Gina Renee Fontana

Cymatics Paper (unfinished)

"In attempting to observe the phenomena of vibration, one repeatedly feeling a spontaneous urge to make the processes visible." (Jenny 21) Musician and physicist Chladni (1756-1827) laid the foundation of acoustics, the study of sound. He experimented by striking a violin bow against metal plates sprinkled with powder. As the plate vibrated by the movement of the bow, the powder moved into geometric patters. He was able to observe vibratory movement of the powder. (Jenny 21) He came to make the vibration processes visible. He came to the conclusion that all sound affects physical matter. (Grant) Following this scientist in experimental acoustics was Hans Jenny.

Hans Jenny (1904-1972) a Swiss doctor, artist, and scientific researcher who coined the term *Cymatics*. Cymatics is the "process of visualizing sound," or the study of how vibrations make and influence shapes, patterns, and movement. (Grant) Jenny conducted experiments where he observed the affects of powders, pastes, iron fillings, and viscous substances on vibrating metal plates or membranes. He used oscillator machines (pictured below) to generate different frequencies to vibrate the plates and membranes.

(Photo from Google photo search "Cymatics" http://irevolution.wordpress.com/2009/09/20/cymatics-to-crisis-mapping/)

To look at the vibrations of the human voice Hans Jenny developed the tonoscope. "This is a simple apparatus into which the experimenter can speak without and intermediate electroacoustic unit. Thus vibrations are imparted to a diaphragm on which sand, powder, or a liquid are places as indications." (Jenny 63) The powder, liquid or whatever medium on the flat plate is used to make the vibrations of sound visible.

Some vibratory effects were: the creation of forms and figures, patterns, and circulatory movement. (Jenny 74) The type of vibration or frequency affects the shape or pattern. For example, as the frequencies increase so does the complexity of the pattern. (Grant) Cymatics has also been used to create forms in music. I'm still trying to understand this. The visual effects of the iTunes player come to mind. The shapes and patterns go with the beat of the song and change with different pitches. Cymatics shows that sound has form and can affect form in matter. (Grant)

Some photos in the Cymatics book by Hans Jenny, had similarities to thing in nature. After completing the book, it took me a little while articulate what I was "seeing." I had to step away from what I was reading to come to realizations on my own that I could articulate.

Here is a poem to possibly create some imagery on "the bigger picture."

I got to thinking of the Big Bang.

This one singular moment there was one single sound.

This one sound includes every sound. The theory of harmonics states that all sounds are in one sound, the wave passes through the frequency, in a patterned motion.

Particles formed from the most elemental quarks to the macro scales cosmos.

Electrons rotating around atoms made of protons and neutrons, in a rhythm, making music.

Patterns similar to the rotation of the planets around the sun. Oscillating and vibrating.

The creation of the universe came from the first note..the first vibration

My brain has been exploding universes

Vibrations and music

Lets make beautiful patterns and music as we flow in harmony with the universe

Bibliography

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