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A Natural Behavior Approach to the Recognition of Disoriented Objects

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Abstract: How we recognize familiar objects when they appear in a non-canonical orientation represents a major undertaking in cognitive psychology. Most research has focused on the varied internal computations involved (e.g., mental rotation). In the present investigation, we report on results from a series of studies aimed at understanding the natural adoption of external, body based solutions while individuals attempt to recognize a disoriented object (e.g., head rotation). We demonstrate that one of the major factors contributing to the selection of an internal or external strategy is stimulus complexity. We also demonstrate large and reliable individual differences in strategy selection. Discussion focuses on the distribution of cognitive effort as a driving factor in the decision to adopt an internal or external strategy and the utility and inherent challenges in studying natural behavior as a means to shed light on this and related issues.