

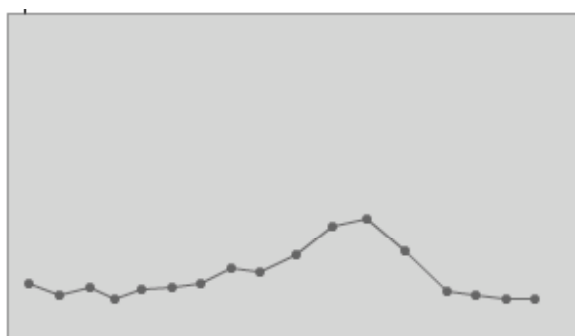
Sound Design and Sonification Assignment 2: Audio Signal Processing for Data Sonification

Data sets can be used in Max/MSP, further more to create interesting sounds in conjunction to the data read. For this assignment, a required set of data is to be researched and used to support this patch. The selected data for this assignment is Number of deaths caused by accidental overdose of opioid [a drug] in Australia and New South Wales from the years 1988 – 2004 [17 years]. Two sets of data has been selected, to show the numbers that NSW contributes to Australia, which is shown to be a shocking amount of the overall deaths due to overdose in Australia.

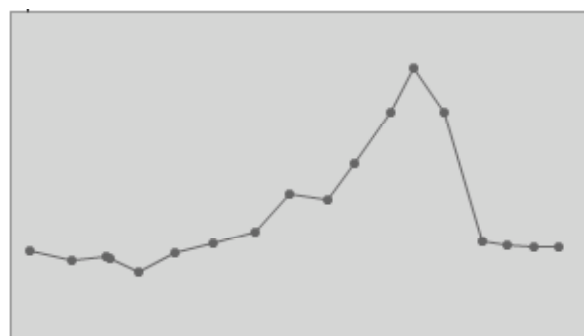
Function

For the basis of the patch in Max, the patches shown in our tutorials [Weeks 8 and 11] was taken to offer a beginning. It was a simple patch that was manipulated to match the data selected, changed into three columns for the years increasing, the overall deaths in Australia and the deaths in New South Wales. The patch unpacks the data into three different columns, which then get separated further into smaller columns.

On the right of the screen, I outputted both the NSW and Australia data to minus the NSW from the Australia data. Australia's deaths less NSW's death leave the total amount of deaths due to accidental overdose of drugs from the other states and territories combined, which show a number that is not much higher than that of NSW. This is to emphasise on the deaths that NSW may be double or even triple one of another state in Australia. I have included two line graphs that show the numbers of deaths and it is clear to see that NSW's deaths account for approximately half of the deaths in Australia.



Line graph of the overall accidental deaths in NSW due to drug overdose



Line graph of the overall accidental deaths in Australia due to drug overdose

On the left, I have multiplied the number of NSW deaths by 5 to give a higher frequency, which is then attached onto a volume slider to allow adjustments to the volume and then outputted to the left ear, when the viewer is listening. Allowing the number to be higher in frequency, will give a higher pitched sound on the left, and as the number changes from high to low, the tone will get higher or lower. On the contrary, I have divided the number of

deaths overall in Australia by 3 to produce a lower number for the frequency which creates a more dull, flat sound on the right ear to counterbalance the higher pitched sound heard on the right. Therefore when listening to this patch, one ear will hear a higher pitched sound whilst the other hears a more low. A rhythm is then created in high and low pitch as the data is read through the increasing years.

As stated in the patch, I have provided sliders for the viewer to change the volume of their sounds as they please, though advised to have one higher than the other, as the aim is to hear both sounds, and hear the differences, not to have one sound drowned out by the other.

Purpose and Evaluation

The aim for this max patch is to test for the different melodies in high and low frequency [which is somewhat harmonised] as the years increase, and as the number increases in the data set provided, the sound will be created to such a high pitch that not much of a “tune” is created.

After hearing the patch, a majority of the aim is achieved, however because of the limited years in the data the melody repeats itself quite quickly. I believe that if there were more data, a more interesting tune or melody will be rendered from this patch, though even if 17 years of data, the sound produced is already quite a pleasing melody. The sounds increase in frequency and drop in frequency due to the data as the number of deaths due to overdose in drugs have been decreasing or increasing. Of course, having increased numbers of deaths is a negative outcome; therefore the sound will be a high pitched and somewhat unpleasant sound whereas having decreased numbers will produce a more pleasant sound. The sounds definitely do aid in the awareness of the data, looking at the numbers didn't make me realise the drastic difference in some years, but the sound aided in helping realise that there were major influxes in the mortality rate – which may bring one to think about how the influx became so dramatic.

Also, included in the patch are signal oscilloscopes to show the different frequencies hit from the NSW data and the Australia data, which can be quite dramatic at times. In addition, line graphs are included to provide a clearer showcase of the figures. The results are somewhat outrageous, to see that NSW has such a high death rate due to overdose in drugs compared to the other states, and this is an awareness that I wanted to emphasise on with this patch.

In conclusion, Max/MSP is very convenient, and after a few experimentations and tweaking with other patches, the ideal patch to match with the data selected [Number of deaths caused by accidental overdose of opioid in Australia and New South Wales from the years 1988 – 2004] was created to produce sounds from original ones – as the input of different data sets was able to distort or create enjoyable sounds.