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Abstract Title: Visual working memory in younger and older adults: multi-modal coding and strategic approach.

Abstract: In two experiments, visual working memory capacity was assessed in younger (18-35 years) and older (63-88 years) adults, using the modified Visual Patterns Test (VPT; Brown, McConnell, & Forbes, 2006). In Experiment 1, the more abstract task version was used, along with a visual interference (dynamic visual noise) paradigm. Overall, when the interference condition had been carried out first, there was better performance in the following control condition, indicating a general limitation related to the interference. Furthermore, a marginally significant interaction indicated that, although marked overall, the age effect was largest in those who carried out the interference condition first, suggesting a greater age-related vulnerability to the interference. In Experiment 2, the two age groups performed both the abstract and more meaningful versions of the modified VPT, with the latter incorporating more generalised, central executive resources for multi-modal coding (Brown & Wesley, 2013). The Scaffolding Theory of Aging & Cognition (Park & Reuter-Lorenz, 2009) could predict better performance in older adults when there is less emphasis on specifically visual processing and storage. Again, there was a marked effect of age overall, but both age groups benefited from the more meaningful stimuli to the same degree. Regarding the reported strategies used, however, the younger adults adopted a mixed strategy to a greater extent than older adults, who reported less verbal labelling and more visual refreshing. The results suggest that strategy is important, and that a more flexible approach could be useful for improving visual working memory capacity in older adults.