

## **Selective attention and conflict processing under primary incentives: evidence from the flanker task.**

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Research indicates that motivational incentives can enhance cognitive control during task-switching and working memory paradigms. Conflict resolution is another commonly postulated control process, but may be engaged differentially from other control processes (i.e., reactively rather than proactively). We examined positive (reward) and negative (penalty) motivational state effects on conflict processing in the Eriksen flanker task. Reward and penalty blocks involved intermixed incentive and no-incentive trials, with incentive value cued prior to trial onset. Primary incentives (pleasant/unpleasant liquids) were used. Flanker trials were incompatible (conflict), compatible, or neutral, permitting examination of interference and facilitation effects. We observed the classic flanker effect: performance (latency and accuracy) improved from incompatible to neutral to compatible trials. Incentives improved both speed and accuracy of performance, but effects did not differ with incentive valence, suggesting that both reward and punishment can enhance attentional performance. Additionally, latency decreased in incentive blocks relative to baseline, even in trials without incentives offered. This mirrors the ‘incentive context effect’ (Savine et al., in press), suggesting a sustained, global impact of incentive on performance. However, incentives did not reduce conflict-related interference, suggesting a limited reactive effect. A second experiment examined whether proactive forms of conflict resolution might be differentially sensitive to incentives. Proactive control was engaged by preparatory cues foreshadowing conflict (indicating trial-type). Analyses examined whether incentive information interacted with the presence/absence of trial-type foreknowledge, directly testing whether the ‘incentive cue effect’ is due specifically to enhanced use of such preparatory cues via motivation-based optimization of proactive, rather than reactive, control.