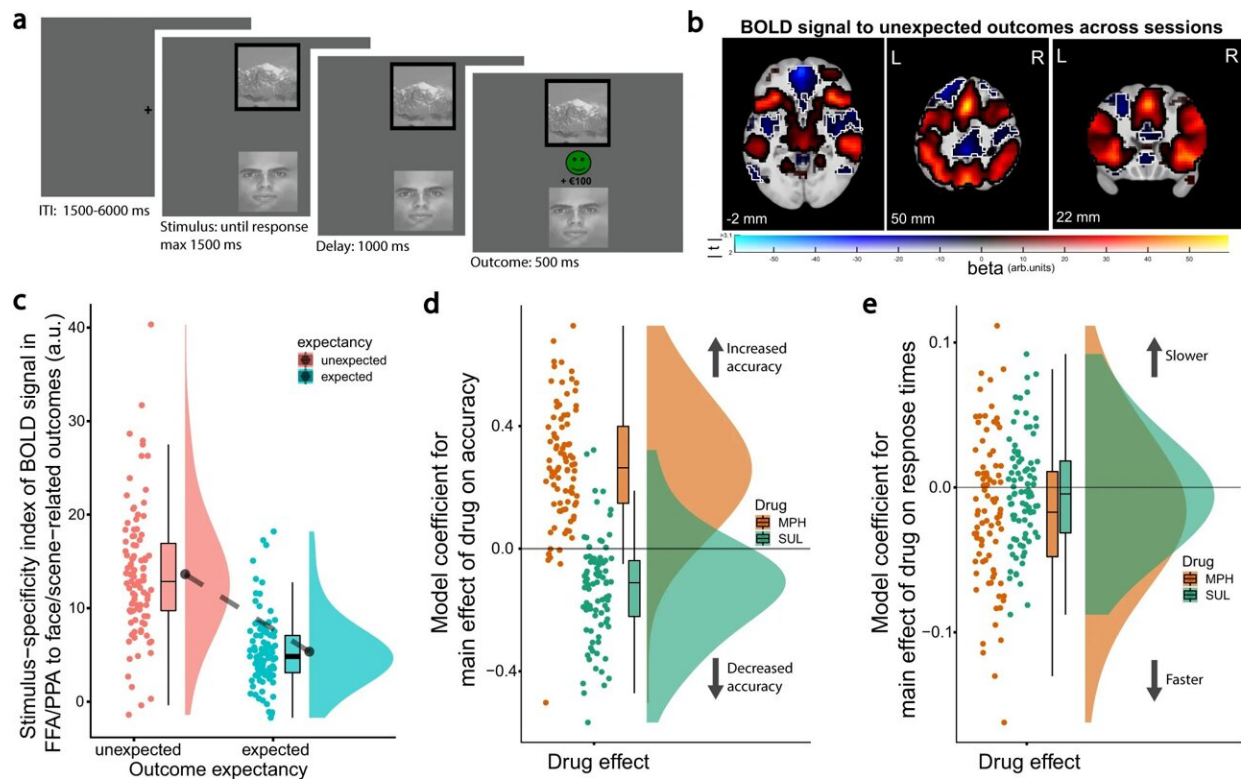# Study unravels mechanisms of psychostimulants on attention and learning

September 27 2022, by Helen Mendes

Task and main effects. a Reversal-learning paradigm. Two stimuli, a face and a scene, were presented simultaneously. One was associated with a reward outcome, the other with a punishment outcome, with 100% deterministic contingencies. On each trial the computer selected one image, and the participant's task was to predict whether the highlighted stimulus would be followed by a reward or punishment outcome. Then the actual outcome was presented. The stimulus-outcome associations reversed regularly, which was signaled by either an unexpected reward or unexpected punishment outcome. Accuracy on trials immediately after an unexpected outcome (reversal trials) was

the performance measure of interest. Task images were obtained with permission from ref. 48. b fMRI BOLD signal to unexpected versus expected outcomes collapsed across all three sessions (N = 94 participants). In these dual-coded images, color indicates the size of the contrast estimate and opacity codes the height of the t values (plotting procedure: refs. 113, 114). Voxels with t values above the threshold of P

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