

# Task-Switching Task

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| <b>Title</b>                  | Task-Switching Task                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Domain</b>                 | Self-Regulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Type</b>                   | Behavioral                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Duration (min)</b>         | 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Description</b>            | <p>In this task, subjects are presented with a task cue followed by a colored number (1-9 excluding 5). The cue indicates whether to respond based on parity (odd/even), magnitude (greater/less than 5) or color (orange/blue). The cue's text could be either descriptor in the last sentence, thus leading to two cues for each task. This task allows the separation of cue effects from task-switching effects as well as the investigation of task-set inhibition (which would effect sequences like parity, magnitude, parity due to inhibition of return, but not parity, magnitude, color).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>OSF Link</b>               | <a href="https://osf.io/br2c9/">https://osf.io/br2c9/</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Adult/Child</b>            | adult                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Computerized</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Identified</b>             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Identified Description</b> | <p>Task switching tasks aim to index the time-consuming control processes involved in reconfiguring the cognitive system to support a new stimulus-response mapping. In cued task switching tasks, subjects see a task cue (e.g., color) followed by a stimulus with multiple dimensions (e.g., a colored number between 1-9 excluding 5). The cue indicates whether to respond based on parity (odd/even), magnitude (greater/less than 5) or color (orange/blue). The cue's text could be either descriptor (e.g., parity or odd/even) from each pair in the last sentence, thus leading to two cues for each task. The traditional task switching effect is that responses are slower and less accurate when the current task differs from the preceding task (i.e., a “task switch”) compared to when the current task matches the preceding task (i.e., a “task repeat”). This switch-repeat comparison is the “task switching cost”, which is supposed to capture the aforementioned reconfiguration time. However, most traditional cued task switching tasks confound cue switching costs with task switching costs. This task allows the separation of cue switch costs (e.g.,, previous trial had the cue “parity” and the current trial has the cue “odd/even”) from task switching costs (e.g., previous trial had the cue “parity” and the current trial has the cue “magnitude”). This results in two main dependent</p> |

variables of interest: task switch cost and cue switch costs, with the former being a putative index of reconfiguration and the latter being an index of simpler encoding processes of the cue and the stimulus. This control process of reconfiguration may be an important dimension of self regulation.

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|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified Supporting Documentation      |                                                                                                                                                                                                                   |
| Identified PMCID, PUBMED ID, or CITATION | Text Citation: Mayr, U., & Kliegl, R. (2003). Differential effects of cue changes and task changes on task-set selection costs. Journal of Experimental Psychology: Learning, Memory, and Cognition, 29, 362-372. |
| Measured                                 |                                                                                                                                                                                                                   |
| Measured Description                     |                                                                                                                                                                                                                   |
| Measured Supporting Documentation        |                                                                                                                                                                                                                   |
| Measured PMCID, PUBMED ID, or CITATION   |                                                                                                                                                                                                                   |
| Influenced                               |                                                                                                                                                                                                                   |
| Influenced Description                   |                                                                                                                                                                                                                   |
| Influenced Supporting Documentation      |                                                                                                                                                                                                                   |
| Influenced PMCID, PUBMED ID, or CITATION |                                                                                                                                                                                                                   |
| Outcome (Validated vs Invalidated)       |                                                                                                                                                                                                                   |
| Outcome                                  |                                                                                                                                                                                                                   |
| Outcome Description                      |                                                                                                                                                                                                                   |
| Outcome Supporting Documentation         |                                                                                                                                                                                                                   |
| Outcome PMCID, PUBMED ID, or CITATION    |                                                                                                                                                                                                                   |
| Owner                                    | Teon Brooks<br><a href="#">Send email to Teon</a>                                                                                                                                                                 |

