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Authors

Liao, Grace

Li, Christy

Deng, Sophia W

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Decoupling between categorization and attention optimization: An eye-tracking study

Grace Liao

University of Macau, Taipa, Macao

Christy LI

University of Macau, Taipa, Macao

Sophia Deng

University of Macau, Macau SAR, Macao

Abstract

Selective attention has been a critical component in many models of categorization and category learning. However, previous developmental studies have found that children under age five exhibited inconsistent patterns of attention in categorization and recognition, which challenges the long-held assumption that categorization is often accompanied by attention optimization. We designed an eye-tracking study to directly investigate this dynamic relationship between attention optimization and categorization using the occlusion-based anticipatory eye movement paradigm. Adult participants were asked to learn artificial categories while their eye movements were recorded and their memory of features was tested. Surprisingly, while their categorization indicated selective attention on features determining category membership, their recognition and gaze data exhibited distributed attention among various features. These results suggest a potential decoupling between attention optimization and categorization.