

# NOTE

## Color and Women Hitchhikers' Attractiveness: Gentlemen Drivers Prefer Red

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*Abstract:* Research has shown that with some nonhuman primates, red is associated with greater sexual attractiveness of females. Five female confederates in their early 20s posed as hitchhikers wearing T-shirts of different colors (black, white, red, blue, green, or yellow). It was found that the women wearing red solicited a higher response in the number of male drivers who stopped to offer a ride. No color effect was found when considering the behavior of female drivers. © 2010 Wiley Periodicals, Inc. *Col Res Appl*, 37, 76–78, 2012; Published online 12 November 2010 in Wiley Online Library (wileyonlinelibrary.com). DOI 10.1002/col.20651

*Key words:* color; behavior; attractiveness; gender differences

Studies of color associations have shown that red is connected to lust and romantic love,<sup>1</sup> and the pairing of red and sex in society seems to have a long history. Anthropologists found that red ochre was often associated with females' fertility,<sup>2</sup> and in Greek mythology, the red rose was a symbol for the cycle of growth and decay but also for love and affinity. The red rose is dedicated to Aphrodite, the Greek goddess of love.<sup>3</sup>

If red seems to be associated with sex and romantic love, this effect is perhaps explained by societal conditioning. However, when considering the role of red in nonhuman sexual behavior, there is also some evidence that the role of red in human societies could be explained by our biological evolution. The perineum of female baboons, macaques, and chimpanzees become excessively red during their fertility phase and scientists that this coloration is a sexual signal designed to attract males.<sup>4</sup> With humans, although no study has found that red is associated with direct mating behavior, some studies have found that red increases the physical and sexual attractiveness of women. Mulhern *et al.*<sup>5</sup> found that photographs of women were perceived to be more attractive when they wore red lipstick. In recent experimental studies conducted by Elliot and Niesta,<sup>6</sup> these authors found that red, relative to white, green, gray, blue, or green, leads men (but not women) to view women as more attractive and sexually desirable. However, in this series of experiments, the female target was presented by the help of a 4–10 in 6×-in photo and the experimental variable was manipulated by varying the color of the surrounding of the photo. Thus, in Elliot and Niesta's study as in Mulhern *et al.*'s study, the color of the clothes was not manipulated and, to our knowledge, there was no study that explores the role of clothing color on human attractiveness. Indeed, in these later studies, men's behavior was not evaluated given the fact that only scale rating of perceived attractiveness or sexual attraction was used as dependent variables. In this experiment, explicit behavior associated with clothing color was measured. An experiment was conducted where the behav-

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TABLE I. Percentage of motorists who stopped according to experimental condition and gender of motorist.

Group	T-shirt color					
	Black	White	Red	Yellow	Blue	Green
Male motorists (N = 3474)	12.48%a (64/513)	13.98%a (71/508)	20.77%b (103/496)	14.89%a (77/517)	14.11%a (68/482)	13.17%a (67/508)
Female motorists (N = 1776)	5.98% (18/301)	7.12% (22/309)	9.03% (25/277)	9.60%a (29/302)	6.69% (19/284)	5.28%b (16/303)

Percent with different letters are statistically different.

ior of drivers on a road toward female hitchhikers wearing T-shirts of different colors was tested. Considering previous studies that found that males perceived women to be more physically and sexually attractive when red appeared on a photograph, we hypothesized that a red T-shirt would lead male drivers to stop more frequently than with any other color.

## METHODS

### Participants

Four thousand eight hundred drivers (3024 men and 1776 women), driving alone in their cars, solicited at the entry of a famous peninsula of Brittany in France, were the participants. The experiment was conducted at the beginning of the summer holidays on sunny days.

### Procedure

Five young, brown-haired Caucasian women ranging in age from 19 to 22 years acted as confederates in this experiment. All of the women stated that they were heterosexuals. The physical attractiveness of the confederates had been evaluated by a group of 22 young men who were instructed to examine photographs of the faces of 18 female volunteers with the same height, with the same breast size (95 cm of bust measurement and bra with a “B” size cup), and same hair color, and to rate their attractiveness on a numerical scale going from 1 (low level of physical attractiveness) to 9 (high level of physical attractiveness). We selected only women with attractiveness near the middle of the scale (fifth value) and precautions were taken to verify that the rates of attractiveness were not statistically different between the confederates.

The same clothes were worn by each confederate: pair of neat blue jeans, sneakers of light color, and a figure-hugging T-shirt. Only the color of the T-shirt worn was varied according to the experimental conditions: black [hue, saturation, and lightness (HSL) code = 0, 0, 0), white (HSL = 0, 0, 100), red (HSL = 16, 92, 68), yellow (HSL = 19, 100, 94), blue (HSL = 210, 100, 100), and green (HSL = 99, 66, 87). T-shirts were plain and void of any logos, pictures, or writing. The confederate was instructed not to use cosmetics.

Each hitchhiker was instructed to test 960 drivers. After the passage of 240 drivers, the confederate stopped and was replaced by another confederate. Only one confederate acted at a time. The female confederates stood at the side of the

road where the motorists would have good visibility of them and with a broad road zone, making a stop and restarting of vehicles easy and safe. The experiment took place during summer weekends on clear sunny afternoons between 2 and 5 PM. Each confederate was instructed to count the number of motorists and to change her T-shirt after 80 motorists passed along side of the road on which the experiment was carried out. The order of T-shirt color was random. When a car came, the confederate was instructed to hold out her thumb (a nonverbal behavior that means in France that somebody is a hitchhiker) and to look along the side of the road. Drivers who stopped were counted as helpers. The confederate was then instructed to debrief the participant. She explained to the driver that she was conducting an experiment on hitchhiking. Then, the driver was warmly thanked for help. This information procedure was used in accord with the suggestion of the Ethic Committee of the laboratory prior to evaluating the experiment. To prevent problems, a male observer discreetly observed the female confederate from a distance of 30 m away from the confederate. It was not possible for the motorists to see the observer who observed the scene. He was instructed to come near the confederate if something wrong occurred. Fortunately, no intervention by this observer was required. This procedure was adapted on suggestion by the Ethic Committee.

Two observers were posted on the opposite side of the road ~500 m from the place at which the confederate stood. Each observer was instructed to count the number of motorists passing the hitchhiker and to note if the motorist was a man or a woman. Each of them used two hand-held counters, one to count the female motorists and the other to count the male motorists. The convergence between the two observers’ evaluation was high ( $r = 0.97$ ).

## RESULTS

The number of drivers who stopped by sex conditions is presented in Table I.

To account for the effects that the variables may have had, a 2 (driver gender)  $\times$  2 (driver behavior)  $\times$  6 (T-shirt color) log-linear analysis was applied. A main effect of color was found with male motorists [ $\chi^2_{(5, N = 3024)} = 17.61, P < 0.005, r = 0.08$ ] whereas color was not significant when considering the behavior of female motorists [ $\chi^2_{(5, N = 1776)} = 6.38, ns, r = 0.06$ ].

Follow-up analysis showed that with male motorists, responses to the red condition was statistically different than each other color condition, whereas for female moto-

rists, red was not statistically different than any other color condition (it was only found that yellow was significantly different than green).

## DISCUSSION

These results show that red was associated with greater attractiveness but only when considering male behavior. This is consistent with research involving nonhuman primates showing that females display red on their genitals, chest, or face when nearing ovulation<sup>7</sup> and that males are attracted to female conspecifics exhibiting red.<sup>8</sup> With humans, Roberts *et al.*<sup>9</sup> found that during ovulation, women are perceived by men as more attractive and that this effect is possibly mediated by the fact that an increase in vascularization on the face or body colored these body areas in red. Thus, for our male motorists, and perhaps for men in general, the female hitchhikers wearing red T-shirts were perceived to be more attractive and more receptive to sexual solicitation, possibly explaining why more male motorists stopped when the confederates wore a red T-shirt. Perhaps, given the societal link between red and love found in the literature,<sup>1</sup> male motorists acted toward the female hitchhiker in a conditioning way that led them to stop automatically when the female hitchhiker wore a red T-shirt.

Of course, this experiment had some limitations. We tested only female confederates with a middle level of physical attractiveness and with brown hair. We now need

further experiments exploring the role of various physical attributes and level of attractiveness associated with colors. In this experiment, only the color of T-shirt was manipulated. Further studies manipulating the type of clothes associated with different colors are necessary. In this experiment, the age of the drivers was not measured, but it will be interesting in further experiment to study the behavior of males motorists according to several age intervals.

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