

Emoacoustics: Sound character versus source meaning in emotional responses to sounds

Penny Bergman*, Daniel Västfjäll, Erkin Asutay, Ana Tajadura, Anders Sköld, Anders Genell, Niklas Fransson

Chalmers University of Technology

* corresponding author: email: penny.bergman@chalmers.se

ABSTRACT

People react emotionally to auditory stimuli. Despite this fact relatively little is known how sounds can create emotional reactions in listeners. We have developed a framework, the Emotion Reaction Model (ERM), that predicts that both form features (i.e. classical psychophysical attributes such as loudness, sharpness etc.) and content features (i.e. psychological associations to the sound producing source). Using ERM we tested the relative contribution of form vs. content in producing emotional reactions to sounds. In a first experiment, participants rated their emotional reactions to sounds from qualitatively different categories (animals, humans, machine noise) and to same sounds with time or frequency scrambling applied (thus rendering them difficult to identify, but with retained psychoacoustical properties). Experiment 2 used the same sounds but with a priming procedure and experiment 3 assessed emotional reactions using physiological measures. Overall, content, rather than form, appeared to have the biggest impact on emotional reactions. This research may complement traditional psychoacoustical theories that focus solely on form features.