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Authors

Thomas, Sujith

Kapoor, Aditya

Srinivasan, Narayanan

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Effect of a colour-based descriptor and stimuli presentation mode in unsupervised categorization

Sujith Thomas

Birla Institute of Technology Goa Campus, Vasco da gama, Goa, India

Aditya Kapoor

Birla Institute of Technology Goa Campus, Vasco da Gama, Goa, India

Narayanan Srinivasan

University of Allahabad, Allahabad, India

Abstract

In unsupervised categorization, studies have shown that fewer stimuli dimensions are used for categorization with serial presentation compared to concurrent presentation of stimuli. In this study, we investigate how a colour-based multidimensional descriptor might affect the number of dimensions used in categorization. Our results show that a fewer number of dimensions are used when stimuli are presented serially irrespective of the presence of a colour-based descriptor. We found main effects for both the stimuli presentation mode and the colour-based descriptor. The stimuli has the same logical structure across all the conditions. Our results show that the notion of a natural and intuitive grouping of items is affected by meta-level feature descriptors, that are not part of a feature-based representation of stimuli. We discuss the implications of our findings for computational models of categorization, which make predictions based solely on feature-based representation of stimuli.