

**A Replication of Red, Rank and Romance in Women Viewing Men**

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If one color could change the way people feel about what they are looking at, many industries would benefit from this knowledge. Companies would use it to advertise products. People would use it in interviews or on dates. Clothing companies would capitalize on it. This principle, the red effect, is the focus of this research. The red effect is the idea that people with the color red on them will be perceived as more attractive. The question being delved into in this study is whether the color red truly can increase women's perception of male attractiveness.

In the original research, Elliot et al. (2010) conducted a study to determine whether color, specifically red, would increase women's attraction to men and could affect psychological functioning. After several experiments with participants rating photos based on perceived attractiveness, Elliot et al. (2010) came to the conclusion that their original hypothesis of the red effect is supported and women who see men in red consider them to have a higher status and consider them to be more powerful and attractive. Furthermore, this shows that color can have an impact on psychological responses and that color can be associated with factors such as status and attraction.

Similarly, Elliot and Pazda (2012) conducted studies showing that women who were more interested in pursuing casual sex on dating websites were also more likely to wear the color red in their profiles. Although black was the most common color worn by women who were on the website for casual sex, red also showed a correlation with this intent. These results demonstrate that the color red is used as a sexual signal and an indicator of being interested in sex. In the same sense as the Elliot et al. (2010) study, this study is in accordance with the theme that the color red is linked to signaling attraction, but in this case, it is sexual attraction.

Kayser et al. (2010) conducted two experiments regarding the color red and how people behave when seeing someone dressed in red versus another color. In the first experiment, they found men were more likely to ask women dressed in red more personal questions than if they were wearing green. In the second experiment, men chose to sit closer to women dressed in red than women dressed in blue. These actions highlight how influential color can be on behavior, which also relates to the Elliot et al. (2010) study and similarly shows that color impacts psychological responses. While these results are not sexual attraction, such as the Elliot and Pazda (2012) study, it also demonstrates that more interest is shown to people in the color red. All three of these studies display the correlation between the color red and attention drawn to the people wearing it with the perception of them being more attractive.

Berthold et al. (2017) conducted research to determine whether people would find themselves more attractive in red or blue clothing. Unlike the other studies, Berthold et al. (2017) focused on self-perception, rather than perception of others. Similar to the other studies, the color red had a positive influence on perception for attractiveness. After conducting the experiments, they found it rings true that even based on self-perception, people perceived themselves as being more attractive in the red shirt. Along with this, the participants rated their perceived self-status as being higher with the red shirt as well. These findings of how red is seen by individuals looking at themselves are in agreement with the way red is perceived by other people. Berthold et al. (2017) concluded that red not only makes others see individuals as more powerful and attractive, but it also makes them see themselves with this elevated status as well.

While all these studies seem to replicate the results of the original Elliot et al. (2010) findings, there are some restrictions to these implications in additional research. A study by Pollet et al. (2019) analyzed the results of two studies replicating if red products would make

consumers rate them as more desirable. In both studies, they came to the conclusion that the red effect is not significant. While they concluded that someone holding a red object will increase their perceived attractiveness, it was not to a significant degree. However, both these studies were based on the women in the photos holding a laptop, whereas the other studies have been based on the women's clothing or background, which are not physical objects like this one. This may cause some discrepancy between the studies; however, these studies still found no significant main effects between the color red and ratings of attraction. To further this inconsistency in the findings of the red effect, Young (2015) designed two experiments to determine if the connection between red and perception of attractiveness works for all faces, or only on faces that have already previously been established to be attractive. The correlation between the color red and attraction has firmly been developed, but this study was created to determine under what conditions this holds true. These experiments found that the attraction rating was predicated on the baseline attractiveness of the women in the photos. When participants were shown photos of unattractive female faces, there was no main effect of color on attractiveness rating. Undoubtedly, the color red plays a role in human behavior and perceptions of other humans, but this study demonstrates the boundaries of this correlation and that it only renders accurate for initially attractive female faces, and that may not be statistically significant to say the color red will have a significant influence, which is the research question at hand. I hypothesize that while the color red can increase perceived attractiveness to some extent, it will not be a significant effect on perceived attractiveness, perceived sexual attraction or perceived likability.

## **Method**

### **Participants**

The participants in this study were all women. 116 undergraduate college students from various universities across the world voluntarily participated in this study in exchange for extra credit in a class.

## **Materials**

These materials were gathered from the original Elliot et al. (2010) study. Two black and white photos were used for the study. Each photo was 4x6 inches centered on a 8.5x11 inch page, but one had a gray background with parameters LCh(50.0, 59.6, 31.3) and the red had parameters LCh(50.0, 59.6, 31.3). The photo came from a standard photo set and featured a shot only including the head and upper torso of a brown-haired Latino man wearing a sweater with stripes. To measure perceived attractiveness, participants were asked three questions: “How attractive do you think this person is?” “How pleasant is this person to look at?” and “If I were to meet the person in this picture face to face, I would think he is attractive?” Students were asked to rate these questions from a scale from 1, being *not at all attractive*, to 9, being *extremely attractive*. To measure perceived sexual attraction, participants also used the 9-item scale with 1 being *no, definitely not* and 9 being *yes, definitely*. They were asked to rate on this scale their likeliness of wanting to date and kiss the man in the photo. To measure perceived likability, a likability measure similar to the other scales, was utilized. On a range from 1-6, participants were asked about the featured man’s likability and perception of his positive traits, such as honesty or kindness with 1 being *not at all* and 6 being *very much*.

## **Design**

The design was the same as the original Elliot et al. (2010) study. The dependent variable for this study was to find out what women are rating their perceptions of men on a gray background versus on a red background. Female participants were being asked to rate the man in

the photos on scales of perceived attractiveness, sexual attraction and likability. The independent variables were whether the women were shown the same photo on a red or a gray background.

This was a between-subjects research design.

### **Procedure**

Coming from the original Elliot et al. (2010) study, every participant in this study had informed consent and chose to participate in this study, but did not know the purpose of the study. First, they were given 5 seconds to look at the photo of the man on either the gray or the red background. After this, they no longer had the photo in front of them and rated him based on perceived attractiveness, perceived sexual attraction and his overall likability. Each participant only saw one photo in this between-subjects design in order to avoid the risk of them understanding the purpose of the study.

### **Results**

An independent samples t-test was conducted to establish whether there was a significant influence of background color on ratings of physical attractiveness, disclosing  $t(114) = -1.54, p = 0.878, d = -0.029$ . The men in the red condition were still rated as having increased physical attractiveness ( $M=5.96, SD=1.51$ , and  $M=6.01, SD= 1.56$ , respectively). An independent samples t-test was conducted to determine whether there was a significant influence of background color on ratings of sexual attractiveness, presenting  $t(114) = -1.466, p = 0.145, d = -0.273$ . Again, the men in the red condition were rated as having higher sexual attractiveness than those in the gray condition ( $M=4.14, SD=1.74$  and  $M=4.64, SD=1.92$ , respectively). An independent samples t-test was conducted to discover whether there was a significant influence of background color on ratings of likability, showing  $t(114) = 0.350, p = 0.727, d = 0.065$ . For this test, the men in the gray background were given a higher average likability score than the men in the red condition ( $M= 6.83, SD= 0.83$  and  $M=6.76, SD= 1.19$ ). Because the 2-tailed

significance value  $p$  was greater than 0.05 for all independent samples t-tests, the null hypothesis was accepted that there was no significant difference between the ratings of the two conditions.

### **Discussion**

This study was conducted to determine whether the red effect is significant and whether the color red actually has an effect on women's attraction to men. Color psychology can have pivotal implications and could change the way people use color to influence others, which makes this study so important. After conducting an analysis of these interactions between the color red and how it may affect perception, it has been concluded that there was no significant correlation between red and women's attraction to men. In all categories identified, physical attractiveness, sexual attractiveness and likability, there was a failure to see a significant increase of women's attraction to men when seeing the man on a red background.

This study had a wider variety of geographical locations of participants compared to the original study (Elliot et al. 2010), which could contribute to the failure to replicate. What is considered moderately attractive is very subjective and varies by culture. While the original study's participants may have all considered the man in the photos to be attractive, the participants in the replication may have not deemed him to be as attractive. Considering the replication study was conducted years after the original, this lapse in time could also contribute to the different results and a different standard of attractiveness. Relating this to the Young (2015) research, this would make sense, as he concluded that a baseline attractiveness must be present in order for the red effect to take effect. Additionally, the original study was conducted on both heterosexual and bisexual participants. However, the replication study does not specify the sexual orientation of participants, which could potentially lead to a discrepancy and a difference in the results between the two. Similarly, the replication data does not specify the mean age of

participants, which could also cause different results. Although these are all slight differences between participants and their data, that can shift the results and all be factors in the failure to replicate the original.

Both Elliot and Pazda (2012) and Kayser et al. (2010) were able to conceptually come to similar findings as the original Elliot et al. (2010) study. However, the replication results differ from all of these findings. Similar to the Elliot and Pazda (2012) study, the replication did show that sexual attractiveness was rated higher when connected to the color red, but the effect was not large enough for it to be considered significant. Considering Elliot and Pazda (2012) is about red as a sexual signal, but not necessarily red being correlated to women finding men more attractive, this variance makes sense. This replication does concur with the findings of Young (2015), because he designed experiments revealing that the red effect is only accurate under certain conditions where there is a baseline attractiveness, which is also what may have influenced the replication results, being the data was collected for a different group of people in a different time. Pollet et al. (2019) also concluded that the color red does not make a product seem more desirable and had no significant main effects between red and rating of attractions. Despite the study being about a product rather than people, it similarly shows that the red effect is not consequential enough for it to be considered significant. As might be expected, the replication study contains some methodological limitations. As mentioned earlier, the determination of what is considered attractive is very subjective and may have skewed results based on cultural differences of interpretation of attractiveness. Another limitation might be that the age group in this study is relatively restrictive, considering all participants are undergraduate students and this is not representative of the general population.



There are several implications that these replication findings have and they lead to some potential directions for future research to go in. First of all, it shows that the red effect is limited and using the color red will not automatically make the person, ad, product etc. seem more desirable. However, it opens the door for future research to determine at what point exactly does the red effect become significant and how can it be used? There is definitely a pattern of the color red being linked to increased perception of attractiveness and sexual attraction. Just because it was not a significant effect in this replication does not mean it will not be a significant effect in any other situation. Future research can inquire about what scenarios would actually benefit from the color red being used and color psychology should continue to be studied to find in what ways and to what extent color influences human behavior.

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