

Category training affects colour discrimination

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Categorical Perception (CP) of colour is shown when discrimination is faster and more accurate for two colours from the different colour category than for two colours from same categories, even when chromatic separation sizes are equated. There is indirect evidence that categorical colour perception may be learned. For instance, CP is only shown if the category boundary is marked in the subject's language (e.g., Roberson et al., 2000). There is also evidence CP can be induced across a newly learned boundary (Özgen & Davies, 2002), as indicated by performance on a successive same-different discrimination task. However, as the latter measure could be influenced by high level process such as labelling, or other forms of on-line language influence, here we replicate and extend Özgen and Davies's category learning study, to try and pinpoint the nature of the changes underlying category learning. Subjects learned to divide the green region into two new categories 'yellow-green' / 'blue-green' across four days. Together with a control group, they were then tested on green and blue regions, using a target detection task where coloured targets were presented on same- or different-category backgrounds. The trained group showed CP across the new boundary on the target detection task, whereas the controls did not. Moreover, CP was stronger for right visual field targets than for left visual field targets (cf. Drivonikou et al. 2007). The results suggest that learning to categorise stimuli alters their perception at an early stage of visual processing. The findings are related to the debate about the nature and origin of colour CP.

References

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