Color affects the intensity of emotions read out from emoticons

Songyang LIAO¹, Katsuaki SAKATA¹, and Galina V. PARAMEI²
(¹Joshibi University of Art and Design; ²Liverpool Hope University)
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Introduction
Conventionally in online communication emoticons are yellow. We asked whether the variation of color affects the emotion read out from emoticons.

Method
Female subjects from Japan (JP: N=24), the United Kingdom (UK: N = 64) and the United States (US: N = 31) all took part in the four computerized experiments. In Experiment 1, we presented with Angry, Sad, Neutral, Surprised, and Happy emoticons (i.e. conveying basic emotions) in Red, Orange, Yellow, Green, Cyan, Blue, Purple, and Gray; 8 colors defined by CIE Yxy coordinates. Subject’s task was to categorize an emotion as fast and as correct as possible by clicking on one of virtual keys presented underneath the emoticon and labeled by one of the 5 basic emotions. In Experiments 2–4, subjects evaluated each stimulus, respectively, on 5 unipolar affective scales with anchors: ‘Not Angry–Angry’, ‘Not happy–Happy’, ‘Not neutral–Neutral’, ‘Not Sad–Sad’, and ‘Not Surprised–Surprised’. In Experiment 2 they were presented with the 5 emoticons in gray, while in Experiment 3 with circles in the 8 colors named above. Finally, in Experiment 4, subjects evaluated the affective meaning of all colored emoticons (5 emoticons x 8 colors).

Results
1) The relation between lightness and the intensity of affective meaning read out from emoticon:
Results showed a correlation between color lightness and the intensity of read-out affective meaning for Angry, Happy and Neutral emoticons. For Angry emoticons, JP and UK were similar in emotion read out affective meaning for the 3 cultures depending on the color. Interestingly, Neutral emoticons, whose color was varied, triggered different intensity attribution to Anger and Sadness meaning among the 3 cultures. By the JP and US, Red Neutral emoticon was perceived as Angry, not Neutral.

Discussion
We found cross-cultural differences in the affective meaning read out from emoticons when their color is varied. The variation is related though to lightness and/or hue. Further, multiple emotions can be attributed to the same emoticon – and these attributions differ, too, among the 3 cultures depending on the color. Finally, our results suggest that congruency of the affective meaning of the emoticon expression and the color augments the conveyed emotional message.

References