The role of attention allocation during induction

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Abstract: Induction is an essential aspect of human learning and reasoning, yet there is no consensus regarding the underlying mechanisms. One view holds, early in development, induction is similarity-based, utilizing perceptual features, possibly allowing increased encoding therefore higher memory accuracy. While another view posits that across development induction requires identifying category membership, possibly limiting encoding of perceptual detail thus decreased memory. This experiment assessed attention allocation during category learning, induction, and recognition. Adults were presented with categories having one defining dimension and multiple probabilistic dimensions. Participants with higher attention to defining features exhibited lower memory accuracy following induction than those with higher attention to probabilistic features. Results implicate similarity-based induction (induction based on distributed attention across multiple dimensions) as associated with more accurate encoding of multiple features thus more accurate memory. While induction based on selective attention to defining features results in encoding primarily these features and thus less accurate memory.