Introduction

So far the five senses have been believed to be discrete. Each human faculty performs its own function. Devices have been invented to express and record the senses, for example: a microphone for voice, speakers for sound, camera/video camera for seeing things etc. It is an interesting proposition to meld two senses and pose questions like “can colors be felt?”, “can smell be tasted?” or “can sound be seen?” Successful and impressive attempts have been made regarding the last question if sound can be seen or visualized. By recording tone, pitch, duration, modulation etc. sound waves can be translated into visually significant patterns. This technology is used in audio equalizers and can be seen widely practiced in the audio and music industry today. More and more attempts are being made today to visualize audio that can lend into beneficial audio and speech technology or in artistic expression of sound.

Motivation

The motivation for my audio visualization comes from two papers in the syllabus, namely In Situ Speech Visualization in Real-Time Interactive Installation and Performance by Golan Levin and Zachary Lieberman and The Faculty of Language: What is it, Who has it and How did it evolve? By Hauser, Chomsky and Fitch. The paper In Situ Speech explores the answers to the question “if we could see our speech, what might it look like”. This paper revolved mainly around the aesthetics of human vocalizations. At the core of my audio visualization is the subject of phonesthesiа (also discussed in the In Situ Speech paper) and the psychology experiment conducted by Wolfgang Kohler in 1927 on the visual representations of the words maluma and takete as in the below figure.

Figure 1 Kohler’s 1927 phonesthesia experiment

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1 In Situ Speech Visualization in Real-Time Interactive Installation and Performance by Golan Levin and Zachary Lieberman, Page 1
In addition to the In Situ Speech paper, I was also motivated by the discussions on language in the paper *The Faculty of Language* By Hauser, Chomsky and Fitch. By bringing together the ideas learnt in these two papers, my audio visualization would attempt to find the shape of language. The purpose of doing this is to see if the same words look similar in different languages. By looking at the shape a certain word takes one can look see if the word matches its meaning or is far from it.

**Uses**

This visualization can be used in art installations to see similarities or differences in same word visualizations in various languages. Speech training could be another utility of this audio visualization where users may use this to learn a certain language or polish their enunciations. This kind of visual speech training can be used in many industries where immaculate “speaking” is understood as a skill.