Children make category generalizations based on object shape but not object color in visual recognition tasks

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Although visual recognition plays a critical role in studies of cognitive development (e.g., visual-habituation paradigms, object naming tasks) the processes that support this basic ability remain contentious in the broader literature. Research within neuropsychology has suggested that patients' ability to recognize objects that they cannot name may result from the prototypicality of target images rather than recognition processes. However, within patient populations there is the potential for disease progression to impact both recognition and knowledge systems conjointly. As a test of potential explanations, we have adapted neuropsychology tasks, in which real and chimeric objects differed by a single feature, for young children. Developmental results suggest that children's recognition is influenced by their semantic knowledge when the stimuli differed by object shape, an outcome that parallels findings in neuropsychology. However, when prototypicality was based on color, children and patients exhibited contrasting patterns. Whereas patients were again strongly sensitive to typicality, children showed no such pattern despite comparably poor performance on the task. Together these findings offer important insights and constraints for theories of how conceptual knowledge differentially informs recognition behaviors across the lifespan.