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Self-organized task scheduling when multitasking

Abstract:

Research in the area of multitasking often focused on the costs and interference processes when multitasking. Dual task and task switching costs are often replicated and seem to suggest that people should avoid multitasking. Yet, multitasking is a societal fact and people engage in performing several task at once or in close succession in work environments and also in leisure time activity. Here, we suggest that engaging in multitasking might be advantageous due to constraints of the environment. For example, multiple step tasks often entail waiting times until one process is finished – just think about waiting for the water to boil when cooking tea. In a new variant of the voluntary task-switching procedure, we explored whether participants adapt to their individual task-switching performance limitations (switch costs) on such externally induced waiting times. Critically, the stimulus belonging to the chosen task appears delayed in the next trial and this delay increases with the number of task repetitions. In several experiments, we observed that participants trade off switch costs against the increasing waiting time for the stimulus needed for a task repetition. This is in line with the assumption that participants considered their individual switch costs when selecting tasks and might thus be considered as an indicator of adaptive multitasking behavior.