

The Effect of Color on Personality Traits¹

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Research has shown correlations between color preference and psychiatric disorders, drug and alcohol addicts, and changes in preference in age progression. However, there is a shortage of research on the effect of color on personality assessment. College students were administered the Big Five personality test on one of two different colors of paper (red or blue). Although it was expected that red would increase extroversion scores and that blue would decrease extroversion scores, results showed no differences between groups.

Introduction

Holmes, Fouty, Wurtz and Burdick (1985) examined the relationship between color preference and psychiatric disorders. Participants completed the Luscher Color Test two times. In the Luscher Color Test, each person is presented with eight different cards each with one of eight different colors (gray, blue, green, red, yellow, violet, brown, black). Participants placed the colors in order according to their own color preferences. The test is administered two times because the second tends to be more accurate than the first. Therefore, Holmes, et al. used only the second arrangement of the color cards. Across all ages, women preferred yellow, while red tended to be the second choice. Blue was only second choice in the youngest age group tested. The oldest male group preferred red, whereas all three of the younger groups preferred blue. However, the males in the youngest group preferred red, yellow, and blue about equally (Holmes, et al., 1985).

Although Holmes, et al. (1985) examined psychiatric patients, there was no comparison with non-psychiatric, or “normal” participants. It is reasonable to expect that there might be a difference between psychiatric patients and those with no history of mental illness. Cernovsky (1986) examined both “normal” and chronic drug and alcohol addict patients. Personalities were measured on the MMPI scale and only patients with valid MMPI profiles were used in the study. The patient group tended to have social conflicts, feelings of depression, relationship problems, and difficulty with relaxation. Older patients more

often preferred brown to black. The female patients showed a preference for purple compared with males. An examination of warm versus cold colors showed no correlation in terms of warm and cool colors relative to MMPI variables, age, gender or IQ. The control group of “normal” adults showed no relationship between the ranking of the Luscher test and their MMPI results.

Changes in this study could be made to collect more specific and useable data. Once again in the study there was an uneven amount of male and female subjects. The amounts of male and female subjects were not the same. Within the study the male versus female ratio was off balance. The females way out number the males in both the controlled and the experimental group. It also seems to be the common theme among these color preference studies to use only the Luscher Color Test. The results could be different if/when using not only the same number of male and female subjects but also if a different test was used.

A more recent study was by Dittmar (2001), exhausted possible changes in color preference with age. Two age groups were studied. The young adult age group consisted of 157 men and 270 women. Whereas the younger population, consisting of 183 men and 232 women, were students at a local university. The younger adult ages ranged from 19-44 with a mean of 25.6 years for men and 23.7 for women. The elder groups ages ranged from 52-90 years with both men and women averages being around 68.5 years. This study was conducted differently than the other two studies. In this experiment the participants were

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give a sheet of paper with the names of four colors printed on the page. The experimenter was not concerned with certain shades of colors. Assuming that each person has their own idea of what a certain color looks like, just the words of the color on the page were sufficient. The subjects were asked to pick their most preferred color and their least preferred color of the four given. Blue was chosen as the most preferred color among both sexes. In the younger group the order from most preferred to least preferred was blue, red, green, then yellow. For the older group the order of color preference from most preferred to least preferred was blue, green, red, then yellow. Yellow was the least preferred color in both groups. In this study it shows that gender doesn't make a difference in color preference. It was age that was the divider (Dittmar, 2001).

However, this study leaves a lot of room for changes for more consistent and accurate studies. Once again there was an uneven amount of male and female participants in the study which in turn begs to question whether or not the data collected is accurate or significant. The study did not represent a certain color or shade of the color so it was up to the participant to determine what they like which leaves too much room for participant's creativity. There was also an age gap from 44 to 52 years of age. The fact that there was not a consistent color or colors to choose from leaves room for error.

Lange and Rentfrow referenced a study done by Stone on Designing Effective Study Environments showing that the mood of workers tended to be much more positive when working in a blue environment rather than a red one. The arousal of the individual was much higher when working in the red environment so that when they were asked to do a more thrilling task the red color interfered with their performance. Lange and Rentfrow also referenced Luscher and Scott on their studies of Personality and their color test. Their findings found that introverted people, i.e. people with high internal arousal, preferred much cooler colors like blues and greens because they reduced their inner arousal. On the flip side, extroverts, i.e. people with low internal arousal, were drawn to warmer colors such as reds and oranges to increase their inner arousal. Lange and Rentfrow also state that readers read slower and

comprehend less when reading in a red environment. This suggests that color effects cognitive arousal which in turn can effect, or even hinder, cognitive performance.

Looking at the Murray and Deabler's study on mood-tones, their results indicated the association between mood and color. Their cross-regional study that corresponded with an earlier study by Wexner, proved that Americans across the board associate colors to moods, however, not always in the same way. The subjects were given a set list of words and a set of eight colors in the form of 8.5x11 inch pieces of paper, they were then asked to select the color that best represents the word in the word list. Both Wexner and Murray and Deabler's studies had variations and differences, but they also had some definite similarities. Blue and green were consistent among both studies. The participants overwhelmingly related these two colors with the words Secure, Tender and Calm. These colors were also somewhat systematically not relevant to the word Defiant. Contrasting evidence showed that Red was most correlated with Defiant, Cheerful, Exciting, and Powerful and was by and large not associated with Secure, Tender, and Calm. Indicating that certain colors correspond with certain moods and those certain colors elicit the same strong emotional responses consistently among different groups of people.

Leon, Gillum, Gillum, and Gouze concentrated a portion of her research to looking at personality stability. Her longitudinal study obtained substantial evidence towards personality stability on an individual level. Using the MMPI, she gathered data 4 different times from the same 71 men over a 40 year period. The group of emotionally stable and physically healthy men was reported, in her study, to have a significant degree of personality stability over the 40 years span. The MMPI scores of the men's tests were fairly consistent with some minor fluctuations, supporting that personality is stable over time.

Method

Participants

There were 116 students who participated in this study. The population chosen to randomly take part in the survey process was traditionally aged college students from Robert Morris University located in Moon Township, Pennsylvania. Some of

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the students earned extra credit from the professor of the class in which the study was conducted.

Design

The present study used a 2 (color) x 5 (personality type) design. The dependent variable was the score each student received for each of the five personality traits (agreeableness, openness to experience, neuroticism, extraversion, and conscientiousness).

Materials

Each participant was given a Big Five Inventory (BFI) survey on one of two colors of paper: red or blue. The BFI is a 44 item test designed to measure the Big Five personality traits of: conscientiousness, agreeableness, emotional stability, extroversion, and openness (John & Srivastava, 1999). Although the instructions in the original version of the test asked participants to respond based on how they viewed themselves on a variety of situations, in order to assess state sensitivity to color, the instructions were reworded slightly to emphasize how participants viewed themselves “today”.

Procedure

There were four different psychology classes used to collect data. Each class was assigned a specific color at random such that no group was ever given more than one of the colored surveys.

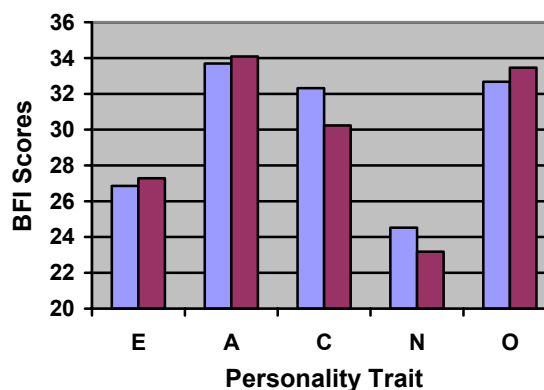
Students were asked to complete, at their own pace, the BFI given to them within their class period. Before handing out the survey, the person administering explained that the survey was to be completed and answered honestly on how the subject was feeling that day. The students were instructed to flip over the test when done and that they would be collected by the instructor. After the surveys were handed out to the class, the students were allowed to take their time with the test.

Results

A 2 (color of paper) x 5 (BFI personality trait) mixed ANOVA was performed on mean personality scores. Paper color was manipulated between subjects, while BFI was manipulated within subjects.

There was no main effect of color, nor was there an interaction. There was, however, a main effect of personality dimension, $F(4, 456) = 63.9, p < .01$, which is depicted in Figure 1.

Figure 1: Mean Big Five Inventory (BFI) personality scores (E = extraversion, A = agreeableness, C = conscientiousness, N = neuroticism, O = openness) for red and blue surveys (blue = left-side bars, red = right-side bars).



Conclusions

Although the results of the study did not prove what was predicted, there is evidence that with a few things altered there could be a different outcome.

As shown, there was a slight difference in the scores of Extraversion for the blue and red sheets. Had more participants been tested, there is a possibility that the difference could gradually increase (or become significant).

Seeing as the only stimulus for the participants was the actual color of the sheet on which they took the BFI, if more stimuli were to be added to the environment, it is possible that the effects of color on personality responses might become more pronounced.

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