

Dual-Task Strategy Adaptation: How Task Structure is Actively Reconfigured for Improved Performance

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Abstract: How do people interleave attention when multitasking? One dominant account is that the completion of a subtask serves as a cue to switch tasks. But what happens if switching at subtask boundaries led to poor performance? We report a study where participants manually dialed a UK-style telephone number while driving a simulated vehicle. If the driver were to exclusively return their attention to driving after completing a subtask (i.e., using the single break in the xxxxx-xxxxxx representational structure of the number), then we would expect to see relatively poor driving performance because of the prolonged periods of distraction. In contrast, our results indicate that drivers choose to interleave the two tasks after dialing every few digits in a xx-xxx-xxx-xxx fashion. This shows how the structural representation of the dialing task is reconfigured in dual-task settings, to allow more frequent interleaving and improved driving performance.