

Physical Appearance, Attractiveness and Relationships: Is the Display Versus Avoidance of the Color Red a Strategic Mating Signal?

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Abstract

The present article focuses on the role of situational factors - such as the color red - and their influence on what humans notice in others. Humans form impressions of others instantly. These impressions are predominantly based on physical appearance, which is part due to a person's search for indicators of a potential partner's fitness. Attractive individuals are associated with all sorts of positive qualities, whereas their less attractive counterparts are less favorably depicted. This perception process of physical attractiveness is associated with health in male and female faces, and from an evolutionary point of view, serves the survival and the reproductive success of the perceiver. The meaning of the color red for approach and avoidance behavior is demonstrated in a recent study, which shows that women's use (or avoidance) of red clothing, accessories, and make-up may serve as a subtle and strategic indicator of (missing) sexual interest.

Keywords: Human sexuality; Attraction; Approach and avoidance behavior; Red; Attractiveness

Social and Evolutionary Psychological Determinants of Attractiveness

Imagine you are on a dating website and come across Sally, an attractive woman, who displays a red shirt in her profile picture. Does the fact that Sally shows red in her attire imply that she is more interested to find a mate compared with Maggie, an equally attractive woman, who does not display red in her partner profile? Indeed, there is first evidence for a link between red and sexual attractiveness. When interested in casual sex, but not other types of relationships, women were more inclined to wear red on a dating website [1]. More generally speaking, recent studies suggest that men perceive women's appearance as more attractive and sexually desirable, if these women are paired with red [2].

The question why humans care so much about physical appearance in the first place is an old one. For centuries, human beauty has occupied the minds of artists, poets and philosophers. One of the first, who studied beauty more systematically, can be traced back to the ancient Greeks, namely Pythagoras. The Greek mathematician and philosopher of the sixth century BC is said to have first systematically investigated physical attractiveness [3]. Like for the ancient Greeks, for Pythagoras beauty was a matter of the right proportions, or "golden ratios." Those symmetrical rules were not only applied to human anatomy, but also applied to what was considered being beautiful in architecture, music and art [4].

In psychological research, determinants of beauty and attractiveness were target of investigation with the purpose of exploring the nature of interpersonal attraction. Interestingly, it was not a hot topic in psychological research until the 1960's with some notable exceptions. Harris [5], for example, examined empirically assortative mating on a variety of factors (morphological traits like length of forearms, as well as psychological characteristics like intelligence). Hill [6] on his research on mate choice characteristics for example was one of the first researchers interested in mate choice.

Social psychologists examined early the role of situational factors, like proximity on interpersonal attraction [7]. They found that students who lived door to door were more likely attracted to each other than

students who lived on a different floor in the same dormitory. In the 1960's, social psychologists intensified exploring the human mind to understand better, why some individuals are attracted to each other. The contributions from Byrne [8] and Newcomb [9] on the role of similarity initiated an era of great interest on this topic. As Elliot Aronson put it "[the aim] is to understand what makes people like one another" [10]. What do we know today about the structure of motivations and processes that lead to questions of social interactions and mate search?

Why We Approach or Avoid Potential Partners

Whether we see a person face-to-face, on TV, in a movie or on a photo, only seconds suffice to form an impression. According to social psychologists, humans form first impressions instantly and based on what people initially notice in others. These impressions are predominantly based on physical appearance [11], part of which is due to our search for indicators of a potential partner's fitness.

More importantly, another person's appearance is also known to influence how we think about his or her personality traits and probable life outcomes, such as marital happiness and career success. For example, to attractive individuals we attribute a higher level of honesty, a better adjustment [12], greater happiness, more success and more sociability than we do to their less attractive counterparts. This attractiveness bias can be learned first by direct observations of attractive and less attractive people in our social environment and second, by exposure to cultural representations of attractive and less attractive people. Moreover, physical attractiveness is aesthetically pleasing and therefore, may elicit positive affect that leads perceivers to

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infer that attractive people have favorable characteristics. This “what is beautiful is good” stereotype has been replicated many times since then. Conversely, it led to the question whether the reversal entails a “what is ugly is bad” judgment.

The process of associating beauty with goodness and ugliness with its opposite starts as early as in childhood when children in school observe their peers to tease and ridicule unattractive children [13]. Within Western European and North American culture, mass media outlets contribute to this bias further by imbuing attractive individuals with all sorts of positive qualities [14]. Less attractive persons, however, are less favorably depicted [15]. Another study by Klein and Shiffman [16] found the overriding tendency in cartoons to provide positive messages about being attractive and negative messages about being unattractive.

At the same time, some evidence speaks against the notion, that attractiveness is solely culturally determined. For instance, already very young children (2-3 months old) focus their attention more on attractive (compared to unattractive) faces [17,18]. Neuroscientists found, that especially the orbitofrontal cortex and the amygdala are involved in the perception of physical attractive faces [19,20]. This line of research recommends that there is also an early, biological disposition involved in the perception of physical attractiveness. However, these approaches do not explain, which attributes are considered as attractive and why. From an evolutionary point of view, it is assumed that physical attractiveness is one signal for both good genes and current health, and thus, may enhance reproductive success.

Physical attractiveness might also be indicative for the absence of current diseases. Animals of many kinds (e.g. from nematode worms to chimpanzees) avoid contact with things, which appear to pose some sort of infection risk [21-23], a sort of behavior that can be interpreted as part of the behavioral immune system [24,25].

The human face is an important source of information for signs of disease. Of the 25 diseases that currently and in the past caused the highest human mortality [26], 23 show symptoms on the face [27]. From this perspective, the perception of physical attractiveness might be correlated with health. For example, Rhodes et al. [28] found large correlations between physical attractiveness and perceived health in male ($r > 0.72$) and female faces ($r > 0.79$).

Taken together, we perceive individuals as attractive, because of their good genes and their current perceived health. From an evolutionary point of view, these mechanisms support the survival and the reproductive success of the perceiver.

If we go back to our initial example, what is the impact of the color red on perceived attractiveness based on the two above stated accounts provided by social and evolutionary psychology? Genes and health are important characteristics following to which people tend to form their mate criteria. Although neither can be manipulated for the sake of attracting a promising partner, research demonstrates that red enhances the perceived sexual receptivity of in women [29] and status in men [30] and should therefore be used to attract a desirable opposite but not same sex person.

The Meaning of the Color Red for Approach and Avoidance Behavior in the Mating Context

From a nurture point of view, one plausible explanation for why the color red is associated with attractiveness and desirability may refer to the socialization and learning processes. When paired with the

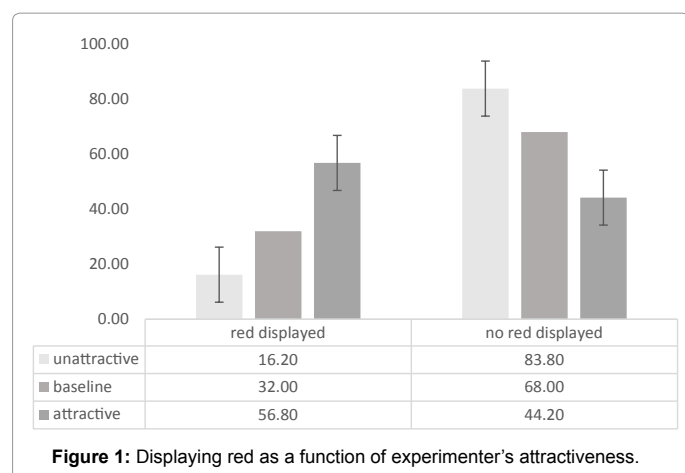
color red, for instance, in red roses, in red hearts on Valentine’s Day, red lipstick, and red light districts, positive events will be associated with love, passion, and romantic contexts. Women, in particular, are evaluated as more attractive by men when those women display the color red. For instance, men asked a target woman in red compared with one not displaying red, more intimate questions and chose to sit closer [31]. Indeed, evidence suggests that red’s positive effect on attractiveness may be a result of its specific link to perceived sexual receptivity and desirability [29].

There may be deeper biological reasons for red’s association with sexuality, as well. For example, reddish skin tone can signal high levels of cardiovascular health [32] and there are important reproductive reasons for preferring potential mates who are healthy [33]. Indeed, several findings suggest that the link between red and sexuality may not be a product of societal conditioning alone, but might also have roots in humans’ biological heritage.

First, red ornamentation is associated with fertility and attraction in many nonhuman primates [34]. Second, there is cross-cultural evidence for the red-sexuality link. For instance, even though red has a generally negative connotation in traditional small-scale societies in rural Burkina Faso (representing bad luck, sickness, and death), the red-attraction link (specifically, the culturally appropriate expression of romantic attraction) is still present, as red enhances women’s attractiveness to men in that culture [35]. Similarly, numerous ethnographic records (e.g. the use of red ochre for grooming and wedding rituals in Africa), point to the possible universality of the link between red and sexuality. Third, according to a recent study by Schwarz and Singer [36] the color red yields perceptions of a woman’s underlying reproductive value by enhancing men’s evaluations of young (but not older) women’s sexual attractiveness; that is, the effect is seen only in fertile women, not in women in menopause or post-fertility. This body of research is consistent with the possibility that the link between red and attraction is rooted in human evolutionary biology. Cultural conditioning could, in turn, reinforce and extend this link.

According to this two-fold rationale on why red enhances perceptions of female attractiveness, one might wonder, whether women strategically display the color red when anticipating an interaction with an attractive man. Conversely, would women avoid wearing red when anticipating an interaction with a relatively unattractive man? Results from a recent study [37] suggest that the answer to both questions is affirmative. Consistent with prior research on the link between red and sexuality, the present findings indicate that women’s use of red clothing, accessories, and/or make-up can indeed serve as a subtle and strategic indicator of sexual interest. A higher percentage of female participants displayed red when they expected to interact with an attractive (vs. an unattractive) male experimenter. Moreover, the percentage of participants wearing red in the attractive condition was higher than in a naturalistic baseline condition, and – notably – the percentage of women wearing red in the unattractiveness condition was lower than in the naturalistic baseline (Figure 1). This study overcame limitations of prior research by measuring women’s natural behavior (i.e., spontaneous choice of clothing, accessories and make-up). Women actually selected their outfit from their *own* clothes and attire in their natural environment (i.e., at their own home) and were not alerted to the study’s aim of assessing their choice of color.

As the reproductive capacity of women is more limited compared to men [38], the quality of sexual partners is more important for them. Accordingly, women are expected to seek partners with high mate value (e.g. attractive) and to avoid partners with low mate value (e.g.



unattractive) to enhance reproductive success [39,40]. Any signal of interest to unattractive (and hence, unhealthy partners) should lower their reproductive success. Thus, the use of red in clothing, accessories and/or make-up could be an adaptive way to attract a partner with high and to avoid a partner with low mate value.

Conclusion

As clothing choices and their signals they send are essential in people's daily life and interactions, it is interesting to consider the implications more broadly. In general, women might avoid red in situations in which their aim is to blend in rather than to stand out or in situations in which they wish to avoid unwanted mating attention. These results might not only have relevance for designers and clients of online dating services who are interested in an "optimal" appearance, but also for people working in marketing and in the field of communication (i.e., for using the color red to persuade people to buy certain products or for conveying specific messages, such as in political or societal contexts). In addition, it is possible that the use and avoidance of the color red might have implications in clinical contexts: In particular, women who are socially anxious or high in introversion might be cautious in their use of red. The use of red could also have implications for workplace interactions, as the color red could signal (potentially inappropriate) levels of attraction toward opposite-sex coworkers. The degree to which the present results and these broader implications also apply to men (i.e., whether they also strategically use the color red in mating contexts; for instance, to signal attractiveness, status or dominance) is an open question worthy of subsequent research [30].

To sum up, women may use more red in their attire if they want to initiate contact and attract a potential mate's interest. In the absence of additional important information pertaining to a person's trait and character, this is a mate-strategy worth investigating. Of course, there are plenty of relationships where first impressions do not play a role any longer in defining its quality. Indeed, findings suggest that physical attractiveness may be less important in the perception of friends, family members and co-workers than in the perception of strangers, because there is considerable additional 'qualifying' information about people close to them.

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