COLOR AND EMOTION

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01 BACKGROUND
Recent studies on color affectivity characterize emotional profiles of color in terms of emotional dimensions, thus approaching the issue of emotonal influence of color attributes (e.g. Valdez & Mehrabian, 1994). In addition, the significant influence of Chroma (or saturation) of a color onto human emotion has been consistently confirmed. (Valdez et al., 1994).

02 EXPERIMENT
02.1 subjects
Thirty-seven students (male:9, female:28) from the University of Mannheim served in exchange for extra credit. Participants were undergraduate students: M=23.57, SD=5.55.

02.2 methods

02.2.1 color stimuli : hue and tone categorizations
Five hue categories were fixed and the hue degrees of categories in CIExLab Lch system are:
h=0°(red); h=60° (yellow); h=120° (green); h=240° (blue); h=300° (violet).

From each of them, representative colors of the following five tone segments were chosen (Figure 2).

By using tone categorizations, the Chroma and lightness of a color is recognized according to the relative proportion of vividness.

03 MEASURING EMOTIONAL RESPONSE TO COLOR
Developed by Lang (1980), the Self Assessment Manikin (SAM) is a nonverbal, culture-fair rating system based on a three-dimensional system of emotion consisting of valence, arousal, and dominance.

04 PRACTICAL APPLICATION
The experiment demonstrated how colors were found for a product concept (i.e. ‘low fat’ in the case study), the framework suggested was that emotional responses to color vary stronger with hue, the combination of Chroma and lightness, than with regard to hue.

05 CONCLUSION
Two hypotheses were supported by the results of the experiments: colors elicit emotions as pictures do and emotional responses vary more strongly with regard to Chroma and lightness than with regard to hue. The affective judgment was made by means of SAM that assesses emotional response in valence, arousal, and dominance dimensions of emotion.

06 ACKNOWLEDGEMENT
The present poster is based on a part of a dissertation written by Hyeon-Jeong Suk and supervised by Hans Irtel.

07 REFERENCE

Figure 5 shows the averaged SAM ratings of 25 chromatic colors in terms of the hue category and the tone category with regard to arousal dimension.

The results emphasize the importance of variations of Chroma and lightness concerning emotional responses to colors. Across the entire dimensions, the ranges by tone categories (light green) are bigger than those by hue categories (light red).

The second hypothesis is confirmed: emotional responses to color vary stronger with tone, the combination of Chroma and lightness, than with hue.

Figure 4. Mean differences of predicted by hue (colored robbish) and by Chroma (colored green) i.e. arousal shown by Chroma-Green.

Figure 5. Mean differences of predicted by hue (colored robbish) and by Chroma (colored green) i.e. arousal shown by Chroma-Green.

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