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# Exploring the relation between Metacognition, Multi-tasking and stress.

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## Content

When people do multiple tasks at the same time, it is often found that their performance is worse relative to when they do those same tasks in isolation. Indeed, error rates and response times (the Type 1 performance) have been repeatedly found to increase when multitasking. However, one aspect that has received little empirical attention in comparison, is whether observers are aware of these effects (their Type 2 performance). In a previous study, using a simple dual-task visual paradigm, we found that metacognition was unaffected by multitasking. In order to understand if this result could be generalised to other types of multitasking, we further developed a multi-modal paradigm, involving a motor tracking task, a visual detection task, and an auditory n-back task. We made participants perform these tasks in different combinations of single-, dual-, and triple-tasking, and asked them to assess their own performance on a trial-by-trial basis. Comparing these different conditions, we discuss our results in the light of the influence that multitasking, and the specific type of task, has both on type 1 and type 2 performance, as well as on participants' metacognitive bias. Finally, we explore how stress impact these different measures.

**Keywords :** Mental workload, Acute stress, Emotion, Fatigue