

## fNIRS investigation on unpredictable emotional sounds

*Monday, September 23, 2024 3:30 PM (10 minutes)*

Listening to unpredictable aversive sounds, such as screams, can induce specific neural responses, corresponding to the differential activity of emotional processing-related brain areas. Moreover, human screams have been shown to induce transient states of fear and anxiety, being linked to personal or conspecific signals of danger.

Our aim is to investigate the neural activity associated to states of fear and anxiety induced by unpredictable screams, controlled by unpredictable safe sounds, such as human laughs. Additionally, we want to test if such transient fear/anxiety states can impact the successive execution of tasks with a social valence.

The experiment procedure includes two randomized blocks for each participant, one “safe” and one “threat”, in which participants will hear unpredictable sounds (i.e. laughs and screams).

After each block participants will then execute a virtual social task, consisting in a human avatar approaching them at a constant speed. Participants will be asked to stop the approach whenever they feel the proximity with the avatar is not comfortable anymore. Anxiety and comfort rating scales will also be administered.

For the entire duration of the two blocks cortical activity of frontal and temporal areas will be measured through fNIRS, a non-invasive technique that allows to estimate the cortical hemoglobin changes.

We expect to find differential cortical activity associated to threatening sounds versus safe sounds, and a different social task response after each block, corresponding to a greater distance kept from the avatar after the threat block.

**If you're submitting a poster, would you be interested in giving a blitz talk?**

No

**If you're submitting a symposium talk, what's the symposium title?**

**If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?**

No

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