Akira Pena
Globe Institute
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The Father of Acoustic's
Forgotten Sound Experiment of Life's Blueprint

Few know of the German physicist and musician, Ernst Chladni, who made tremendous contributions to the field of acoustics. His discoveries include the calculation of the speed of sound in various gasses, invention of and enhancements to various instruments, and visible sound. For these reasons, he was nicknamed the "Father of Acoustics." However, it seems like one of his experiments remains underrated though it exposes some secrets of how our Universe was created. That undervalued experiment is the 2-dimensional sound frequency patterns that form with sand on a vibrating plate. These sacred geometric patterns form naturally with pristine order when triggered by a specific frequency giving us insight into what is heard and not seen. Astonishingly, some of the patterns correlate with patterns found in nature. This sounds like a blueprint to the design of nature and life. Yet, despite Chladni's groundbreaking research of the patterns and his successful European tour of pattern demonstrations, it appears that the 200-year-old discovery has been somewhat forgotten or left incomplete, leaving Chladni with only a prominent nickname and the world with nothing more. We should be asking far more questions about this experiment, connecting all frequency patterns to everything natural, and most importantly, figuring out how this information will help mankind. Perhaps the future of the world is working with the benefits of seeing sound frequencies to understand how it impacts our Universe. Continuing Chladni's research is necessary to further explore how life's blueprint can be utilized to understand those impacts and enhance our Universe.

Frequencies, the Law of Resonance, & Cymatics

Many have heard the famous Nikola Tesla quote, "If you want to find the secrets of the universe, think in terms of energy, frequency and vibration". According to the law of resonance, everything in the universe - from objects to individuals and even thoughts - is in a constant state of vibration. This natural frequency oscillates even without a driving force. Essentially, this principle explains how similar vibrations tend to resonate with each other, amplifying and attracting more of the same energy. When triggering an object to vibrate, the vibration will be the frequency of the applied force. A stronger vibration can transform a weaker vibration, as well as be destroyed.

Vibrations are also sound frequencies. Sound frequencies refer to the rate at which sound waves vibrate per second. This rate is measured in Hertz (Hz), named after the German physicist Heinrich Hertz after discovering radio waves. Though radio waves are electromagnetic, sound waves are mechanical and need a medium such as solid, liquid, or gas, in order to transport its energy from the source to the observer. Different frequencies produce different sounds, and our ears can detect sound waves ranging from 20 Hz to 20,000 kHz. The upper hearing limit in average adults is around 15-17 kHz. Human ears

are sensitive in certain frequency range sections. For example, human ears are less sensitive to frequencies under 100 Hz, which are bass frequencies, and sensitive to higher frequencies around 1-6 kHz. Animals can hear varying different frequency ranges, for example, a dog can hear up to 45,000 kHz and a cat 64,000 kHz. Producing sounds vary as well. Instruments produce sound at varying frequency ranges. The buzzing of a bee is 216 Hz and whales tone at 8 Hz.

Everything is a vibration. And through the law of resonance, we can explain why sound frequencies have an impact on us. For example, when two things are vibrating at the same frequency, the frequency becomes louder. Since the law of resonance also states that stronger vibrations can transform, or destroy weaker vibrations, it's plausible to say certain frequencies must trigger responses in us and the Universe biologically from the point of creation and beyond. And it does. Sound is not only audible for our ear's perception and enjoyment, it is a tool that has the capability of creating, transforming, and destroying energy more than what we know. According to the many studies of sound's impact around the world, frequencies can bring back the memory of dementia patients, improve the growth of crops in the fields, levitate and liquify solids, *tune* a person back into a stable peaceful condition by removing stuck energy, and even destroy cancerous cells. Using sound for benefits is an ancient practice. We can hear and feel these frequencies. However, not many know that they can be seen.

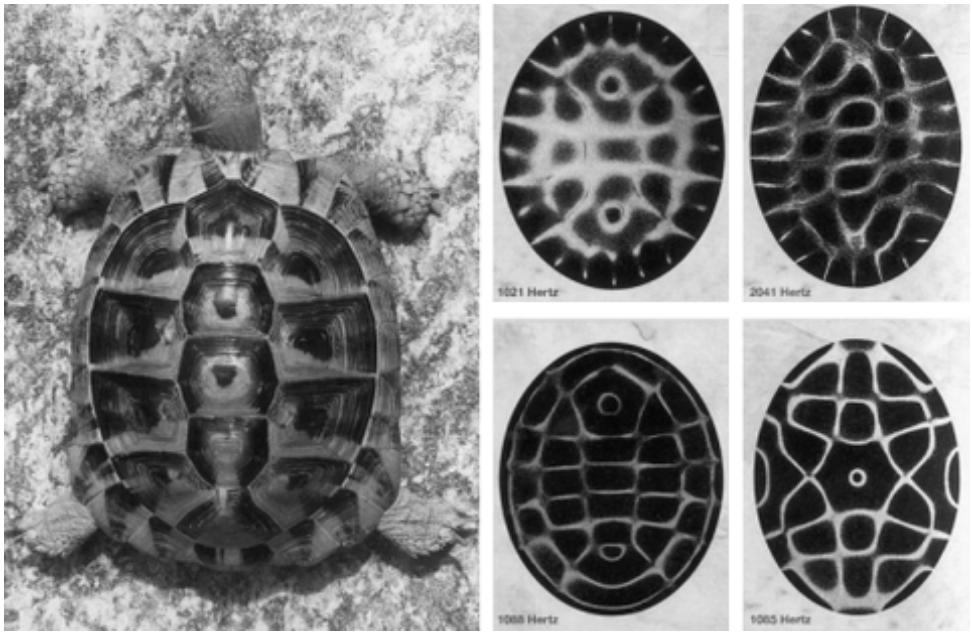
Cymatics is the study of visible sound and the term was first coined by Hans Jenny, a Swiss physician and scientist in 1967 (*kyma* meaning "wave" in Greek). In this case, sand cymatics show sand forming intricate geometric patterns on a metal sheet vibrating at a certain frequency. These patterns are referred to as "Chladni patterns" after he slid a violin bow down the side of a metal sheet topped lightly with sand. Though cymatics can be seen in water, bubbles, styrofoam and more, the highlight of Chladni patterns is the ability to stay visible on the metal plate after the frequency is no longer vibrating. It becomes a bit more tangible and straightforward. Each of the Chladni patterns are key to helping humans understand why and how we all come from sound.

The Father of Acoustics & the Forgotten Sound Experiment

Ernst Florens Friedrich Chladni was born on November 30, 1756 and died on April 3, 1827 in Wittenberg, Germany. His experiments and calculations helped establish the fundamental principles of acoustics. In addition to his scientific pursuits, Chladni was a talented musician who played many instruments including the glass harmonica, an instrument he invented that produces sound by rubbing wet fingers on the rims of glass bowls. Evidently, Chladni's passion for music and physics intersected in his study of acoustics, and he believed that understanding the science behind music could enhance the art of composition. For example, his research allowed for the development of new instruments and the improvement of sound quality and resonance in existing ones such as the violin. It was his work with the Chladni patterns that gave him ultimate success and the endorsement of French Emperor Napoleon Bonaparte, who commissioned the translation of his published discoveries in 1809.

Though Robert Hooke, an English physicist, first observed nodal patterns on a flour-covered glass, Chladni's experiment opened up a doorway to a deeper conversation about frequencies and resonance. A Chladni plate can be in the shape of a square, circle, or triangle, and demonstrates 2-dimensional standing wave patterns. These patterns are made up of nodes and antinodes. The nodes are stationary while the rest of the plate is vibrating. The sand will vibrate away from the antinodes and gather at the nodes to create nodal lines that form complex, symmetrical patterns over the surface of the metal sheet. Basically, sand helps visualize the geometry of frequencies that vibrate throughout the plate.

The geometric patterns are sacred at its core and have recently been matched to similar patterns found in nature in the last century. Alexander Lauterwasser, a German researcher and photographer, based his work on both Jenny and Chladni's experiment and found the back of a turtle's shell can be matched to the frequency pattern of 1021 Hz, 2041 Hz, 1000 Hz, and 1065 Hz. (See below image from Lauterwasser's research).



It is also found online that the pattern of a leopard's fur can be matched to the frequency of 10,101 Hz. The biological process in which order is created in a developing organism is called *morphogenesis*. This was studied by mathematician Alan Turing in 1952 and he concluded these patterns were created by reaction-diffusion chemical systems supported by a mathematical formula. Yet still, there is no explanation as to *why* these shapes take particular order and form and *why* they can be matched to cymatics. What is nature trying to tell us?

Not much is widely known about visible frequencies. As mentioned, we hear and feel them everyday. Yet, why does the world still not know what they look like and have not extensively connected visuals to it? We have only seen Hans Jenny, Alexander Lautnesser, and a few others continue on Chladni's work without the grand scientific support of the world it deserves. These experiments seem to be falling on deaf ears (pun intended). If this experiment is not as forgotten, then the importance of the experiment is. The Chladni patterns have the potential to make a blueprint of the Universe. Instead of frequencies being spoken about with only an audible reference, a visible reference can be shown along and can connect the dots to further understand the invisible impacts of it. There are so many questions to be answered and a lot of work to be continued. The stretching of the walls surrounding this discovery should be driven by the true belief this information will help mankind. In the future, there will be no more doubt about the capabilities of sound and resonance. There should be no confusion that the unseen shapes our existence. There should be a future where we return to the source of it all, to explain the point of creation, and beyond.

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