Prospective versus reactive strategies in microworld performance

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Abstract

Cognitive flexibility is the ability to adapt to changing contingencies and demands over time. It is often assessed by complex problem solving tasks (e.g., microworld simulations), which require individuals to maintain a goal state over trials. Yet typically analyses summarises performance by mean accuracy per person, which assumes performance is a constant and ignores the trial-by-trial trajectory of individuals that reveal strategy . We tested n = 83 psychology students aged 16 to 45 in a microworld task under different conditions of stochasticity and delay. We modelled trial-by-trial performance according to a prospective model of the true task contingencies versus a reactive strategy adapting to feedback from the last trial,. Most individuals (66%) appeared to adopt a reactive strategy, however when the task contingencies were immediate, people were more likely to act prospectively. Performance in the microworld task depends on the strategy which varies by person and with the task contingencies.

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