls 4,000 years ago claiming that they emitted the sound 'of the universe'? In all probability in ancient times the word 'universe' had a different meaning than the one it has today. For Tibetan monks the universe represented the natural harmony and the absolute order of all visible and invisible things.

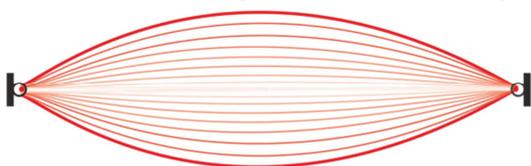
WHAT IS HARMONY?

Harmony is the second fundamental principle of physics on which is based the sound massage with Tibetan singing bowls, tubular bells and healing tuning forks tuned to specific frequencies.

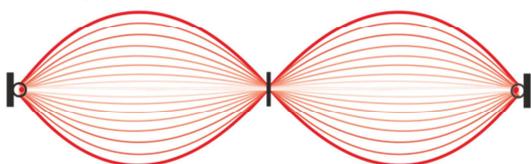
Pythagoras, best-known for his theorem, understood the validity of harmony defined by the ratio between numbers and musical notes. He would in fact have been the inventor of the first musical scale; it seems that he discovered how musical harmony is based on numbers and mathematics. Pythagoras then put this theory into practice by stretching a piece of string between two bridges. By placing a bar exactly half-way down the string he obtained the higher octave. He then placed another bar $\frac{2}{3}$ along the string, thus creating the interval of the 5th. By placing another bar $\frac{3}{4}$ along the string he found the interval of the 4th. Pythagoras deemed the distance, in terms of pitch, between the 4th and the 5th to be of great importance and called it 'tone'.

We probably have to thank Pythagoras for the concept of division of the octave. Besides its relevance in terms of musical practice, the musical scale based on these intervals was also very important from a theoretical point of view: Plato described it as numerical foundation of the world's soul.

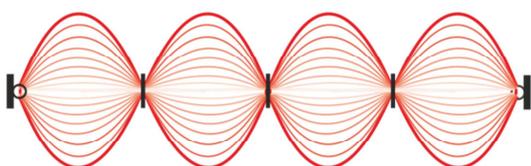
Vibration of a whole string = The fundamental sound (or frequency) is called octave.



2 = Length split into 2 = Double the fundamental frequency (higher octave sound)



Length divided by 4 = Four times the frequency of the fundamental (sound is 4 octaves higher)



... and so on.

Harmonic sounds are related to the fundamental sound.

It should be noted that the same principle is true for air columns vibrating inside pipes (such as happens in wind instruments). Pythagoras was therefore the first to understand that a note's pitch is proportional to the length of the string that produces it and that the intervals between sound frequencies are simple numerical ratios. According to Pythagoras the rotation and revolution movements of the Sun, the Moon and the planets would produce a continuous sound, inaudible to the human ear, and all together they would produce a harmony. Consequently the quality of life on Earth would be affected by these celestial sounds.

The ancient Greeks compared the cosmos to a musical scale, the highest sounds being produced by Saturn and the fixed stars. The Sun was essential for the purpose of producing this harmony as, according to the Greeks, it corresponded to the central note.

When a Tibetan singing bowl, that is a bowl with a shape built with a precise (golden) ratio, is made to vibrate correctly, it can emit both its fundamental sound and the higher octaves by producing a range of harmonic frequencies which, when passing through the human body, generate **harmony** by resonance.

By resting the bowl against various areas of the body and making it vibrate a therapist can propagate a natural harmonic order which penetrates every cell and molecule of the body.

An experienced therapist can also, thanks to the phenomenon of resonance, identify any physical (and/or psychic) 'blocks' in a person undergoing sound massage based on the sound emitted by the bowl. The presence of a physical 'block' (which does not mean that it has already developed into an illness) makes the bowl emit a different type of vibration. After all, the same resonance principle is applied and processed in ultrasound scans, magnetic resonance scans, etc.

When the harmonic vibrations of a Tibetan bowl pass through the body they generate order and harmony which in turn translates into an absolute and universal beneficial effect for the body.

At the *Centro de Terapia de Sonido y Estudios Armonicos* of Buenos Aires the beneficial effects obtained through the application of sound harmonies also on serious illnesses have been studied for years.

Interesting fact: by filling $\frac{3}{4}$ of a Tibetan bowl with water two very fascinating experiments can be carried out:

First of all, by hitting the edge of the bowl using its mallet the precise propagation of the sound waves through water can be clearly seen. The water will in fact 'depict' these sound waves across its surface so that they can be easily seen.

With a bit of practice the octaves and the perfectly geometrical propagation of the sound waves can also be identified. If the bowl is harmonic the waves will form in an orderly and harmonious fashion. Many Tibetan singing bowls on the market are not harmonic and will therefore produce very 'disorderly' waves on the water's surface.

The second experiment is even more fascinating. This time instead of hitting it with the mallet, the bowl should be made to vibrate, as taught in the basic courses of sound massage. Crossed by the fundamental frequency (or sound) and its range of octaves, the water will start to 'boil', incredibly creating thousands of tiny water 'lapilli' which will even 'boil' over the edge of the bowl. I would like to remind you that over 70% of the human body is made of fluids!

WHAT IS INTENTION?

Intention is the third principle on which is based sound massage with Tibetan singing bowls, tubular bells and healing tuning forks tuned on specific frequencies.

Intention can be defined as a purely paranormal phenomenon, although this is not true (I have personally been able to ascertain its effects during a study session).

To acquire this sound massage technique a lot of practice is however needed. Applying intention while performing a sound massage heightens the effects of vibrations directing them to a specific point of the body or along a precise life line.

As mentioned, intention is acquired with practice and one can start perceiving it when doing the initial group exercises. For example, when all participants of a study group apply intention when directing with their mind the vibrations of their harmonic bowls towards a single subject, the latter will immediately perceive a feeling of being completely wrapped up by sound waves. The subject will feel that the 'intensity' of these frequencies around him/her is much stronger, so much so that this is usually described as having been hit by an ocean wave.

Intention can modify the path of a sound wave!

Interesting fact: Telekinesis is a paranormal phenomenon which would allow a living being to act on the surrounding environment by manipulating inanimate objects through invisible physical means, according to methods which are still unknown to science. The more intuitive definition of telekinesis is the ability to move physical objects with the mind.

Without a doubt telekinesis cases concern people exceptionally gifted with uncommon powers of mental energy; 'working' with frequencies (the electroencephalogram being the most obvious example) our brain is however able to concentrate and direct energy fields which operate both inside and outside our body. Have you ever had the 'feeling', when in a crowd, that somebody's gaze is concentrating on you? Or of someone intending to make you turn around and look for them? How often does focussing concentration on something or someone result in a change of an expected outcome?

To better understand what is meant by 'intention' try standing in the middle of a room and spin quickly doing a 360-degree turn. Once you stop you will be able to give a rough description of the largest objects, such as a table, a window or a sofa. Then a second person should say the name of a colour and you should spin again doing another 360-degree turn at the same speed as before. You will realise that this time you will only be able to describe precisely details of that colour, no matter how small. And only those! Your brain has consciously associated the colour with the intention to identify the objects of that colour eliminating from visual scanning anything that could interfere with the result.

A therapist's concentration must therefore be absolute and his/her thought must be aimed at the treatment points or lines... **with intention**. When this happens the results of a sound massage are decidedly better and the treated subject is able to tell the difference.

Another important piece of information worthy of mention on the subject of treating the human body using waves (frequencies) is that unlike any treatment carried out using medical equipment, the natural vibrations emanating from Tibetan singing bowls, tubular bells and healing tuning forks cannot cause any direct or collateral damage. Quite the opposite in fact!

TUBULAR BELLS

There are many types of tubular bells on the market, both large and small, tuned to different frequencies that resonate with different types of cells and molecules of our body.

In this case I would like to exclude those tubular bells with frequencies generating purely a restful and relaxing environment to focus instead on the 528 Hz tubular bell.

The tubular bell 'tuned' to 528 Hz was built by combining studies on genetics and studies on frequencies. The 528 Hz frequency is used to balance the double helix structure of DNA in order to preserve and harmonise its structure's entire architecture. In DNA the specific sequence of the *nucleotides* represents the genetic information which is translated under the genetic code in the corresponding *amino acids*. It is not by chance that DNA is an oriented, complementary, spiral-shaped informational anti-parallel double helix. If we were to section this 'spiral' to obtain a two-dimensional representation, we would notice how this graphic representation can be compared to the graphic representation of two equal frequencies, opposed but complementary (see the previous paragraph on frequencies).

For years Eng. Albert Rabenstein has been studying the beneficial effects of the **528 Hz frequency** on man; several experiments carried out by him would suggest that this frequency could even be used to correct some inherited genetic code defects.

The effects that can be easily noticed on people treated with the 528 Hz frequency are: an increase in vital energy, clear-headedness and creativity.

HEALING TUNING FORKS.

Tuning forks are known to us as the tools mostly used to tune musical instruments. As seen, 440 Hz is the frequency which corresponds to the musical note **A**, whereas 261.625 Hz corresponds to **C**.

On the other hand, to treat effectively and naturally contractures, muscular and bone pain, i.e. the so-called 'structure' the **128 Hz** healing tuning forks are used. This frequency helps alleviate local pain and is therefore used on the areas affected by pain or contracture.

The **136.1 Hz** tuning forks are used on acupressure, shiatsu, reflexology and digitopressure points; the transmission of vibrations through the special tip of the tuning forks is less invasive than a needle and less painful than shiatsu pressure. Its objective is to re-balance internal organs, which are stimulated through the reflex points and the corresponding meridians mapped by Traditional Chinese Medicine.

The tuning forks' wide tip is used to widen the area of vibration whenever a larger area needs to be treated. The more pointy tip is instead used to direct the vibration to a very specific spot and is used for example in auriculotherapy, where treatment is applied to the ear's reflex points which are very small.

Interesting fact: Auriculotherapy is a form of alternative medicine based on the idea that the ear (specifically the pinna) is a tiny reproduction of the entire human body. Auriculotherapy spread as systemic therapy throughout France in 1956 thanks to a medical practitioner from Lyon, Paul Nogier. Nogier searched the history of medicine to see if anyone had ever used the ear for therapeutic purposes; he thought he found evidence of such practice from Hippocrates' times up to the present day (there was evidence of this in the practices of 'popular medicine' of the countries of the Mediterranean area, as well as African countries); he then set to work to experiment on the different points of the ear and he thought he discovered that the ear would contain the representation of the innervations of various organs and apparatuses, such as to create the picture of an upside-down foetus on the pinna.

128 – 136.1 Hz tuning forks are 'hit' using a special stick with a hard metal core and a soft rubber surface, thus making the forks vibrate more intensely and for longer.

THE CHAKRAS AND SOUND MASSAGE.

Chakra, a noun originating from the devanāgarī writing (a type of spelling used by different Indian languages such as Sanskrit, Hindi, Marathi, Kashmiri, Sindhi, Nepalese), can be translated as 'wheel', 'disc' or 'circle'. That concept of the Chakras is typical of Indian religious traditions, inherent to yoga and Ayurvedic medicine, originating from Hindu and Buddhist Tantric traditions. In its most common meaning this term is usually interpreted as 'centre' to indicate those elements of the 'subtle body' which are the seats of the latent divine (or vital) energy.

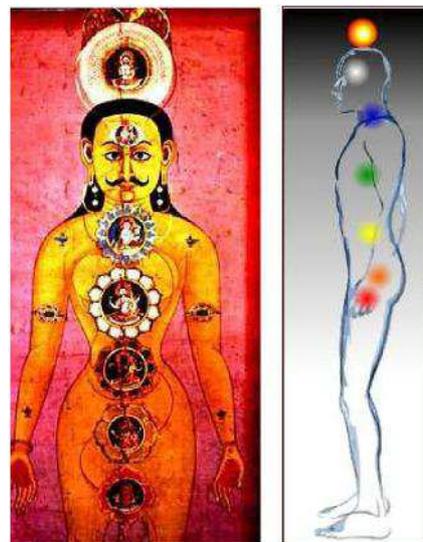
Sound massage with Tibetan singing bowls takes into account the position of the 7 Chakra points (the so-called main points) in the *intention* to make sound vibrations reach also the energy sphere of these vital points.

All seven different-sized bowls can in fact be made to emit a sound. Each bowl has a point of resonance with a specific Chakra. The largest with the first Chakra point (the lowest) and the smallest with the last (above the head). Each Chakra is directly associated with a specific organ or endocrine gland of the body.

The sound of each bowl has, as mentioned, a point of resonance with a corresponding Chakra, although for sound massage purposes making a single bowl vibrate using a particular technique is enough to bring harmony and order to every Chakra. Usually each therapist establishes a relationship of total *harmony* with one (or two) of the seven bowls and uses it for sound massage, alternating massage with the sounds emitted by the other bowls by striking them gently with the appropriate mallets.

Even though the body has many energy points, the best known are in fact the **7 main Chakras**, located along the central axis of the human body, from the base of the spine to a few centimetres above the head. According to the model of Eastern disciplines, each Chakra occupies a level which directly affects various parts of the spine and, therefore, the vital flow. A 'blocked' Chakra limits a person's material and energetic capacities and results in ailments and complaints in the corresponding organs and glands. Many ancient Eastern disciplines on body and mind wellbeing, which are nowadays widely practised also in the West (for example yoga), focus on working on these 7 Chakra points.

As mentioned in the introduction of this short paper, even though there are no scientific and irrefutable proofs confirming the existence of these Chakra points, we should accept without questioning the great findings which are the result of careful observation by peoples who have been ahead of us for millennia. These people did not have the pills and medicines we have today (which often result in harmful side effects), instead they developed their 'medical' culture by passing down from one generation to the next their knowledge of what was harmful and what was beneficial. Both in terms of food and drink and as a way of life in relation to their natural habitat.



The pictures above show the position of the 7 Chakras in the human body. The picture on the left is a Nepalese painting from the XVII century. (source: Wikipedia).

MENS SANA IN CORPORE SANO (or the mind's sanity and the body's health).

Modern society, the so-called Western society is increasingly searching for wellbeing and health, and this is a logical consequence of a growing uneasiness and people's increasingly precarious physical and psychic health.

For almost twenty years I have been following with extreme interest the thorough theoretical and scientific work of prof. Mario Pianesi, pioneer of Macrobiotics in Italy. Thanks to his advice my family has in fact greatly benefitted, particularly in terms of health. As he often reiterates, human beings should never forget that they live basically thanks to the Environment and three elements in particular: air (which we breathe), water (which we drink) and food (which we eat). To sustain life we could easily do without a myriad of other things. The native populations still existing throughout the world are a reminder of this.

The dreadful spiral (here we are talking of spirals again!) started in the last century to satisfy demand for commodities in everyday life is widening its lethal path undermining the very things that are essential to guarantee life on our planet: air, water and food. Modern society and its communication media have hypnotised mankind to such an extent that we think that in the name of progress we can sacrifice any type of harmony or equilibrium of nature.

After single-handedly overcoming a serious health issue, in the Seventies Pianesi started to study ancient Eastern healing methods through diet; his simple yet ingenious intuitions went as far as to cover all sciences linked to life sustainability on earth. From his initial study of the two opposed but complementary forces that regulate nature he managed to apply this principle, first of all through logic and subsequently through exhausting studies, to almost everything around us.

Nature is balance. But this is not a static balance.

For all its diversity, nature 'tends' towards balance and this sets everything in motion. A simple example would be heat and cold. These are two opposed but complementary 'forces', i.e. at a constant temperature neither heat nor cold would exist. These forces tend however to balance each other out towards an average temperature. Just think how many natural phenomena originate from this simple tendency towards a constant average temperature which, due to numerous other natural factors, will never be achieved.

Mario Pianesi spent most of his life trying to identify these opposing but complementary forces within our body and to understand how they interact with external stimuli (for example with air, water and food). Just to give a glimpse of the tip of the iceberg that are his studies, we could mention the acidity and alkalinity of the blood.

As science tells us, our blood's pH is approximately 7.3, which means to say slightly alkaline (pH 7 would be neutral). This value applies to the blood of all humankind. If we were to ingest only acid or very acid food (such as food and drinks with a high sugar content), thanks to its 'sensors' our body would initially try to compensate (balance) this excess of acidity which would result in our blood's acidity level being much too toxic for our body. How is this possible? By using the mineral salts (alkaline) present in our body to lower the acidity level. Due to the survival law that is 'programmed' in our DNA, our body would constantly try to achieve a balance between acidity and alkalinity until ... our death. Before then however our body would be progressively demineralised, our bones would lose consistency, our teeth would decay, our hair would weaken, our blood would become anaemic, our skin would deteriorate, our nails would show white spots, we would feel a general weakness, cold, we would catch infections, develop leukaemia (which is an illness of the blood), etcetera. This is what would happen as a consequence of a constantly acid daily diet.

The same principle can be applied to other opposing 'forces' which heavily affect our health, such as the ratio between sodium and potassium, where the optimal 1/7 ratio could be heavily unbalanced by food such as potatoes, peppers and tomatoes (the Solenaceae).

Today scientific experimentation of Pianesi's MA-PI diet has achieved extraordinary results both on diabetes mellitus (an illness which, according to modern medicine, is incurable) and on other serious diseases. For these achievements and for all his studies and projects Pianesi was given dozens of awards and recognition

not only in our country but also in other countries of the world where his studies are now also being tested by governmental organisations .

As I mentioned above Pianesi's studies were not restricted to food science but in the last years also covered what we call the environment. For example, thanks to the studies carried out on seeds and plants and their relationship with their habitat the flora has been restored in areas which had been totally dried out by cultures through an extreme use of chemicals. How was this done? By simply sowing seeds or planting plants in harmony with the surrounding environment. This means that, thanks to their opposing but complementary 'forces' a thriving vital cycle was triggered where the flora had been previously eradicated by man and his mistakes (a small pond has even appeared!).

After all the sustainable development conceived and realised by Pianesi focuses on rescuing the environment by means of natural agriculture (MA-PI Polyculture) which, among other things, allows for a healthy and balanced diet (the 5 MA-PI diets) resulting in a healthy population and, in economic terms, actual energy savings and increased efficiency.

Like our forefathers Pianesi was and still is today more than ever a keen observer of nature and its manifestations: unlike what happened in the past however, I feel I can confidently say with results on hand that he has understood the 'mechanism' of the main natural phenomena.

A huge thank you to those who, in these last few years, have led me to approach the observation of nature and its mysterious phenomena. In particular I would like to thank engineer Albert Rabestein, professor at the Centro di Terapia di Sonido y Estudios Armónicos of Buenos Aires, doc. Mario Pianesi, pioneer and undisputed luminary in macrobiotic science in Italy, Guido Andreoli and Ari Lusenti for having introduced me to sound therapy tools, Pier Luigi Ighina for having discovered the magnetic atom, professor Ernst Hartmann for his studies of pathogenic knots and ... Wikipedia for making me save much time in my research!