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# Within-Individual Variation in Cognitive Performance is Not Noise: A Case for Examining Within-Person Variation on Cognitive Assessments

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## Abstract

Despite the long-standing recognition that individuals vary in their cognitive performance across relatively short time periods, little research has integrated an understanding of short-term within-individual variation in cognitive performance into our theories of cognitive ability. We contend that systematic patterns of between-individual differences in within-individual variation are meaningful and should not be viewed merely as measurement error. We argue that predominant cognitive testing methods using between-individual analysis of single-occasion scores are limited in their capacity to develop a process account of why individuals with the same test score differ in practical contexts. We propose that short-term repeated measures paradigms (e.g., the Experience Sampling Method) be used to understand the nature and sources of between-individual differences in within-individual variation. Finally, we outline considerations for researchers when adapting this paradigm for cognitive assessment and present initial findings from our lab on the feasibility of this paradigm.