

Colour categories boundaries are better defined in contextual conditions

R. Benavente, C.A. Parraga and M. Vanrell

In a previous experiment (Parraga et al, *Journal of Imaging Science and Technology*, 53(3), 2009) the boundaries between basic colour categories were measured by asking subjects to categorize colour samples presented in isolation (i.e. on a dark background) using a YES/NO paradigm. Results showed that some boundaries (e.g. green-blue) were very diffuse and the subjects' answers presented bimodal distributions, which were attributed to the emergence of non-basic categories in those regions (e.g. turquoise). To confirm these results we have performed a new experiment focussed on the boundaries where bimodal distributions were more evident. In this new experiment rectangular colour samples were presented surrounded by random colour patches to simulate contextual conditions on a calibrated CRT monitor. The names of two neighbouring colours were shown at the bottom of the screen and subjects selected the boundary between these colours by controlling the chromaticity of the central patch, sliding it across these categories' frontier. Results show that in this new experimental paradigm, the previously uncertain inter-colour category boundaries are better defined and the dispersions (i.e. the bimodal distributions) that occurred in the previous experiment disappear. These results may provide further support to Berlin and Kay's basic colour terms theory.

[Supported by projects TIN2007-64577 and CSD2007-00018 of the Spanish Ministry of Science. RB was funded by the "Juan de la Cierva" fellowship (JCI-2007-627) and CAP was funded by the "Ramón y Cajal" fellowship (RYC-2007-00484)]