Divergent thinking and Heart Rate Variability Biofeedback
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INTRODUCTION

Creativity
- Generating ideas, solutions, and insights that are both novel and useful is important for human survival and prosperity\(^1\)
- Alternate Uses Test (AUT) was the first paper-and-pencil task, proposed by Guilford, which measures creative ability\(^2\)
- Assessed for originality (the less frequent the idea is being mentioned, the more original it is), flexibility (the more uses from different semantic categories, the more flexible someone is), and fluency (the more ideas, the more fluent)\(^3\)
- Originality (novelty) measured by statistical originality (ORI)\(^4\)
- Divergent thinking (DT) as a reliable indicator of creative potential

Heart rate variability (HRV)
- Change of time intervals between adjacent heartbeats
- Indicator of control over our health or psychological challenges
- High HRV - good health and well-being
- Low HRV - worse functioning of the organism

AIM OF STUDY/HYPOTHESIS
- Investigation of the influence of heart-brain interactions on DT.
- Heart Rate Variability biofeedback training improves divergent thinking.

METHODS

1. Participants:
   • Experimental group: 13 (9 female), age M = 20.3, SD = 2.4
   • Control group: 8 (3 female), age M = 23.50, SD = 2.6

Alternative Uses task (AUT)
- AUT task: generate as many alternative uses for a common object as possible

- Participants were instructed to announce their idea (by pressing an ‘idea button’) and reported it – this procedure can help eliminate speech-related artifacts from EEG recordings

Study design (HRV-BFB)

- Study design scheme

RESULTS

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<th>Table 1: Experimental group: T-student ‘s paired samples test (statistical significance p&lt;0.05) for originality in the EASY task condition between the pretest and first posttest (S10), and between the first posttest (S10) and upon finishing the last training session (S20).</th>
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<th>Table 2: Control group: T-student paired samples test (statistical significance p&lt;0.05) for originality in the HARD task condition between the pretest and first posttest (S10), and between the first posttest (S10) and upon finishing the last training session (S20).</th>
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LITERATURE


ACKNOWLEDGMENTS

I would like to thank dr hab. Jerzy Łukaszewicz, prof. UMK, director of CMT, NCU for enabling the execution of this project.

This study is part of a research project funded by the Polish National Science Centre with a Preludium 5 grant no. 2015/17/N/HS6/02864