

The congruency sequence effect indexes response-general control

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Author Note: The authors thank Andrea Dai, Cathryn Goldman, Ceren Ege, Al-Amin Ali, Alexis Salinas, and Daphne Samuel for assisting with data collection. The raw data associated with the present manuscript are publicly available on the Open Science Framework. Interested parties can access these data freely via the following link:

https://osf.io/j2wt7/?view_only=5219a945766d4f13a813ef5c5e689031

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Keywords: conflict adaptation, congruency repetition, episodic retrieval, cognitive control

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Abstract

Adapting to recent events is essential in everyday life. A robust measure of such adaptive behavior is the congruency sequence effect (CSE) in the prime-probe task, which refers to a smaller congruency effect after incongruent trials relative to congruent trials. Prior findings indicate that the CSE reflects control processes that modulate response activation. It remains unclear, however, whether these control processes modulate only the response cued by the prime (response-specific control) or also other responses (response-general control). To distinguish between these possibilities, we employed a novel prime-probe task wherein primes and probes are mapped to different responses (i.e., effectors), such that only response-general control processes can engender a CSE. Critically, we observed a robust CSE in each of two experiments. This outcome supports the response-general control hypothesis. More specifically, it suggests that control processes engender a CSE in the prime-probe task by combining a memory of previous trial congruency (i.e., congruent or incongruent) with the identity of the current-trial prime to prepare a specific response to the upcoming probe.