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Dear Editors,

Please consider our enclosed manuscript titled *"Unique motor plans facilitate learning during task switching, but at the expense of greater switch costs"* for publication in *Memory & Cognition*. Our manuscript is important because it is the among the first to simultaneously investigate two fundamentally important aspects of cognition and action: task switching and initial task learning.

We show that in attention-demanding environments, learning is better when each task has unique motor responses compared to when the same motor responses are used for both tasks, but this improved learning comes at the price of increased switch cost. We further show that in order to account for this result, standard models of cognitive control must be augmented with a novel motor control mechanism in which there is competition among competing response options. Finally, we show that switching between tasks that load on the same memory system is easier than switching between tasks that load on different memory systems, and that switching between rule-based tasks that preferentially rely on declarative memory is the easiest of all.

For expert evaluation of the task switching and cognitive control and modelling elements of our manuscript, we recommend the following reviewers:

- Anne Collins; annecollins@berkeley.edu
- Scott Brown; scott.brown@newcastle.edu.au
- Andrew Heathcote; andrew.heathcote@newcastle.edu.au

For expert evaluation of the initial task learning elements of our manuscript, we recommend the following reviewers:

- Carol A. Seger; Carol.Seger@colostate.edu
- Sébastien Hélie; shelie@purdue.edu

Thank you for your consideration and we look forward to hearing from you in due course.

Sincerely,

Matthew J. Crossley*
J. Vincent Filoteo
W. Todd Maddox
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