

The Sacred in Science

Session 4 – *Sound*

<http://www.redshirt.org/longer-writings/courses/the-sacred-in-science/>

1. **WHAT IS SOUND?:**

Is sound a physical occurrence or does it take someone or something non-physical to hear it?

“To see a World in a Grain of Sand
And a Heaven in a Wild Flower
Hold Infinity in the palm of your hand
And Eternity in an hour” (Blake, 1757 - 1827)



- Meditate on SpaceTime. Ask yourself, who is doing the listening? Listen inside. Is it ever quiet?

- **Take Away Mindfulness Demonstrations:**



- Sound in Air (Meditation Bowl)

- Sound in Water (Soda Bottle in Water)

- Sound Waves: Slinky

- Singing Wine Glasses

- Euler's Disk

- Consider **Making an “O/A”** - *Observing vs. Analyzing*

2. **MUSIC:**

“The heart is a thousand-stringed instrument That can only be tuned with Love” (Hafiz & Ladinsky, 1999).

There is music in the air. It is made by the wind and the creatures.

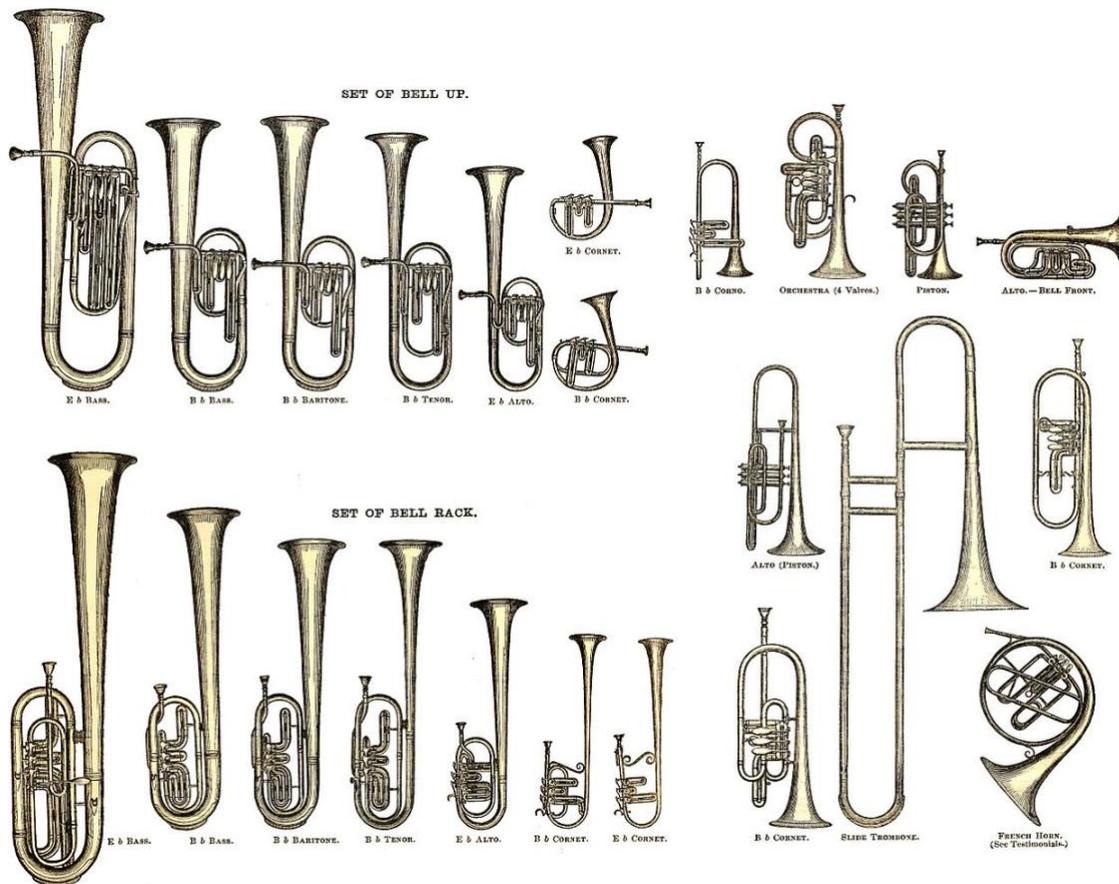
Does the wind make sound or music?

Listen to the music of the birds.

If a note of music did not pause for silence or variation, would we hear it?

- Take Away Mindfulness Demonstrations:

- Simple Stretched Wire
- PVC Pipes as a Percussion instrument / as a Trombone
- Stringed Instruments - Whamola
- Consider **Making an “O/A”** - *Observing vs. Analyzing*



3. SOUND AS SIGNAL:

- What do humans and animals do with sound signals:
 - with voice
 - with hands
 - with objects
 - technologically



- **Take Away Mindfulness Demonstrations:**



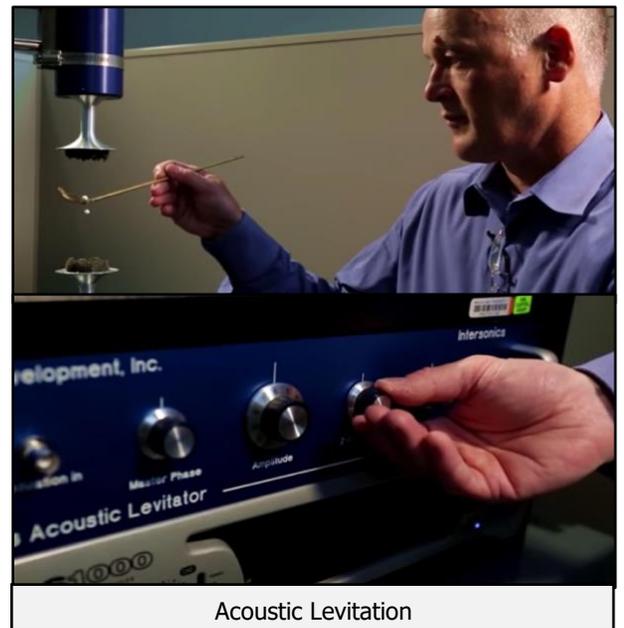
- Enter a wood. Hear the birds send signals of the newcomer. Wait for them to return to their signals of peace (Young, Haas, McGown, & Louv, 2016, pp. 336-340).
- What sounds do other animals make as signals?
- Consider **Making an “O/A” - Observing vs. Analyzing**

- <https://video.nationalgeographic.com/video/101-video-shorts/0000015e-2f8a-d466-a57e-bf8a86ab0000>
- <https://flypaper.soundfly.com/discover/5-unique-ways-animals-communicate-through-sound/>

4. **SOUND AS A SHAPING FORCE:**

Cymatics - the study of geometric forms created by sound.

- The Human Ear
- Cymatics (vibrational phenomena): See the work of Hans Jenny and Alexander Lauterwasser
<http://www.cymaticsource.com/>.
- Ripples on the Pond
- Shapes of Animals & Plants
- Acoustic Levitation
Myths of small peoples singing while working “Whistle While You Work”



- Using Sound for:

- boiling
- drilling
- cancer cells
- healing by spraying a saline solution over a wound

- **Take Away Mindfulness Demonstrations:**

- Chladni Plate

5. *SYMPATHETIC VIBRATION:*

Birds call to each other and answer as if in sympathetic vibration or swings of a pendulum. The branches of trees sway in harmony with each other like many pendula.

- **Take Away Mindfulness Demonstrations:**

- **Tuning Forks**

- **Clocks & Metronomes**

- Consider **Making an “O/A” - *Observing vs. Analyzing***

- **The Human Heart and other Bodily Functions**

Some ancients believed that a harmonious person would live 72 years and would have 72 heartbeats per minute. It was said that the heart was like a pendulum that swung back and forth to make 1 cycle. This cycle occurs with each breath, which is once per 4 heartbeats. How many breaths (or heart cycles) would this harmonious person have in one day?

Plato loved and wrote down many amazing ideas from a time before him when people did not write things down. One idea was that humankind changes consciousness every 2,160 years. This is now called a Platonic month. One Platonic year is therefore 25,920 years (12 x 2,160), which is also the time it takes for one 360 degree rotation of the ecliptic and the constellations. One degree of that rotation is $25,920 / 360 = 72$ years. **Ancients & Numbers**



For a reference to *current writers on the hoped for, next version of humankind*, go to “Good Reading” <http://www.redshirt.org/good-reading/>.

References

Blake, W. (1757 - 1827). *Auguries of Innocence*. Retrieved from

<https://www.poets.org/poetsorg/poem/auguries-innocence>

Hafiz, & Ladinsky, D. J. (1999). *The gift : poems*. New York: Penguin / Arkana.

Young, J., Haas, E., McGown, E., & Louv, R. (2016). *Coyote's guide to connecting with nature*. Santa Cruz, California: OWLLink Media.