

Learning categories from an intermittent teacher

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Abstract: Category learners typically experience at least two types of learning episodes. Sometimes, stimuli are observed without labels (unsupervised learning), while at other times, a teacher provides a category label or name (supervised learning). Until recently, these two types of learning have been studied independent of one another, despite the fact that many influential models of category learning treat them as equivalent. In a series of experiments, we explored tasks in which both labeled and unlabeled exemplars were provided. We find that when unlabeled items are intermixed with numerous labeled exemplars, participants appear to decouple labeled items from unlabeled items. In contrast, when unlabeled items are intermixed with few labeled exemplars, participants integrate information across the two types of learning episodes. These results suggest that people's tendency to integrate information from labeled and unlabeled learning episodes can be understood in terms of normative statistical inference.