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Individual variation in human spatial ability: differences between men and women in object location memory

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Abstract One of the most consistent findings in the area of cognitive sex differences is that males outperform females on many spatial tasks. One exception seems to be object location memory. On this task, females tend to perform better than males. However, the existing studies have provided quite mixed results and the picture is far from clear. Important moderators not systematically controlled for thus far are encoding context, the way information is retrieved from memory and the multiple component aspect of object location memory. The aim of our research was to investigate-gender differences within and between automatic and controlled encoding (incidental-intentional) and retrieving (explicitimplicit) contexts--if and how memory for objects is related to memory for object locations. Object location memory was assessed by a task in which objects had to be relocated within (pictures of) different rooms. Different encoding contexts were created by varying instructions between subjects. The way in which subjects retrieved the object locations was assessed by means of the Processing Dissociation Procedure developed by Jacoby. A separate object recognition task was conducted in order to measure memory for the objects. In general, females performed better than males on the object location memory task. However, when controlled for object memory, females no longer outperformed males, whereas they did not obtain a higher object recognition score, nor did they have more contextual recollection of the object identities. This indicates that a female advantage probably occurs somewhere else in the process of binding objects to locations. In general, participants had more conscious recollection than unconscious recollection. No effect of encoding context was found, nor any interaction effect of gender, encoding and retrieval context.



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