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Effects of dopaminergic modulation on subjective psychotic experiences

In order to confirm that single-dose administration of dopaminergic agonists and antagonists as used in the main study had the desired effect regarding psychotic experiences, a psychotic symptom self-rating scale was administered to 30 further healthy individuals (15 mean, mean age 26.7 ± 4.88 yr). Inclusion and exclusion criteria, recruitment sources, design of drug administration and doses were identical to those used in the main study. The 2 participant samples did not significantly differ in age ($t_{58} = 1.198, p = 0.24$) and sex ($\chi^2 = 0.268, p = 0.61$).

Psychotic experiences were assessed with the Community Assessment of Psychic Experiences (CAPE-42) Scale, a 42-item self-report questionnaire that yields scores for positive, negative and depressive symptoms.1 The scale was completed at the end of each testing session; small adjustments to item wording were made, such that the reference time period corresponded to the duration of the session.

Significant session effects were noted for the positive and negative subscale of the CAPE (both $p < 0.01$); in both cases, ratings decreased over time. Therefore, we followed the same analysis approach as in the main study, applying linear mixed models with both session and substance (and their interaction, where appropriate) as independent factors. Three separate analyses were conducted with positive, negative and depressive symptom subscores as the dependent variables; participant ID was included as a random factor in all analyses, similar to the main study.

The main effect of substance was significant only in the case of positive symptoms ($F_{2,42.89} = 3.725, p = 0.03$). Post hoc pairwise comparisons indicated that L-dopa was associated with significantly higher positive symptom scores than haloperidol ($p = 0.01$) and showed a trend toward significance when compared to placebo ($p = 0.06$), while there was no difference between haloperidol and placebo ($p = 0.48$). There was no significant effect of substance in the case of negative and depressive symptoms (both $p > 0.18$). Mean CAPE subscores for each substance are presented in Table S1.

![Table S1: CAPE score](image)

SD = standard deviation

Effects of dopaminergic modulation on probability ratings and probability threshold to decision in the Fish Task

In view of studies showing higher probability ratings for fish matching the lake colour2 as well as lower probability thresholds to decision3 in patients with delusions, we also conducted subsidiary analyses on these variables: (a) a 3 (substance) × 10 (order of presented fish: first to tenth) analysis of variance (ANOVA) on probability ratings; (b) a 3 (substance) × 2 (match v. nonmatch) repeated-measures ANOVA on mean probability ratings for fish that matched the majority colour of lake A compared to those that did not; and (c) a repeated-measures ANOVA on the probability threshold, at which a decision was made, with substance as the only within-subjects factor. Preliminary analyses showed no significant session effects for any of the above variables (all $p > 0.15$), therefore we did not use linear mixed models with session as an additional factor.

There were no significant effects or interactions of Substance in any of the above analyses: (a) substance $F_{2,58} = 0.342, p = 0.71, \eta^2_{\text{partial}} = 0.012$; substance × order $F_{2,261} = 0.943, p = 0.53, \eta^2_{\text{partial}} = 0.031$; (b) substance $F_{2,58} = 0.358, p = 0.70, \eta^2_{\text{partial}} = 0.012$, substance × matching $F_{2,58} = 0.042, p = 0.96, \eta^2_{\text{partial}} = 0.001$; (c) $F_{2,58} = 1.005, p = 0.38, \eta^2_{\text{partial}} = 0.033$. 

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