

Dose-effects of alcohol on creative cognition

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Background and motivation

Anecdotal reports have linked eminent creativity to excessive alcohol consumption, which prompts the questionable impression that alcohol generally supports creativity, although it is simply possible that eminent creative achievers have resorted to alcohol as a consequence of the stressors associated with fame (Knafo, 2008). In the scientific literature, creative thinking was rather shown to rely on effective cognitive control, while certain thinking processes may also benefit from reduced cognitive control (Radel et al., 2015). In fact, a recent study showed that a moderate dose of alcohol reduced cognitive control but also increased performance on the Remote Associates Task (RAT), a measure of associative flexibility (Jarosz et al., 2012). We have recently replicated this finding in a randomized placebo-controlled study comparing the effects of beer and non-alcoholic beer (Benedek et al., 2017). This study also showed that positive effects observed for the RAT did not generalize to creative idea generation (where we observed no effect). An important open question now is how effects on creative thinking depend on the dosage of alcohol. We predict that positive effects of alcohol are restricted to small levels of alcohol and specific cognitive tasks, whereas higher levels of alcohol might have negative effects. Such a study could have important implications by showing that potential positive effects of alcohol are linked to responsible consumption.

Objective

This study will examine dose-effects of alcohol on different aspects of creative cognition. We assume that moderate amounts of alcohol can have positive effects of some aspects of creative thinking (e.g., RAT), whereas higher levels of alcohol are likely detrimental to most forms of creative thought.

Methodology

This study builds on our previous research (Benedek et al., 2017) and extends it in important ways. It will analyze dose-effects by comparing effects of higher amounts of alcohol (BAC of 0.06; roughly corresponding to 2 beers in males) and lower amounts of alcohol (BAC of 0.03) with a placebo condition (non-alcoholic beer). The sample will consist of 40 participants per experimental group, resulting in a total sample of $n = 120$. Participants will be healthy young adults with non-problematic drinking behaviour as assessed with an AUDIT screening. The manipulation of cognitive control will be checked with established measures of executive control such as working memory tasks. We will examine effects of the intervention on different aspects of creative cognition using established measures of creative potential including the RAT, divergent thinking tasks associative fluency tasks and insight problem solving tasks.

Keywords: cognitive control; creativity; beer; randomized-placebo controlled trial