

4-channel sonification of EEG-data

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My ambition with this artistic approach is to show the room of the brain with the cerebral processes as a room of sounds. In other words, to listen someone's thinking.

The EEG-data has been read approx. every 5th number resulting in broken line of data which is better for musical reasons in order to have bigger intervals than smaller steps or glissandi. Although as a lot of data is eliminated the shape of the graph from the data and the resulting "melody" becomes clearer.

Each channel of the EEG-headset has its own representation as a channel in sound. The forehead channels have more higher frequencies and the occipitals more lower frequencies. The stereo panorama also depends on the channel points of the headset as well.

The raw data sounds are made only of sinusoidal waves. The resulting accords demonstrate clearly the interrelation of the brain areas. When the accords are changing it often seems to be in a 3/8 rhythm and the brain seems to dance. Higher brain activities are more melodic or sound as a sudden higher sustained note. The left hemisphere sounds are much lower frequencies.

The Emotion data are composed under sound design for artistic reasons. 'Excitement' is represented by more vibrant sound, the drone stands for 'boredom' and drone with slow rhythm for 'engagement'.

This 2-minute piece is a cut-out of the time section from 13:52:30 to 13:54:30 with unchanged tempo. The piece starts with the emotion-sounds then at 0:30 the raw data is producing more "natural based" sound. At 1:30 gradually both sound-sections are mixed together.

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