

NEUROSCIENCE

Slow response a force of habit

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Reaction time (RT) — how fast a person responds — is the most widely used measure to study the processes of the mind that underlie interacting with the world. But what cognitive computations are reflected in RTs?

Aaron Wong of Johns Hopkins University and colleagues report experiments showing that participants' prior experience can greatly influence RTs. Especially strong evidence for this claim comes from one experiment in which participants moved their hands from one position to another, avoiding virtual obstacles. Participants were generally faster to respond to a task when they could follow a cued path around the obstacles than when they performed the movement unguided. However, if participants had any experience with performing the unguided version of the task, their response times remained slow when the visual cue was reintroduced in subsequent rounds.

This finding shows that the time when a movement starts can be determined habitually, rather than by the time it takes to plan the movement. It reinforces the suggestion that initiation and planning of movements are separate processes in the brain.

It is yet unclear whether the finding translates to other domains — but given the ubiquity of serial experimental designs, it may have far-reaching implications for cognitive science.

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