

Neural correlates of beat perception measured using ear-EEG

BRINGING EEG MUSIC STUDIES INTO THE CONCERT HALL

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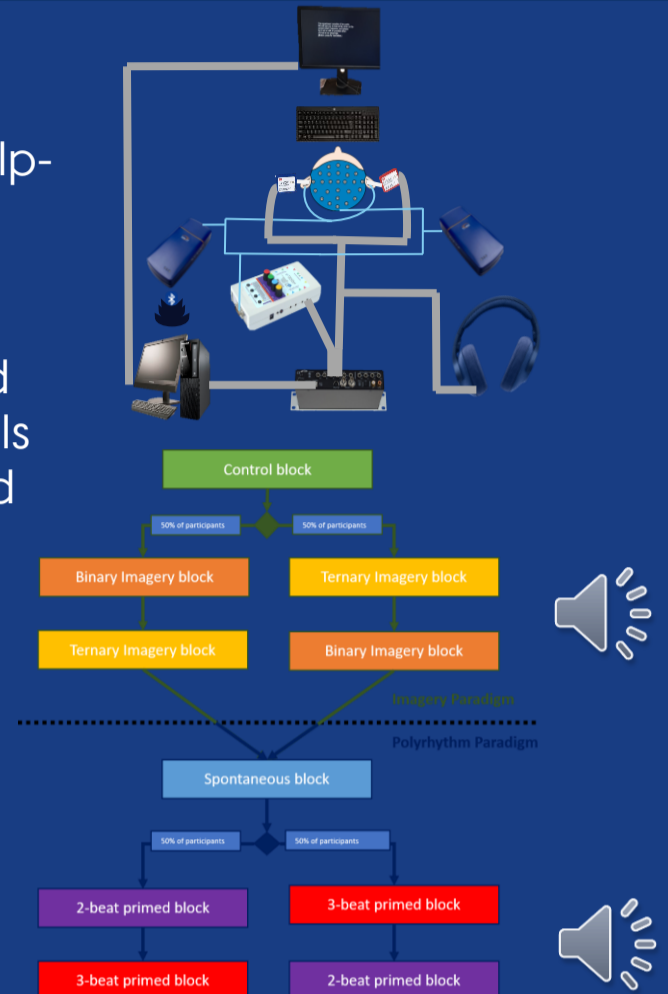
Introduction

- Meter and beat perception investigated before in a lab setting.
- EEG-experiments show that neuronal firing is synchronized to beat and meter perception
- Ear-EEG is a novel measurement technique allowing discrete and mobile EEG recording.
- If it is possible to measure the neuronal correlates of beat perception it is possible to take music studies into more natural environments such as the concert hall.

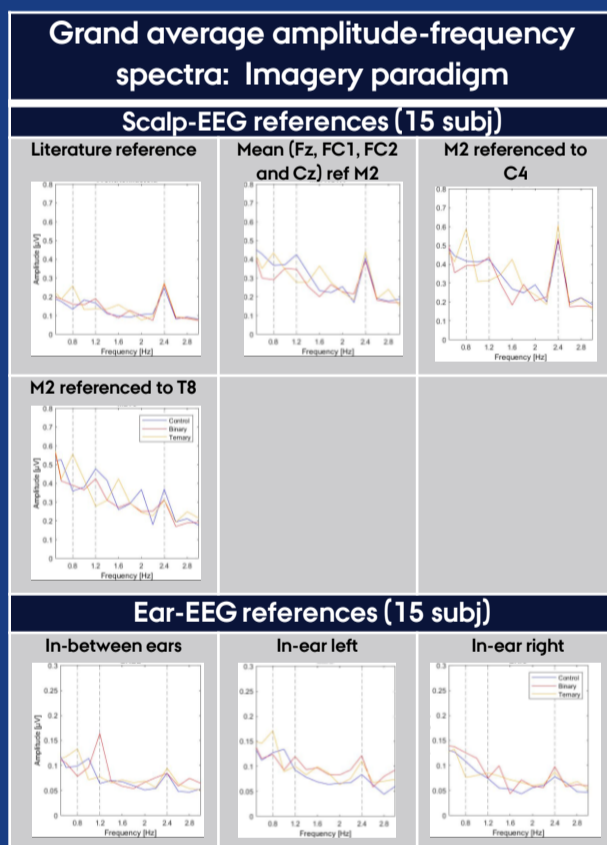
The aim of this study is to investigate whether the neuronal correlates of beat perception can be measured using ear-EEG.

Methods

- 20 Subjects
- 2 paradigms
- Ear- and scalp-EEG
- Artefact rejection and sorting of trials
- Rereferenced
- Permutation test



Results



- A statistically significant increase of amplitude was found in the imagery paradigm on the scalp and for an in-between ears reference. A statistically significant increase of amplitude was also found in the polyrhythm paradigm for a left in-ear reference, but not on the scalp or any other ear-reference.
- It is possible to measure the neuronal correlates of instructed beat perception using ear-EEG when an in-between ears reference is used.

