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

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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.