

Boredom as a Modulator of Creativity in the Alternative Uses Task

Creativity is a complex and multifaceted phenomenon, influenced by cognitive, personality, genetic, and environmental factors (Kandler et al., 2016). Although it may seem counterintuitive, one of the potential modulators of creative performance is boredom (Gasper & Middlewood, 2014; Mann & Cadman, 2014; Meier et al., 2024; Park et al., 2019). The present study aimed to induce boredom and measure its impact on creative ideation, while simultaneously monitoring neural correlates of both processes via electroencephalography (EEG).

Thirty-eight adult participants (L1-Polish) completed a modified, cyclical Alternative Uses Task in Polish, (AUT; Guilford, 1967, Witczak et al. 2024, Jończyk et al. 2024) embedded within two conditions: a boredom-induction (peg-turning task, Perone et al. 2019) or a visually matched active control. EEG signal was recorded throughout to capture alpha-band oscillations (8–12 Hz), previously linked to both creative ideation (Fink & Benedek, 2014; Jończyk et al., 2024) and boredom (Miyauchi & Kawasaki, 2018; Perone et al., 2019, 2023). Experienced boredom was assessed using the Multidimensional State Boredom Scale (WSSN; Chruszczewski, 2017), administered between experimental blocks. Participants additionally completed measures of mind-wandering (MWQ; Krukow, 2022), boredom proneness (BPS; Flakus, 2018), ADHD (ASRS; Teodorowicz 2023), and personality (BIG-5; Strus et al., 2013). Ideas generated in the AUT were rated for originality by five independent raters. After excluding six participants due to poor EEG data quality, 30 datasets were retained for analysis.

Results revealed a robust serial order effect: second and third ideas generated within each AUT cycle were rated as significantly more original than the first. This pattern was mirrored in the EEG data, with increased alpha-band power observed for later ideas. No direct relationship was found between alpha power and originality ratings across conditions. Regarding experienced boredom, only the time perception subscale of the WSSN was significantly elevated in the boredom-induction condition relative to the control condition and baseline, with no significant differences observed for the remaining four subscales.

Analyses of the remaining questionnaires will enrich the interpretation of the broader findings. The limited persistence of induced boredom beyond the manipulation phase highlights the importance of measurement timing in future paradigms as well as gauging the possible relationship with individual propensity for boredom or other traits (personality, mind wandering, inattention).

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