Performance incentives enhance alerting, orienting, and executive attentional processes

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Abstract

A growing body of research has documented that people enhance cognitive control when they are motivated, likely by proactively upregulating goal-relevant stimulus processing. However, there are multiple attentional mechanisms that can facilitate stimulus processing (such as better alerting and orienting), and little is known about how incentives reconfigure these component processes. To address this question, we developed an incentivized version of the well-validated Attentional Networks Task. This task combines Posner cueing with flanker inhibition, allowing us to isolate the effect of reward across a range of attentional domains. Consistent with previous research, we found that in a sample of online participants (N=120), overall accuracy was enhanced under incentives, without sacrificing reaction time. We further found that incentives increased participants' sensitivity to alerting cues and altered how orienting cues interacted with flanker facilitation. These results provide new insight into how people control multiple attentional processes to earn rewards.

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