Effects of Visuomotor Engagement on Object Knowledge Retrieval

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Abstract

Behavioral, neuroimaging, and neuropsychological studies have shown that certain aspects of object knowledge (e.g., the objects function or mode of manipulation) can be accessed independently of more abstract properties (e.g., the objects name) and faster when participants are presented with three-dimensional relative to two-dimensional objects. Here we examined whether visual and manual exposure to three-dimensional objects, relative to two-dimensional pictures of these objects, would allow for differential access to semantic memory under conditions of impromptu relative to canonical goal achievement (i.e., when a participant has to come up with an unusual, relative to a typical, use for a common object). Our results showed that the combination of visual and manual exposure to three-dimensional objects interfered with the generation of uncommon uses, liked due to the facilitated access to sensorimotor object properties associated with the objects canonical use. We discuss the implications of these results for theories of object knowledge retrieval.