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The Influence of Picture Border Color on Perceived Attractiveness

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The influence of color on attraction is a useful area of research, with many sociological and psychological application possibilities. Previous research has examined the relationship between clothing color and attraction, which lead to results finding that the color red influences a higher rating of attraction in the opposite sex. These results came from looking at color as a physical trait on the individual (ie. shirt color). This study examined this concept of color influence from a non-physical trait aspect. Would red have the same influence on attraction if it simply is an association trait rather than a physical trait? Participants were shown a slideshow of black and white pictures with either a red or blue border. Based on the results, it was found that there is a significant influence of the red border when rating members of the opposite sex.

Based on results from conducted studies, it can be concluded that there is a relationship between color and attraction. It is the association and placement of the color that bears further research.

Elliot and Niesta (2008), examined the relationship between the colors red and blue, and men's preference in women. In the study, men were shown two pictures side by side, of the same woman, once in a red shirt and once in a blue shirt (Elliot & Niesta, 2008). Elliot and Niesta(2008) then found that the men in the study preferred the woman in the red shirt. Elliot and Niesta(2008) claimed the men that participated in the study were not aware of the role color played in their attraction to the woman.

Elliot (2010) replicated the Elliot and Niesta (2008) study on men, with a similar study to examine the preferences of women. The design of the study was the same as the study on men,

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and the same results were shown. When women were presented with two pictures of the same man, results showed that a large majority of women reported being more attracted to the man in the red shirt (Elliot, 2010).

A study prior to these examined not only the relationship between color and attractiveness, but also the associations and connotations that are made about specific colors (Yener, 1982). Yener (1982) found that participants were able to articulate the personality traits that they associated to different colors, noting that the association between attraction and color preference may not be an unconscious phenomenon.

This preference of red in both men and women of the opposite sex is a topic that has been present in a number of research projects. However; an aspect of this phenomenon that has not been examined by notable research is the preference in same sex association. When men are asked to rate other men or women asked to rate other women, would they still show the same preference towards the color red? Would men report being more attracted to other men in red as well as women? When rating both men and women, it can be hypothesized that a non-physical association characteristic of color will cause the same attraction to the color red.

From this previous study's results, the design for this study can be formatted. I will explore the idea that this attraction to red could be a non-physical trait influence. Using the border color as the only association, the color effect can be better measured. Based on previous research, men and women will rate pictures of individuals with a red border higher that individuals with a blue border.

Method

Participants

Participants in this study were recruited using the Lindenwood University Participant Pool (LPP). The LPP is made up of undergraduate students enrolled in entry-level psychology and sociology courses, anthropology courses, and athletic training and exercise science courses. The researcher recruited 14 women and 22 men, for a total of 36 participants. These participants ranged in age from 18 years to 28 years old. Also noted during the study, 15 male participants displayed signs of discomfort with the request to rate member of the same sex on attractivness.

Materials and Procedures

In order to recruit participants, the researcher used an LPP issued sign-up sheet, and this was placed on the bulletin board across from room 407 in Young Hall. Participants then read a brief description of the study, explaining they would be asked to rate individuals on their attractiveness, and that the study would take 10 min maximum. Participants then signed up for individual time slots, and were reminded by the researcher about the appointment 24 hours prior to their allotted time.

In this study, research was conducted in the psychology lab on the lower level of Young Hall. These rooms were equipped with at least two desks, and quite low ceilings. Once the participant arrived to the research facility that was previously assigned, they were asked to sign in on the LPP issued sign-in sheet. They were then asked to sit at a desk and given two copies of an Informed Consent Form (see Appendix A) prepared by the researcher, one copy for the participant and a second for the researcher. After signing the form the researcher explained that the participant was free to remove themselves from the study at any time if they wish, without prejudice or penalty, and their data would not be used in the overall evaluation of data. Participants were then given a data collection sheet (see Appendix B), which asked for their sex

and their age in years. All participants in this study were asked to use a provided black pen in order to remove any identifying factor from their collection sheet.

The students were then shown a slide show of 28 pictures on an Apple iPad. These pictures were collected from individuals with no affiliation to Lindenwood University. The pictures were in black and white, so the border color was the only hue. The researcher explained to the participant that they were about to view a series of pictures and they were going to be rating each individual on a scale of 1 to 10, 1 being the least attractive and 10 being the most attractive. The participants were also made aware of the quickness of the slide show. They would not have time to scrutinize each picture, and then decide on a rating. The researcher explained that it is important to give their immediate impression of the photo when it is shown. The participants were to record their ratings on the Information Collection Sheet. Each photo was the same size, and each was shown to the participant for 3 sec. At the conclusion of the slide show the participants were debriefed about the study and given a Feedback Letter (see Appendix C) prepared by the researcher. It was then explained to the participant that there were two repeated pictures of men and two repeated pictures of women, each time with a different color border. The researcher then explained that it is the goal of this study to see if color has an effect on perceived attractiveness, and made the participants aware that only their ratings for those four repeated photos will actually be included in the overall data conclusion. An LPP issued Participant Receipt was given to the participant in order to ensure they receive their extra credit in their LPP eligible class. After the participant left, the researcher highlighted the corresponding picture numbers on the Information Collection Sheet and marked which was with a red border and which was with a blue. This is done for organizational purposes, in order to insure for proper data analysis.

After two months of allotted time for conducted research, the researcher took all Information Collection Sheets, and compiled all demographic information into a SPSS, along with the data.

Results

The data collected were first analyzed using a paired *t*-test to determine consistency of ratings for pictured individuals. A statistically significant finding was found for each pair of pictures, so for the remaining analysis the scores were combined into only four computed variables, Female-Red, Female-Blue, Male-Red, and Male-Blue.

Using a 2 Sex X 4 Rating mixed ANOVA, the data collected found there was enough significance that we are able to reject the null hypothesis, and found that men and women will rate pictures with a red border higher than pictures with a blue border. Men rated woman with the red border (m=13.2727, sd=2.097) higher than the woman with the blue border (m=11.3182, sd=1.862). Also, women rated men with a red border (m=14.2857, sd=2.301) higher than men with a blue border (m=12.5714, sd=1.828).

With a main effect of sex, I found a significance of $F(1,34) = 14.46$, $p<.05$ (See Table 1). The ratings of the pictured individuals were significantly different between female and male participants.

Since the data collected did not meet the characteristic qualifications for sphericity, the Greenhouse-Geisser factor was used to adjust the degree of freedom to determine the significance. Using the adjusted degrees of freedom, I found a significance of $F(1.32, 44.872) = 6.623$, $p<.05$ for the main effect of rating. The same adjusted degrees of freedom were used to find a significance level of $F(1.32, 44.872) = 17.713$, $p<.05$ for the interaction of sex and rating.

Discussion

The results of this study coincide with the findings of Elliot and Niesta (2008, 2010). There was a significant result to support the hypothesis that individuals would rate members of the opposite sex higher in the picture with a red border, than the picture with a blue border. Men significantly rated the red-bordered women higher than the blue-bordered women. Also, women significantly rated red-bordered men higher than the blue-bordered men (see Table 1). Based on the data, I can conclude that men rate women with a red association higher than women with a blue association. Also, women will rate men with a red association higher than men with a blue association. To build off of previous research, the color red does not have to be a physical trait (ie. shirt color) in order to have an influence on attraction.

Using data from post-hoc tests we were able to see tends that were not hypothesized at the beginning of this research. I found that men rated pictures of other men significantly lower than pictures of women, while women rated both pictures of men and women relatively similar (see Table 2).

Another trend that was found was during participation; male participants were much more notably uncomfortable with rating members of the same sex than female participants. Fifteen male participants of a total 22 male participants, made some sort of comment of discomfort hen presented with the male pictures to rate on attractiveness. What is interesting is that all participants were made aware that they were going to be asked to rate pictures of both sexes, and the uncomfortable behavior did not show until these men were actually presented with a male picture to rate.

The results of this study may lead to further investigation in the rating of the same sex. Based on the data from this study, there could be a trend of men rating other men with a blue association higher than men with a red association. This is an interesting phenomenon because of the significantly higher rating of women with a red association.

In further research it may be tested that the relationship between sex and comfort of rating individuals of the same sex, may have a relationship with scores in agreeableness and conscientiousness on the Big-5 trait analysis.

References

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Table 1

	Participant Sex	Mean	Std. Deviation	N
FemaleRed	Male	13.2727	2.097	22
	Female	12.6429	1.865	14
FemaleBlue	Male	11.3182	1.862	22
	Female	11.9286	1.639	14
MaleRed	Male	7.3636	4.170	22
	Female	14.2857	2.301	14
MaleBlue	Male	8.8636	4.400	22
	Female	12.5714	1.828	14

Table 2

Participant Sex	Picture	Mean	N	Std. Deviation
Male	FemaleRed	13.2727	22	2.09720
	FemaleBlue	11.3182	22	1.86155
	MaleRed	7.3636	22	4.16957
	MaleBlue	8.8636	22	4.40017
Female	FemaleRed	12.6429	14	1.86495
	FemaleBlue	11.9286	14	1.63915
	MaleRed	14.2857	14	2.30146
	MaleBlue	12.5714	14	1.82775

Appendix A

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to view a collection of pictures and rate their attractiveness on a Likert scale of 1-10, 10 being the most attractive and 1 being the least attractive. I also understand that I will only be asked to reveal two simple demographic information about myself, age and sex, and that no other identifying information about myself will be collected. I am aware that I am free to skip any questions asked on the collection sheet. I am also aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

_____Date: _____
(Signature of participant)

_____ Date: _____
(Signature of researcher obtaining consent)

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Appendix B

INFORMATION COLLECTION SHEET

Set 1

1 _____ ***Sex (Circle One): MALE FEMALE***

2 _____ ***Age:_____years***

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Appendix C

Feedback Letter

Thank you for participating in my study. The picture set used in this study was created to examine the effect of color on a person's attractiveness. In the set, two of the pictures were used twice, each with different color stimuli. These two pictures and your corresponding ratings are the only two that will be used in the data analysis. Through the analysis, I will be able to determine if there was a significant influence of the color stimuli on the rating of attractiveness.

The purpose of this study was to examine the data collected over all, not your individual responses. Your data contribution will be included in the final data presentation, along with all other participants. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I can make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

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