Test-retest reliabilities of metacognitive monitoring and control: preliminary results

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Abstract

People vary in their abilities to form self-knowledge (metacognitive monitoring) and use self-knowledge to guide behaviors (metacognitive control). To assess the test-retest reliability of metacognition, we tested participants with a perceptual task four times over a month. We quantified metacognitive monitoring by computing metacognitive efficiency and bias metrics within the *hmetad* model (O'Neill et al., 2026), and devised novel analogous measures of metacognitive control bias and sensitivity using logistic regression. Our preliminary results (N=157, half the planned sample) showed moderate test-retest reliability of metacognitive bias (r = .67 [.60 .72]). By developing a hierarchical Bayesian model of the longitudinal structure, we observed robust (albeit still low to moderate) test-retest reliability of metacognitive efficiency (r = .45 [.22 .66]). Moreover, test-retest reliabilities of both control bias (r = .86 [.82 .89]) and sensitivity (r = .77 [.68 .84]) were good. Our results provide methodological foundations for individual differences research on metacognition.

Keywords: Metacognition; Information seeking; Test-retest stability; Individual differences

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