

Psychoacoustics

Mireia Sospedra
Tutor: Biel Ballester



Psychoacoustics is the study of sound perception and the ways in which it affects humans. In this project, the connections between music and humans were explained from the basis to the newest studies and experiments.

Since both the ear and the brain are involved in the listening experience, the basics of the hearing process and the human limitations of sound perception needed to be explained to understand the real life applications of psychoacoustics.

The second part of the project is based on humans' reactions to music. The human ear needs the brain to decode and give a meaning to the acoustic signals that are recognized. All this processes convert a simple sound to something recognizable such as an emotional effect.

The areas of the brain which are in charge of the empathy are activated while listening to music. This empathy creates an impact of music in the society, which creates social functions that are basic to communicate and cooperate with others. The coherence used by humans to choose a semantic relation produces a reaction in the brain that can be measured, and it is also produced when listening to music. Therefore, music can communicate semantic information like words do. Music can help people communicate even when they can not do it using words because it is understandable to everyone and it is not harmful in any way.

The idea of using music for health has been used since the beginnings of the humanity. Nowadays music therapists help their clients to have a better physical and emotional health through musical responses. Music can be specifically used to heal body's problems using neuro-physical healing processes. The way external rhythm can heal and help to maintain the brain waves, motor response and organic cells is explained by the concepts of resonance and entrainment which are used to design music therapy's soundtracks. Also, sound stimulation Neurotechnologies make the listener hear a wider spectrum of sound frequencies by listening to mechanically manipulated sound waves.

Finally, some musical relaxing experiments were done to prove the capacity of music to change people's mood, and to prove all the discoveries and studies explained in the project.