

# EFFECTS OF DOPAMINE AND SALIENCE MANIPULATIONS ON MAGICAL THINKING

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## ABSTRACT

Although delusional and magical thinking is associated with both increased dopamine and aberrant salience, it is unknown whether dopamine manipulations cause increased magical thinking on non-clinical measures or whether salience manipulations cause an increase in magical thinking. The current research investigated whether experimental manipulations of dopamine and salience cause an increase in magical thinking as measured by a lab task in college students ( $n = 252$ ). Magical thinking was measured behaviorally by throwing darts at either a highly positive baby face or a neutral smiley face. Dopamine levels were manipulated by whether or not participants performed a high reward gambling task. Salience levels were manipulated by whether the baby face stimulus was novel or had been seen frequently on an earlier task. Dopamine functioning was measured with a reversal learning task. Trait magical thinking was measured with the Magical Ideation Scale. As expected, performance on the magical thinking behavioral task was associated with both the dopamine reversal learning task and increased trait magical thinking. In addition, the dopamine manipulation affected performance on the dopamine reversal learning task. Most importantly, we found that both the dopamine manipulation and the salience manipulation caused an increase in magical thinking on the behavioral task (i.e., less accurate in throwing at baby face than at smiley face). Overall, the current research provides evidence that experimental increases in dopamine and salience cause increased magical thinking.