PROFESSIONAL ARTICLE

EvoS Journal:
The Journal of the Evolutionary Studies Consortium

A Choice of Color: Does Lingerie Color Affect Perceived Attractiveness and Evolutionary Fitness?

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ABSTRACT

Prior research examining the effect of color on perceived attractiveness is equivocal. Also, no research has examined how the color of lingerie affects perceptions. This research explored the effect of the color of lingerie that a woman was wearing on individuals' perceptions of her attractiveness and evolutionary fitness. Three colors of lingerie were used in this study: Black lingerie, Red lingerie, and White lingerie. These images were presented to 72 men and 82 women. Participants rated the woman's perceived physical attractiveness, sexual attractiveness, trustworthiness, nurturance, masculinity, femininity, dominance, healthiness, enthusiasm, social competence, affectionateness, intelligence, short term mate potential, long term mate potential, parenting ability, success, status, and age. It was hypothesized that the woman in white lingerie would be rated as most attractive and most evolutionarily fit. The results were partially consistent with the hypothesis. Lingerie color did not affect perceived attractiveness. But, the woman in white lingerie was rated as friendliest, most successful, best mate, and healthiest.

KEYWORDS

Lingerie, Color, Lace, Beauty, Attraction

Every day people make assumptions about each other based solely upon clothing alone. Whether you are on a first date with a person you do not know well, or moving into a new apartment building and introducing yourself to your new roommate, people are constantly making assumptions about others based on what they are wearing (see, Bowman & Lavater, 1992; Freeman, Penner, Saperstein, Scheutz, & Ambady, 2011, Kwon, & Johnson-Hillery, 1998). While the effect of outerwear color on people's perceptions of others has been studied, the effect of underwear color has not. In today's fast paced dating world, the initial attractiveness of an individual is very important (Etcoff, 2011).

The research on the color of an individual's outerwear is varied. Caro (2005), Elliot and Niesta (2008) and Nunn (1999) point out that the color red enhances a male's attraction to females in numerous non-human primate species. Exploring how

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there are parallel effects regarding the color red in humans, a number of researchers report that the color red enhances perceptions of women's attractiveness, sexual receptiveness, and sexual intent (Elliot & Niesta, 2008; Elliot, Tracy, Pazda, & Beall, 2013; Guéguen, 2012; Guéguen & Jacob, 2013; Niesta, Kayser, Elliot, & Feltman, 2010; Pazda, Elliot, & Greitemeyer, 2012, 2014; Pazda, Prokop, & Elliot, 2014; Roberts, Owen, & Havlicek, 2010; Young, 2015). Red color is said to mimic bodily and facial sexual signals that occur to attract mates (Morris, 1994). Thus, men and women execute an adaptation where they are more likely to wear red when they want to appear maximally attractive to potential mates (Elliot, Greitemeyer, & Pazda, 2012; Kramer & Mulgrew, 2018). But, is red the only color individual's wear when they want to attract others?

Kramer and Mulgrew (2018) report that people also wear more black clothing when trying to appear more attractive. Pazda, et al., (2014) report that black clothing affects attractiveness via fashionableness. So, black clothing can also enhance attractiveness. Are there other clothing colors that may also enhance attractiveness?

White clothing may also enhance women's attractiveness. One of the criteria men employ when judging women's attractiveness is femininity (Wade, 2000, 2003). Feinman and Gill (1978) report that men associate white colors with femininity and purity. So, it is possible that white colored clothing may also enhance women's attractiveness. However, research has not examined the effect of white colored clothing on women's attractiveness. Additionally, while the aforementioned research shows that red, and black clothing can enhance women's attractiveness, that research has focused exclusively on outer clothing. To date no research has examined whether or not the aforementioned color effects also occur for perceptions of women wearing lingerie. The present research examined the perceived attractiveness and evolutionary fitness of a woman wearing black lingerie, red lingerie, or white lingerie.

Hypothesis

Because the findings for red and black clothing both enhance perceived attractiveness one might expect a woman wearing red lingerie to be rated as most appealing and evolutionarily fit. But, since women's perceived femininity can be enhanced by wearing white and men's perceptions of women's attractiveness and evolutionary fitness are strongly affected by evolutionary motivations surrounding femininity (Wade, 2000, 2003) the woman wearing white lingerie may be rated as most attractive and most evolutionarily fit.

METHODS

Participants

Participants were 154 (72 males, 82 females) individuals from a private University in the Northeastern US, a West Coast US University, Facebook groups,

and various other Universities. They ranged in age from 18 to 65, *M* = 21.90, *SD* = 5.62.

Materials

A stock image (Figure 1) of a brunette woman in plain white underwear standing tall with her legs planted straight ahead and her arms by her sides was selected as the stimulus image. This image was modified using Photoshop to create two additional images of her wearing black lingerie (Figure 2), and red lingerie (Figure 3). The image was presented on the same page as the questions which participants answered.

Procedure

Participants received an email link to an online questionnaire containing questions assessing perceived: physical attractiveness, sexual attractiveness, trustworthiness, nurturance, masculinity, femininity, healthiness, enthusiasm, social competence, affectionateness, friendliness, intelligence, dominance, age, good mate, short term mate potential, long term mate potential, parenting ability, success, and status from Wade, Auer, and Roth (2009) and Wade, Welling, Reeve, and Moran (2019). These questions were assessed on seven-point scales of 1 = not very, 4 = somewhat, and 7 = very. Participants rated each image on all of the items. The items were presented in a random order for each participant also. In addition to these questions, participants also completed the MC-10 Social Desirability Scale (Strahan & Gerbasi, 1972) to allow for the control of socially desirable responding biases statistically. Demographic questions assessing age, race, sex, sexual orientation, prior relationship experience, current relationship status, sexual experience history, and hormonal birth control usage (for women) were also included. The survey was approved by the local IRB. The design was a between-subjects design where each participant rated only one of the images.

RESULTS

Several 3 (image) x 2 (sex of participant) MANCOVA's were computed. A 3 (image) x 2 (sex of participant) MANCOVA with Social Desirability score included as a covariate revealed a significant multivariate effect for image, F (40, 236) = 1.62, p = .015, $\eta 2$ = .22. A significant multivariate effect for sex of participant was also obtained, F(20, 118) = 3.44, p < .0001, $\eta 2$ = .37. The significant multivariate effect for image was accompanied by significant univariate effects for image on: friendly, F(2, 153) = 4.32, p = .015, $\eta 2$ = .06, successful, F(2,153) = 7.24, p = .001, $\eta 2$ = .10, good mate, F(2,153) = 3.38, p = .037, $\eta 2$ = .05, and healthy, F(2,153) = 4.12, p = .018, $\eta 2$ =.06, see Table 1. The woman in white lingerie was rated as friendliest, most successful, best mate, and healthiest.

Table 1. Evolutionary Traits/Characteristics ratings as a function of lingerie color

	Lingerie Color		
Rating	Black	Red	White
Friendly	4.85 (1.19)	5.27 (1.10)	5.73 (1.16)
Successful	5.11 (1.04)	5.06 (.85)	6.13 (.92)
Good Mate	4.74 (1.39)	5.12 (1.12)	5.53 (1.19)
Healthy	5.58 (1.14)	5.99 (1.04)	6.40 (.91)
Masculine	1.90 (1.18)	2.10 (1.43)	2.73 (1.79)
Feminine	5.53 (1.11)	5.81 (1.05)	6.20 (1.15)
Intelligent	4.53 (.99)	4.60 (1.09)	4.87 (.64)
Enthusiastic	5.00 (1.28)	5.22 (1.09)	5.60 (1.30)
Trustworthy	4.24 (1.13)	4.25 (.94)	4.53 (1.77)
Good Parent	4.37 (1.18)	4.73 (1.19)	5.13 (1.19)
Dominant	3.76 (1.25)	3.72 (1.25)	3.13 (.92)
Affectionate	4.65 (1.13)	4.72 (1.14)	5.07 (1.16)
Socially Competent	5.24 (1.31)	5.54 (1.00)	5.60 (1.24)
Old (Age)	2.31 (.92)	2.45 (.70)	2.67 (.90)
Nurturant	4.11 (1.04)	4.48 (1.11)	4.60 (1.12)
Status	5.11 (1.03)	5.40 (.84)	5.60 (.99)
Short Term Mate	3.66 (2.28)	4.01 (2.25)	3.73 (3.04)
Long Term Mate	3.39 (2.01)	3.33 (2.12)	3.47 (2.53)
Physically Attractive	5.84 (1.15)	5.70 (1.06)	5.93 (1.16)
Sexually Attractive	5.39 (1.66)	5.57 (1.35)	5.00 (1.69)

Note: higher numbers mean better rating, standard deviations are in parentheses. Items in boldface type were items for which significant effects occurred, $p < .05$

Significant univariate effects for sex were obtained for: feminine, $F(1, 153) = 4.20$, $p = .040$, $\eta 2 = .03$; short term mate potential $F(1, 153) = 25.07$, $p < .0001$, $\eta 2 = .16$; and long term mate potential, $F(1, 153) = 26.15$, $p < .0001$, $\eta 2 = .16$, see Table 2. Overall, women rated the woman as more feminine while men rated her as having more short term mate potential and as having more long term mate potential.

Table 2. Ratings of Evolutionary traits/characteristics as a function of participant sex

	Sex	
Rating	Male	Female
Feminine	5.51 (1.25)	5.92 (.91)
Short term mate	4.99 (1.90)	2.80 (2.22)
Long Term mate	4.67 (2.16)	2.67 (2.55)
Intelligent	4.49 (1.03)	4.70 (.98)
Friendly	5.18 (1.15)	5.11 (1.13)
Enthusiastic	5.09 (1.17)	5.24 (1.23)
Trustworthy	4.12 (1.02)	4.42 (1.20)
Successful	5.10 (1.01)	5.28 (.97)
Good Parent	4.56 (1.30)	4.67 (1.11)
Good Mate	5.12 (1.41)	4.89 (1.13)
Healthy	5.82 (1.16)	5.88 (1.05)
Masculine	2.00 (1.15)	2.16 (1.35)
Dominant	3.89 (1.23)	3.67 (1.23)
Affectionate	4.66 (1.06)	4.78 (1.21)
Socially Competent	5.31 (1.16)	5.51 (1.18)
Old (Age)	2.43 (.87)	2.39 (.78)
Nurturant	4.29 (1.07)	4.37 (1.12)

Status	5.13 (1.05)	5.45 (.82)
Physically Attractive	5.85 (1.10)	5.72 (1.12)
Sexually Attractive	5.79 (1.24)	5.11 (1.67)

Note: higher numbers mean better rating, standard deviations are in parentheses. Items in boldface type were items for which significant effects occurred, $p < .05$.

MANCOVAS across lingerie image and: sexual relationship experience, sexual orientation, current relationship status, and birth control usage (for women) revealed no significant effects.

DISCUSSION

The goal of this study was to ascertain if the color of a woman's lingerie affects perceptions of her attractiveness and evolutionary fitness. It was hypothesized that the woman wearing white lingerie would be rated as the most attractive and evolutionarily fit. The results were partially consistent with the hypothesis. Lingerie color did not affect perceived attractiveness. But, the woman in white lingerie was rated as friendliest, most successful, best mate, and healthiest.

The woman may have received the higher ratings when wearing white because the color white is linked to femininity and purity (Feinman & Gill, 1978). Since men desire women who are high in femininity (Wade, 2000, 2003) the woman in white lingerie is rated highest.

The overall sex of the participant effect is consistent with research showing that men desire women for short term mating as well as for long term mating (Buss & Schmitt, 1993). Women may have rated the woman overall as more feminine than men did because women are more familiar with what femininity entails.

These findings are important because they show that just as the color of outer clothing affects ratings of women, the color of under clothing also affects the perception of women. This is the first research to indicate that women's lingerie color matters also.

Limitations

The data in the present research were primarily from young adults. So, it is not clear if the same pattern of findings would occur for older individuals' perceptions. Additionally, the stimulus woman in the present research was a white female. So, it is not clear if the same pattern of findings would occur for ratings of nonwhite women. Also, this research used only one woman, to control for individual differences confounds. Lastly, the stimulus woman was wearing makeup which can influence perceptions of sociosexuality (Batres, Russell, Simpson, Campbell, Hansen, & Cronk, 2018). With these limitations in mind, future research should be conducted using a more diverse sample. Additional research using nonwhite stimulus women should

also be implemented. Additional research with multiple stimuli should be conducted as well, and research with stimulus women wearing makeup and not wearing makeup should be conducted. Moreover, since women's lingerie comes in different cuts and styles future research should examine how black, red, and white lingerie in different cuts and styles is perceived in terms of women's attractiveness and evolutionary fitness. Also, since ornamentation of clothing can affect the perception of women's attractiveness and desirability and women are likely to wear lace when they want to be more appealing (Haselton, Mortezaie, Bleske-Rechek, Pillsworth, & Frederick, 2007) future research should examine how lingerie containing lace and other ornamentations affect ratings of women's attractiveness and evolutionary fitness.

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Figure 1. White lingerie image.

Figure 2. Black lingerie image.

Figure 3. Red lingerie image.