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# Unconscious emotional stimuli effect: EEG study

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## Abstract

It is well known about interconnection between human behavior and emotions. Positive or negative emotional state of a human could be provoked by acoustical emotional stimuli. The purpose of the study is to discover whether it is possible to produce some emotional state and to reflect in EEG frontal asymmetry and motor response by unconscious emotional stimuli. We used infant's emotional vocalizations (laugh and cry) as stimuli. They were masked by brown noise and presented to the left ear. Changing and non-changing tones were presented by headphones to the right ear. Unconscious perception of emotional stimuli was achieved by distraction participant's attention from the left ear with the aid of a task of experiment. Participants got the instruction to press a button, when they noticed a changing tone and to do mental arithmetic all kind of tones separately. There are significant decrease of the motor reaction latency and increase of the strength and the duration at the response under the unconscious negative stimulus. The frontal asymmetry rate significantly changes to infant's emotional vocalizations in comparison with a baseline EEG before stimuli. Also there is reliable frontal asymmetry change to negative stimuli as compared with positive ones.

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