

DECO1013 – Sound Design and Sonification

Assignment 2: Audio Signal Processing for Data Sonification

The two sets of data that I have chosen to sonify for this assignment are the annual number of fatalities caused by car accidents, and the total population for that year, in New South Wales. The data range will be from 1970 to 2009 (since we are currently in 2010, the annual data has not been recorded yet). I collected both sets of data from the RTA website, which ranged from 1908 – 2009, but decided to shorten the time period to 1970's because it was the peak of highest fatalities, and I wanted to sonify the decreasing change whilst depicting the enforcement of road safety in the late 20th Century.

The purpose of the sonification system I have designed is to give people an indication of whether the roads are becoming a safer environment, or just a death trap. Also by giving an alternative insight to this data through sonification, as opposed to simple visuals and text, I am hoping that it will be more engaging as sound is an interesting medium to receive information.

In relation to the results and evaluation of my sonification system, it has made my vision much broader. Because we as drivers are constantly on the road, we never really step back and think about the dangers that are present each time we buckle our seatbelts and start the ignition. By sonifying data like this, I have discovered that the number of fatalities is far larger than I had thought, especially the period leading into the 1980's. From results like this, we can come to the conclusion that road safety was not properly enforced before the 90's, as there were almost 1300 deaths in 1980, that year alone. It also heightens the awareness and points out the seriousness of car accidents, as quite a large number turn out to be fatalities.

In relation to the sound that it is produced and how it is controlled, the number of fatalities controls the pitch of the sound that is being produced. The total population of New South Wales is divided by 1 million, and is then added with the number of fatalities for that year. The result of this data controls the modulation of the output sound, and the rate of modulation increases as the years progress, because the total population continues to enlarge.

I have inserted a spectroscope, which takes the outputs of the two parameters, number of fatalities and percentage of population, and displays the output, x-axis being the frequency, and y-axis being the amplitude. I have also included another data scope, to accompany the audio output visually.

The pitch of the sound increases as the number of fatalities rises, and it gives a sense of danger and eeriness. I was aiming to create this kind of effect, as it makes people contemplate on such tragedies. As the sonification system reads the input data and outputs a sound signal, the pitch of the signal starts to decrease whilst the population number continues to increase. From this result we can see that road safety is filling in crucial gaps as annual fatalities slowly began decreasing from 1303 people in 1980.

Evaluation of project

Initially my project was not working as planned, and the modulation was not implemented correctly. This was a minor concern, but with the help of tutor Mark Bassett, I was able to make the population control the modulation of the sound, which was quite interesting. Below I have included 2 pictures, one of my previous patch, and another of my final patch.

New Patch

Old Patch

