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Increasing reward prospect promotes cognitive flexibility: Further evidence from a cued global-local task

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Abstract

Goal-directed behavior requires a dynamic balance between cognitive stability and flexibility. This balance can be modulated by performance-contingent reward. Converging evidence suggests that such rewards promote stability by increasing cue maintenance for response preparation in tasks like the AX continuous performance task. However, task switching studies showed oppositional effects of performance-contingent reward depending on the immediate reward history: Only remaining high reward prospect increases stability, whereas increasing reward prospect increases flexibility. The present study tests whether the flexibility-enhancing effect of increasing reward prospect generalizes beyond task switching scenarios. In a novel cued global-local task, the cue-validity effect served to indicate cognitive flexibility versus stability. Evidence from two experiments shows that increasing reward prospect reduces the cue-validity effects but only in error rates. This suggests more flexibility in terms of increased reactive control compared to remaining high reward prospect, which could be functionally adaptive to prevent extreme stability.