

# **Music and the Midnight**

**By: Nathan Lefkoff**

## **Abstract:**

Howe's Midnight: I can imagine it being written by her all at once, alone and lucid in the middle of the night. Surrounded by bed hangings, scraps of herself and her past and the past of the world, she stared with eyes wide open into total darkness. When the Midnight is pitch black, it is a mirror, a wreck to dive into that jostles the senses and the mind and the heart and makes us as desperate and as fiendish as dogs to grasp and clasp and smash together the fleeting fragments echoing ghosts within ourselves and to squish them into something concrete that in the end crumbles in our hands like dry bread no matter how fast we scramble or how hard we try and cry out, like dogs. Dogs in the night, how(e)ling at the darkness as if there were never a moon or stars in the sky. In darkness, the light of the mind becomes clearer.

This paper is an exploration of sound science and current artwork that I have produced as well as a critical analysis of the artwork of my past. Where do my passion and history intersect with the music I make? How have the sounds of nature influenced my music as well as that of the culture I am a part of? I also delved into the idea of music as an evolutionary tool for self-expression and survival; a way for us to live with our Midnights without being blinded by the darkness.

To me, the Midnight that fuels Susan Howe's work lies within us. It is an internal darkness from which light and music arise. It is the part of ourselves that we sense but cannot fully comprehend. It is fluctuating, untranslatable. The Midnight is the weight of self-awareness; the not knowing, the torment, the necessity of art, of music.

# Scare Quotes

## Basics of Sound:

To put it simply, sounds are series of vibrating waves that travel through air or other mediums that can be sensed or heard by organisms and their specialized sensory organs. Sound travels through dry air at an average of 768 miles per hour; also known as the speed of sound. A sound wave or series of sound waves have certain defining properties including decibel, frequency, pitch, timbre, amplitude, duration, and envelope (B. Krause 2012).

**Decibel:** Decibels are used to describe degrees of loudness. Although debated, many consider zero decibels (0dB) to be the threshold of human hearing where sound just begins to be audible. Humans will typically start to feel pain around 120dB although our dynamic range is greater than that. Too much exposure to loud sound waves will cause hearing damage that, if sustained, can lead to deafness.

**Frequency:** When regarding sound, frequency states the number of cycles per second of a sound wave. Frequency is measured in the unit of Hertz (Hz) and the higher a sound is, the higher the frequency and the greater the number of Hertz. For instance, a middle “A” note on a keyboard is measured at 440Hz while the lowest “A” on most keyboards is measured at 27.5Hz. The highest note on a typical piano is about 4,186Hz. The average human has a range of hearing from 20Hz to 20,000Hz although this does vary with age and from person to person. Most animal species fall somewhere in the range of human hearing while others, such as whales and their

relatives, exceed it tremendously. The terms “infrasound” and “ultrasound” relate to sound that are below and above the dynamic range of the human detection and in turn cannot be sensed with our naked ears (Coryat, K. 2005).

**Pitch:** Pitch is related to frequency in that it describes the exact notes that are being produced by a certain frequency. For example, the chromatic scale is made up of twelve evenly spaced pitches: *A-A#-B-C-C#-D-D#-E-F-F#-G-G#*

**Timbre:** The timbre of a sound relates to the voice that is producing it. A violin, for instance, has timbre that varies greatly from that of a trumpet or a dog or a songbird even if all of the voices are producing the same frequency (Krause, B. 2012).

**Amplitude:** Amplitude can be defined as the loudness of a sound and is measured in decibels

**Duration:** Duration is simply a measurement of how long a sound is audible after is produced, measured in time.

**Attack:** Attack is the collective change that occurs within a sound before it reaches its steady-state intensity (Coryat, K. 2005).

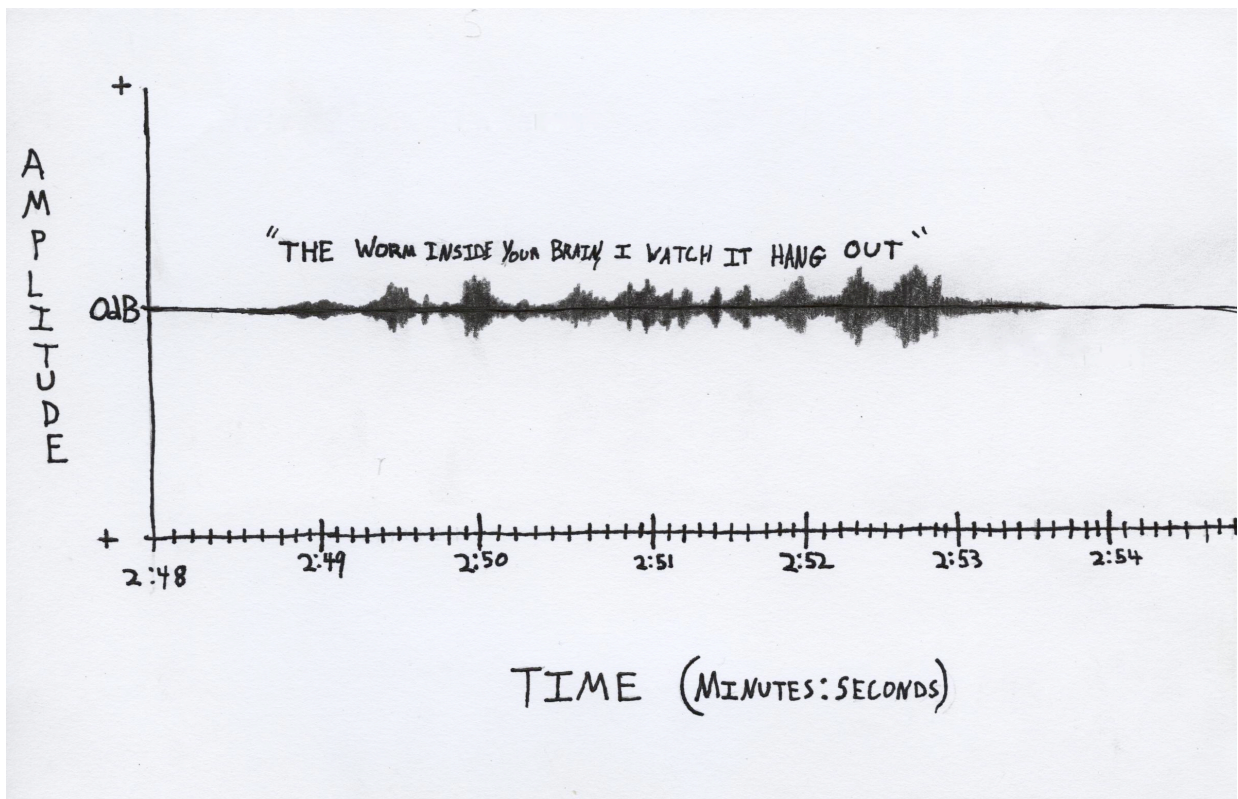
**Sustain:** The steady state of a sound at its maximum intensity.

**Decay:** The rate at which a sound fades into silence.

## Spectrogram:

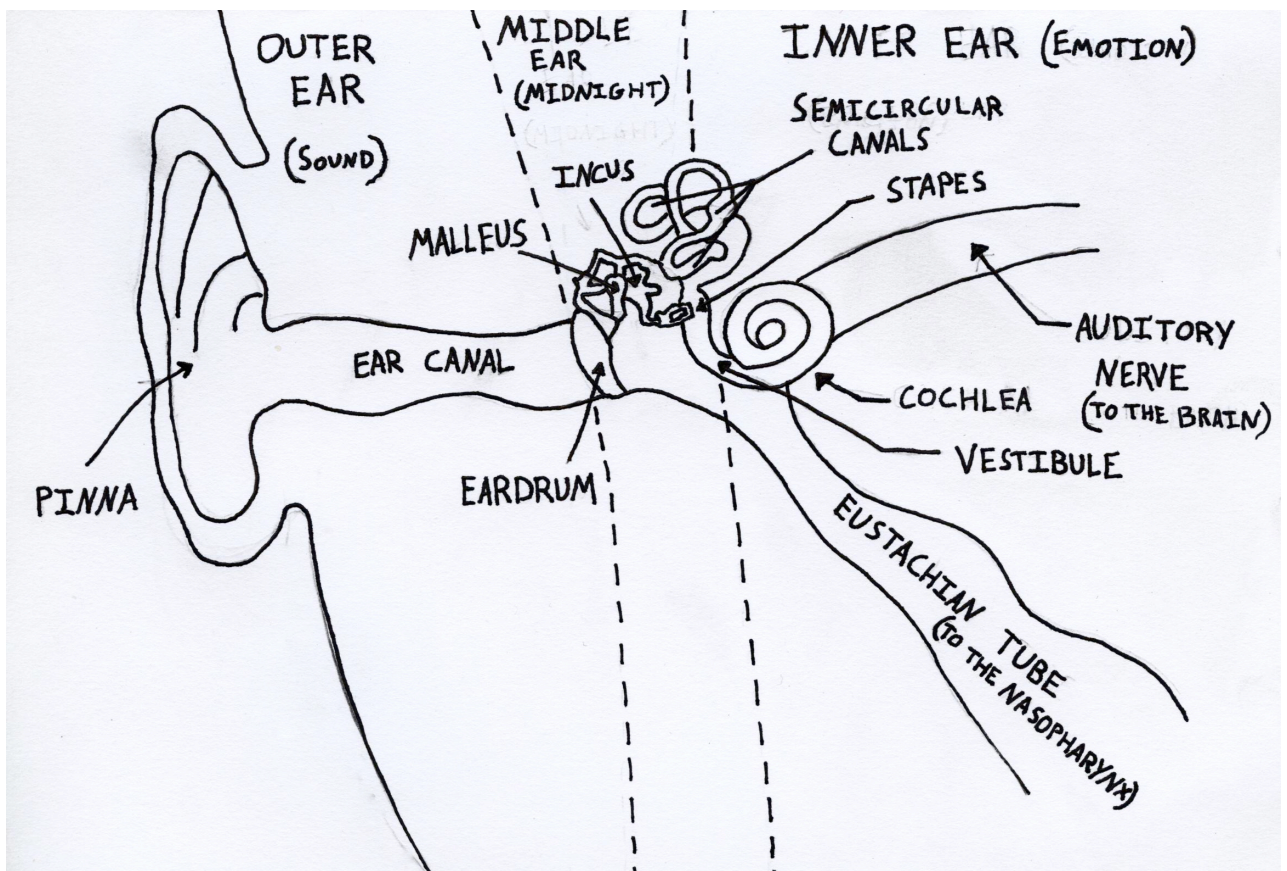
We typically display sound visually by utilizing the spectrogram. A spectrogram is a sort of single-quadrant graph that exhibits sound as a bold line with fluctuating width. The y-axis of a spectrogram stands for volume while the x-axis represents time (Coryat, K. 2005). Spectrograms can often take on beautifully intricate shapes that, in the case of a human singing voice for instance, translate passionate bursts of sound and expression. Here is an example of a fragmented spectrogram that represents a piece of my vocal track for my song, *The Farther I Roam*:

***The worm inside your brain, I watch it hang out***



## The Ear:

In humans and most mammals, sound is perceived through two of the most amazing organs of our bodies: the ear and the brain. These organs are unbelievably adapted for translating loose sound waves flying wildly around us into conscious perception of the sounds themselves (Coryat, K. 2005). Aside from ears, many species utilize other organs such as tympanic membranes, tiny hairs, and antennae to sense sound. The ear captures pressure-based sound waves that travel through air, translate them into fluids, and ultimately transform them into electrical that our brains can interpret. Here is a diagram of the human ear:



## **Soundscape:**

A soundscape can be defined as a reference to all of the sound that reaches our ears in a given moment. In the book *The Great Animal Orchestra* by Bernie Krause, he describes soundscapes as the “sonic fabric” of our surroundings. The significance of soundscapes is hardly realized by the general human population and in turn, soundscapes themselves are rarely consciously recognized at all. Scientists use the soundscapes of areas while surveying for aspects such as the population of a species or the overall health of an ecosystem. Soundscapes act as acoustic mirrors in that they represent a vast portion of the aspects of an environment; be these aspects species of birds and insects, the presence of wind, heavy, or resonate geological formations. When examining a man-made soundscape, the aspects represented are much different. For instance; the presence of war, social oppression, prosperity, and comradery.

## **Geophony: Earth’s Song**

Geophony was the first source of sounds on earth and has a massive influence on the audio performance of all the creatures on our planet. It is extremely likely that the first sound ever sensed by an organism on earth was produced from water. From that moment, the evolution of all sentient beings on our planet was impacted by the presence of geophony and that phenomenon continues today. One of the most interesting aspects of geophony that I came across in my research is that of wind. The wind’s voice is completely silent. The only way to audibly sense the

presence of wind is to hear its interaction with other objects such as trees or canyon walls.

Prior to the first simple animals on earth six hundred million years ago, the only sounds came from water in streams and lakes, wind traveling around the globe, volcanic eruptions, storms on land, and all the other non-living sources of sound that are still present in our world today. With the increasing company of more complex organisms, the sounds of earth started to change and a new sonic order began to establish itself.

## **Biophony: The Sound of Life**

Biophony is the most intricately diverse and miraculous source of sound on our planet. *Every living thing* generates some sound through interaction and manipulation of the world around it. The mouth of the anemone, the blue whale's song, the cries of primates, the journey of a plant as it reaches and bows for the sun; all of these produce a unique sound with different variations of the components of sound mentioned earlier.

One of the most interesting aspects of world's biophony is the idea of bandwidths within environments. In the case of radio stations, each one has a certain bandwidth where it resides and can be picked up and heard by instruments that receive their signals. When we turn the channel dials of our car radio systems we know that what is playing on 107.9 will be different than the sounds coming from 107.7, 106.5, and so on and so forth. The voices of the animal kingdom have evolved to fit a similar level of organization. When two creatures are producing



similar sounds with like timbres and frequencies their voices compete, become muddled, and are often cancelled out completely through the properties of sonic physics. Giraffes, for instance, were once thought to have no vocalizations but have recently been discovered to produce infrasonic sounds that are undetectable to most species in their environments. These giraffe vocalizations have evolved to fill an empty space in their soundscapes where the species can communicate with each other without the interruption of other creatures (Krause, B. 2012).

This idea of bandwidth has led me to ponder upon the empty space that my art takes up and is heard within. When I post a song onto the internet and make it available to billions of people I am, in a way, competing for a spot in the flurry of musicians who create their own unique sound and space through which they can express themselves. What is my bandwidth? How does the environment around me detect or not detect my presence as an artist and my emotional experience as 1/7,000,000,000 of the human race?

## **Anthrophony: The Human Voice**

The sounds our species make are an extension of one sonorant family that sings and cries and wails and roars. Throughout our evolution into the modern world we have gradually strayed from our awareness of the soundscapes of the natural world from which we once had the instinctual ability to extract practical and spiritual messages and meanings. In the modern era, we sense the world around us primarily through sight. Even when we talk about sounds we often use language such as “I see, what you are trying say”. I find it tragic to think of a beauty we no

longer sense: an awe-inspiring, constant and collective performance from an orchestra in which all life is included. What does it mean for the human race that we are deaf to this splendor?

Although we may have digressed from our ability to listen, we have come incredible distances in the diversity of the sounds we make. Scientists speculate that we began making music tens of thousands of years ago—with one of the oldest known instruments discovered being a bone flute found in the caves of Germany dating back to over 40,000 years ago (Krause, B. 2012). Older still is the instrument of our vocal chords, which have been influenced by our surroundings since the dawn of man. In fact, music itself stems from our early observations of the natural world—the cries of mammals, the wind over flute-like reeds, and the calls of songbirds whose notes often follow the pattern of the pentatonic scale (Krause, B. 2012). “Biomusicology” is a term coined by Nils Wallin, a Swedish scientist, who reflected on the idea that we as humans were likely singing before we were speaking, and that our song was mimicry of the biophony around us. Where the notes of birds and the stridulating of crickets’ wings and legs were once our primary inspiration, our music now reflects more heavily the sounds of city streets, war, and other human creations that fill our lives today.

One major question still remains: What is the evolutionary advantage of music production in humans? The MIT cognitive scientist Steven Pinker is known to have dismissed the idea of music as “auditory cheesecake”. His idea is that, in the same way we have evolved to crave fats and sugars, we have evolved a liking for the components of music—sound in general—as opposed to the concept of music itself

(Krause, B. 2012). Others however, including Bernie Krause, believe that music has provided us with huge evolutionary advantages. These advantages include sexual attraction, the sedation of fear, and the strengthening of community that happens during group music making.

My own speculation on this question has brought me to a concrete conclusion and belief. We as humans have an incredible capacity to torment ourselves to the point where we are driven to perform acts that are disadvantages to the progression of our species as a whole such as suicide or the killing of others. We once were animals, uttering and expressing all that came to mind. Now we have become alienated; strange beasts that saturate in our senses of self. How can we sense the bandwidth? How can it sense us? Our modern culture has become so separated from the world our ancestors once lived in and listened for. Those early humans were interwoven with the systems around them. They were part of something larger that we now long for but do not know. Perhaps they were better off than us. Perhaps they found themselves in the world around them.

Self-awareness is a burning flame that gives off hot steam as it persists in our hearts. We need methods of releasing this energy or else it will burn us from the inside to push us violently like steam engines screaming and running blindly. Music, and perhaps all art in general, is likely an evolutionary advantage in that it creates an outlet for us to express our inner turmoil, fears, and isolation, which would otherwise send us into states of decay. We are either songs being sung or sounds fading into silence. I have been the song and I have heard the rises, the falls, and the fading away.

# THE MIDNIGHT

The Evergreen State College campus was recently the site of a terrible tragedy. A friend of mine (I will call him “D” out of respect and confidentiality) committed suicide in his dorm room with a gun. D, a musician like me, was using heroin and had been battling his addiction since the time I met him. On the night he shot himself, I spent time in my room playing “Working Class Hero” by John Lennon, a piece about the impossibility to thrive in our current social structure. The entire campus mourned and is still mourning for the loss of a kind friend, a gentle smile, a passionate artist, and a light to the world.

I wonder what sort of midnight D was going through as he loaded his gun and raised it to rest on his head. What song was playing that he could not sing or speak or draw out or move to? I wish I could have heard it to let him know of someone listening. In an interview of Neil Young that I once listened to there was a question asked that was something along the lines of, “Where do you think you would be if you had never started playing music?” Neil thought for a while and then spoke; explaining that he probably would have killed himself a long time ago.

Sometimes when we express ourselves we sing out but find only some sick wall of sound that mutes the voice and puts stones into stomachs. This is what the human bandwidth has become: a soundscape of people talking without knowing how to listen, a sad swarm of sound that seems untranslatable and so utterly apart. We have moved so far from the voices of our origins; the canopy, the great white plains, the dark night and the dawn chorus.