Color Response Group

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Proposal: We would like to see if staring at a specific color will impact a person’s reaction time/cognitive ability.

Method: We are going to have a monitor and present people with a variety of colors (blue, red, yellow, etc.) and have one control group that doesn’t have a color shown. We will show them said color for 30 seconds. After that, we will apply a test of either reflexes or cognitive ability (Shapesplosion) and see how they perform by measuring their test time.

Factors: We’ll be testing two factors; color applied to the person and gender. We are going to shoot for a sample size of about 60, we want to have 10 observations in each of the possible combinations (male/female and color 1/color 2/no color).

It is well known that colors an impact on the mind and its processing ability. In the 1964 Journal of Psychology, a study was cited in which participants are given a test where the names of colors are given in different colors than the ones they describe. Participants were observed to falter, stutter, or name incorrectly the colors written.1 Furthermore, in more recent studies, scientists 2 observe a phenomena called Stimulus Onset Asynchrony and the effect of equiluminant colors coupled with reflex tests based on metacontrast experiments, testing to see if exposure to different hues of colors affects the perception of small dots while being subsequently masked by a different object at different time intervals. Red usually has been shown to have a stronger positive effect on perception in these trials.

What we wish to discover in our test is to see if different color hues affect the combined reaction time and cognitive-spatial capacity to fit shapes into corresponded places in Shapesplosion. We also wish to see the effects of gender, and see if more men or women are affected by this phenomenon.

1. Klein, George S. "Semantic power measured through the interference of words with color-naming." *The American journal of psychology* 77.4 (1964): 576-588.

2. Breitmeyer, Bruno G., and Joshua I. Breier. "Effects of background color on reaction time to stimuli varying in size and contrast: Inferences about human M channels." *Vision Research* 34.8 (1994): 1039-1045.

3. Breitmeyer, Bruno G., and Haluk Ogmen. "Recent models and findings in visual backward masking: A comparison, review, and update." *Perception & psychophysics* 62.8 (2000): 1572-1595.

Survey

Would you be willing to help us in a study testing response time and colors?

You will be asked to stare at a color for 30 seconds then complete a response game called Shapespolsion?

We have some quick questions to ask you before we start.

Are you color blind?

Do certain colors cause any eye pain or headaches?

Have you recently been sitting at a computer or staring at a screen?

Did you get plenty of sleep last night?

Do you regularly work at your computer for homework and how many hours?