

**Article Review: How Are Visuospatial Working Memory, Executive Functioning, and
Spatial Abilities Related? A Latent-Variable Analysis**

Paul Beggs

Department of Psychology

Hendrix College

PSYC 319: Cognitive Psychology

Dr. Carmen Merrick

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Summary

In this article by Miyake et al. (2001), the researchers sought to contribute research to the ever growing body of literature regarding the visuospatial working memory (WM) and short-term memory (STM), executive function (EF), perceptual speed (PS), spatial visualization (SV), and spatial relations (SR). They recruited 167 college students, and subjected them to a series of 12 tasks: two for EF, two for visuospatial-WM, two for visuospatial-STM, and a blocks task where participants where to recall the changing sequence of blocks from one color to black. In addition, they ran five tasks that were similar to the changing blocks. Miyake et al. (2001) used two χ^2 statistical tests to evaluate the their findings: the “Standardized root-mean-square residual (SRMR)” and “Bentler’s comparative fit index (CFI)” (Hu and Bentler, 1998 as cited in Miyake et al., 2001). They found that the role of executive functioning with STM and WM cannot be differentiated. From this finding, they conclude that “. . . verbal phonological storage and visuospatial storage puts important constraints on models of WM” (Miyake et al., 2001). For the other dependent variable, differences and similarities between PS, SV, and SR, they found that all three factors varied in how they utilized EF. Moreover, the note SV used the most EF, and PS used the lowest.

References

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