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When do labels facilitate category learning in adults? The role of visual category structure

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Abstract

Adults category learning is accelerated by redundant verbal labels (Lupyan et al., 2007). However, it is an open question how category representations are affected by labeling. Here, we presented subjects with a learning task that involved separating sine wave gratings of differing spatial frequency and orientation into two categories. Categories of easy, medium and difficult separability were constructed. Participants (N=128) either received only feedback sounds during training, or heard verbal labels in addition. Growth curve analysis (Mirman, 2014) was used, fitting 2nd order polynomials to the data across the learning phase. In addition to main effects of difficulty on intercepts and the linear time term, the best-fitting model showed an effect of labeling on the linear time term, with steeper learning curves in conditions with labeling. There was no interaction of labeling and difficulty, indicating that the impact of labeling is similar across the types of categories used here.