Deficits of reward incentive context effect in schizophrenia: the relevance of proactive cognitive control

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Emerging evidence suggests that impaired goal-directed behavior in schizophrenia may be influenced by failures to represent and use reward information via proactive control processes. To test this, we used a response conflict task (Padmala & Pessoa, 2011) in which participants categorized images as either houses or buildings. The images were either overlaid with a matching word (congruent), a non-matching word (incongruent) or a row of red Xs (neutral). Participants first performed baseline trials with no incentives. In the reward condition, trials were preceded either by a cue ($20) indicating that a fast and correct response would be rewarded, or by a cue ($0) indicating no reward was possible on that trial. In healthy individuals, performance is faster on "$20" trials, referred to as an "incentive" effect. Performance is also faster on "$0" than baseline trials, referred to as the "incentive context" effect, which may be mediated by reward enhancement of proactive control. Individuals with schizophrenia (N=45) showed a reduced incentive context effect compared to healthy controls (N=35), while showing intact incentive effects. These results suggest that impaired goal-directed performance in schizophrenia may be influenced by difficulties representing and integrating reward information via proactive control rather than reward value per se.