
Exogenous and endogenous sources of uncertainty inform global performance monitoring

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Résumé

Our study investigates the contribution of first-order accuracy and uncertainty to global performance monitoring. After a set of four trials of an orientation matching task, participants first reported their perceived mean response, and then a region around that mean estimate corresponding to their estimation of their responses' dispersion. We could assess how first-order performance, endogenous uncertainty (estimated from the variability of first-order performance), and exogenous uncertainty impacted global performance monitoring. In two experiments, we observed that participants effectively tracked and utilized the average and dispersion of their first-order performance to monitor global performance. The calibration of metacognitive judgments to first-order performance was better when endogenous uncertainty was lower. Similarly, exogenous sources of uncertainty (i.e., stimulus- and attention-related) also modulated the calibration between global metacognitive reports and first-order performance. These results suggest that people can reliably estimate the mean and variability of their performance and use it together with exogenous uncertainty to inform their global performance monitoring. However, this capacity decreases in the presence of both internal and external uncertainty. We discuss these results in light of the role of uncertainty in perceptual metacognition and the relationship between local and global performance monitoring.

Mots-Clés: performance monitoring, metacognition, confidence, sensory uncertainty, attentional cueing

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