

Development and Utilization of a Continuous-Space Description of Paintings

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Abstract

Theories of category learning suggest that some aspects of item similarity (e.g., exemplar to exemplar; category center to category center) play a key role in predicting learning. Yet, measuring the distance between items can be difficult for real-world categories, so researchers often use contrived items (e.g., aliens with 1 to 5 circles on their chest). Here, we examined the role of similarity using more naturalistic categories: painting styles. To measure perceived distance between paintings, participants ($N = 1,335$) completed 512 trials of a triplet task, choosing which of two paintings was visually most similar to a target. Triplets were drawn randomly from 475 still life and landscape paintings by 40 artists. A machine learning algorithm then placed the paintings in a continuous space based on 571,286 total decisions. We used this space in a new learning task, where participants identified the artist of previously seen/unseen paintings. Initial results suggest perceived distances predicted learning outcomes.