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Fertility Views and Female Hair Color Preference in College Men

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Authors' contributions

This work was carried out in collaboration between both authors. Author SRH completed this research under the supervision of author TFPI as faculty advisor. Both authors read and approved the submission of the final manuscript.

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ABSTRACT

Fertility views and hair color preferences of women in college men (*n*=69) were investigated in the current study. Two articles were used to prime participants to think about fertility levels as low and getting pregnant as challenging, or fertility levels as high and getting pregnant as easy. It was hypothesized that the blonde female model would be preferred more than the brunette female model in the high fertility prime condition, and male participants in the low fertility prime condition would have no hair color preference. The hypothesis was supported. The blonde model was preferred more than the brunette model in the high fertility condition and the brunette model was preferred slightly more than the blonde model in the low fertility condition. This study provides support for evolutionary psychology mate preference predictions.

Keywords: Hair color; attraction; fertility; mate preferences; evolutionary theory.

1. INTRODUCTION

What characteristics make someone a desirable mate? Are there certain physical characteristics that make a woman more desirable to men? Women have long tried to answer these questions, understand how to make themselves stand out against competition, and make

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themselves more desirable to potential mates. Various studies on mate selection and attraction have been conducted over the years, and have looked at multiple physical characteristics [1]. Many women will go to great, sometimes radical, lengths to attract a mate [2]. One fairly simple option would be to change the color of your hair. Another, less typical, option may be to alter your potential mate's perception of fertility. The current study investigates the interaction between beliefs about fertility and hair color preference of women among a sample of college men.

From an evolutionary perspective, men and women are attracted to possible mates in different ways [2-4]. Men and women have very different mating strategies [2,5]. Women tend to have more at stake when choosing a mate than men do because women are the ones who carry the children, and often tend to be the ones who provide primary care for the children, while men are not necessarily bound to that responsibility [2,5,6]. Men, on an instinctual level, have a natural drive to reproduce but have been faced with the issue that there are a limited number of fertile women available for them to reproduce with [5]. A major problem for men looking for a mate is knowing which women are fertile and healthy enough to reproduce and have healthy children [2,5,7]. Women who are healthy and youthful tend to be more fertile, and are more capable of producing healthier offspring. Since men cannot simply look at a woman and know her fertility status, men often look for physical cues that signal if a woman is healthy and capable of producing healthy offspring, which would in turn make her a good mate. Physical cues may provide "signals of underlying qualities" [2,8].

Physical cues have long been studied in relation to attraction and fertility [1,2]. The waist-to-hip ratio (WHR) is one example that has been studied numerous times in relation to male's perceptions of physical attractiveness. Low WHRs have been found to be associated as a signal to males of a woman's health and reproductive potential [9]. A person's desire and intention to have children drives their reproductive behavior and mate selection process [2,10,11]. Men who want to have children may look at low WHRs as a physical cue of reproductive value when picking a mate. One study in particular looked at how child-free men, men who do not wish to have children, view body proportions of women [10]. Men looked to the WHR proportions as indicators of reproductive fertility, and a link was found between men who wished to stay child-free and their preference for less reproductive supportive WHRs [10]. This study is a good example of how physical cues can turn some males away from certain females.

Hair color is another attraction characteristic to consider. Hair color visibly darkens with age, so darker hair is a physical marker of age [12]. Women who have blonde hair are also often perceived to be more youthful and fertile than women with other hair colors [13,14]. Studies have shown that men prefer blonde haired women much more than women with hair of other colors, and those women with blonde hair have had other favorable characteristics attributed to them [14]. Hair may communicate an abundance of personal information about a person. Blonde haired women were rated as more youthful and good looking, at various ages, by male participants in a study conducted by Sorokowski [13]. Only when the women were much older, in their forties, did the men not favor the blonde haired women [13]. Sorokowski [13] suggests that this may be due to the fact that in older women, the blonde hair resembles graying hair. A woman with graying hair would most likely not hold much reproductive value due to her older age, and therefore would not be as attractive to males. While there may be an evolutionary preference for lighter hair color, there may also be learned associations between hair color and age within cultures.

Hair that looks shiny and strong can also be an indicator of health to males because weaker and damaged hair may be viewed as a signal of illness or overall unhealthiness [4]. After a woman has recently had a child, the quality of her hair declines and sometimes even the color will change to a darker shade [4]. The darker shade of hair color could be a signal to males that the woman is unavailable, and is not fertile at the time because she recently gave birth. This could make the male less likely to be attracted to the woman. Length of hair has also been linked as a physical cue men look at when picking a mate [4]. Men associate shorter hair with less healthy qualities, and also as an indicator of a woman's age [4]. This indicates that some men may be more likely to choose a woman who has longer hair because they will believe she is more youthful than a woman with shorter hair.

Swami and Barret [14] conducted a study in London to see if males really do prefer blondes

over brunettes and red-heads. One female confederate was used in the study, and had her hair colored from brunette, to blonde, and finally to red, and she entered a night club under each hair color condition to see how many men approached her [14]. As a blonde, the confederate was approached more than she was as a brunette or red head [14]. This is clear evidence that men are more physically attracted to blondes, and may be more likely to seek out mates with blonde hair.

The popularity and preference for blondes is not surprising. In American society, blondes have been featured more in the media and popular magazines, such as Playboy, than other hair colors [15]. Women who have blonde hair often tend to be viewed as healthier and more youthful than other hair colors [13]. Many women strive to look like the models in the magazines and popular media because they know men prefer these types of women. Women are conscious of the idea that men prefer blondes, and they tend to dye their hair blonde in an attempt to look younger and attract men [13].

While we know much about preferences for hair color, research has not really explored the link between personal perceptions of fertility and hair color preferences. For example, do hair color preferences in women change as a function of men's fertility focus? To explore this gap in the literature the current study was proposed.

1.1 Study Hypothesis

Views of fertility were predicted to influence male participants' attractiveness ratings of models with blonde and brunette hair color. It was hypothesized that the blonde female model would be preferred more than the brunette female model in the high fertility prime condition, and male participants in the low fertility prime condition would have no hair color preference.

2. METHODOLOGY

2.1 Participants

The participants for this study were a convenience sample of 69 college men (*M* age = 21, age range: 18-30 years) from Coastal Carolina University, a public university with an enrollment near 10,000 students in the Southeastern United States. Nearly half of the student body comes from states outside South Carolina, making the sample geographically diverse. The majority of the participants, 84%, were Caucasian, 12% were African American, and 4% indicated "other" racial categories. Most participants were seniors, 33%, and juniors, 29%. All men indicated they had a heterosexual orientation. Participants received partial course credit for participating. All participants were treated in accordance with the American Psychological Association ethical guidelines [16].

2.2 Materials

Two short articles, approximately half a page in length, were created for this study by the researcher. The articles were made to look like an excerpt from a New York Times newspaper article to make them appear as a credible source, but the information was fabricated for this study.

2.2.1 High fertility prime

Fertility levels are at an all-time low. Men are increasingly less likely to be able to have children. 54% of men in the United States admit to having extreme difficulty having children. "It took my wife and me over three years of extremely painful fertility treatments to have a child" said Mark Charles, "The cost of the treatments has placed my family in a horrible financial situation." Like Mark, most men are finding that having children is not as easy as many believe. 37% of men are sterile (cannot have children) in the United States, a surprising 27% increase in the past 10 years. The numbers are expected to continuously increase. Most men have begun to choose not to have children. There are many benefits to choosing this lifestyle. Childfree men on average have more successful careers, make more money, have healthier relationships, and an overall greater life satisfaction. "Having children is not important to me" says Daniel Harvey, "I have a healthier relationship, more money, and I am overall much happier than my friends who have children. Most of my friends had a very hard time conceiving and paid a lot of money for fertility treatments." Fertility treatments can cost thousands of dollars a month, and results are not guaranteed.

2.2.2 Low fertility prime

Fertility levels are at an all-time high. Men are increasingly more likely to be able to have children. 54% of men in the United States admit to having no difficulty having children. "It took my wife and me less than a month to have a child" said Mark Charles, "We were surprised at how quick we were able to have children." Like Mark, most men are finding that having children is very

easy. 37% of men are fathering children within the first month of trying in the United States, a surprising 27% increase in the past 10 years. The numbers are expected to continuously increase. Most men have begun to choose to have larger families. There are many benefits to choosing this lifestyle. Men who have children on average have more successful careers, make more money, have healthier relationships, and an overall greater life satisfaction. "Having children is very important to me" says Daniel Harvey, "I have a healthier relationship, a great family, and I am overall much happier than my friends who do not have children. Most of my friends who have children had a very easy time starting their families."

After participants read their assigned fertility article, they answered the following question as a manipulation check: "According to this article, it is very hard to get pregnant." The question was answered on a 5-point Likert scale where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree.

The experiment also included a photograph of either a blonde female or brunette female. Permission was given by the models to use their photographs for this study. The women in the photos were identical twin sisters, one with blonde hair and one with brunette hair. The models were 21 years old and Caucasian. In each photo, the twins' hair style, makeup, and shirt color were identical. The photograph was taken from the shoulders up, and was presented in color.

Each photograph was presented with the Physical Attraction subscale of McCroskey and McCain's [17] Measures of Interpersonal Attraction. The subscale include 10 items, such as "I think she is quite pretty," to gauge the attractiveness of the female in the photograph [17]. The statements were rated on a Likert scale of: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. The ten items were averaged for a physical attraction rating score.

A short demographic questionnaire was also included. The demographic questionnaire asked for participants to indicate their age, sexual orientation, race, and year in school.

2.3 Procedure

Participants randomly received one of two articles that discussed fertility levels as high and getting pregnant as effortless, or fertility levels as low and getting pregnant as challenging, followed by the manipulation check question. Participants were then randomly shown one of two photographs, one of a blonde model or one of a brunette model. They then provided responses to the Physical Attraction subscale of McCroskey and McCain's [17] Measures of Interpersonal Attraction questionnaire to gauge how attractive they found the woman in the photograph, followed by basic demographic information. Participants were finally debriefed, and thanked for their participation.

3. RESULTS

The manipulation check verified that the fertility primes had the desired effect. Participants who read the low fertility article (M = 3.74, SD = .89) indicated that it was harder to get pregnant than participants who read the high fertility article (M = 2.32, SD = 1.0), t (67) = 6.0, P < .001.

To test the hypothesis, a 2 (Fertility prime: high or low) x 2 (Hair color: blonde or brunette) Analysis of Variance (ANOVA) was conducted for physical attraction ratings. The analysis revealed a non-significant main effect for Fertility prime, $F(1,67) = 2.1$, $P = .15$, and a non-significant Hair color main effect, $F(1,67) = 1.4$, $P = .24$. The blonde model (M = 3.85, SD = .72) was rated about as attractive as the brunette model overall (M = 3.6, SD = .79). However, the interaction between type of article read and hair color preference was marginally significant, $F(1,65) = 3.73$, $P = .058$, $\eta_p^2 = .05$ (see Fig. 1). The blonde model was rated as more attractive than the brunette model in the high fertility condition, and the brunette model was rated as slightly more attractive in the low fertility condition.

4. DISCUSSION

The purpose of this study was to further investigate the evolutionary psychology prediction that blonde women are perceived to be more youthful and fertile, thus making blondes better mates for reproduction. The hypothesis, college men who are primed to believe fertility levels are high and getting pregnant is effortless will be more likely to rate the blonde model as more attractive, while college men who are primed to believe fertility levels are low and getting pregnant is challenging will be more likely to show no hair color preference, was supported. The interaction effect was marginally significant,

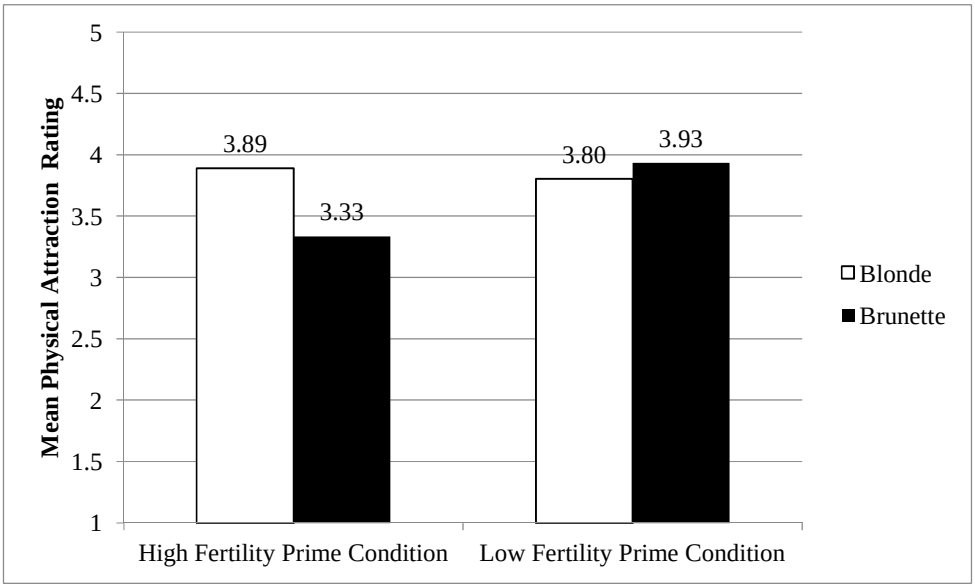

Fig. 1. Mean physical attraction ratings of the blonde and brunette model under each fertility prime condition (high or low)

with the predicted pattern of the blonde being rated as more attractive after reading the high fertility prime article and the brunette being rated about the same as the blonde after reading the low fertility prime article.

In this study, the blonde model may have been preferred over the brunette model in the high fertility conditions because the physical cue of blonde hair indicated underlying qualities that support reproduction. Similar findings involving the idea of hair, especially blonde hair, as an indicator for fertility has been found in various studies [4,14]. The brunette model's hair may have been an indicator to the participants of a lack of fertility and a low reproductive value. As discussed in the introduction, the hair of women who have recently given birth tends to darken in color [4] and hair color also darkens with age [12]. The men in the current study may have chosen the brunette because they did not have the desire to reproduce, due to the low fertility article prime, and the brunette model was not a signal of fertility and therefore more physically attractive than the blonde. Additionally, by priming the participants with procreation, they may have been encouraged to think about the physical characteristics they would like in a prospective offspring. Research has found a preference for blonde egg or sperm donors among those who cannot conceive naturally [18]. If participants were thinking about offspring, they may have showed a preference for a blonde mate because they desired that trait.

If the low fertility prime was interpreted as a threat, participants may have been showing a preference for darker hair, a more mature characteristic, compared to the youthful blonde hair. Pettijohn and Tesser's [19,20] Environmental Security Hypothesis contends that individuals prefer others with more mature characteristics during tough social and economic conditions to help mitigate threat and uncertainty. Under threatening conditions, archival research has identified U.S. actresses with more mature facial features (smaller eyes, larger chins, thinner faces) are more popular [19] and Playboy Playmates of the Year are relatively older, heavier, and taller with larger waists, smaller eyes, larger waist-to-hip ratios, smaller bust-to-waist ratios, and smaller body mass index values compared to less threatening social and economic conditions [21]. In other research, psychologically stressed men preferred a larger female body size than a control group [22] and men with greater resource insecurity (lower socioeconomic status and hungry) preferred women with a larger breast size compared to men with more resource security [23]. These research studies suggest threat influences mate preferences. Hair color preferences may also be influenced by threat, in relation to and separate from fertility, and should be investigated in future work.

One limitation of this study was the sampling method. The sample was a convenience sample of male students at a specific university, which

cannot accurately be generalized to the larger population. The sample also contained an overwhelming majority of Caucasian men. While we reran the analyses using only the Caucasian sample and found very similar results, we recognize preferences in African Americans, or other races, may be unique. Future research should be conducted with a more diverse sample using more diverse hair and skin color models. In addition, we understand that notions of beauty are determined by a variety of factors beyond perceptions of fertility and hair color. While ornamental traits such as hair color may have been favored by natural selection, hair color may have been hyperstimulated through cultural practices and preferences which can be influenced by environmental factors. Research of other hair color preferences, such as red or black hair, in both men and women could also yield interesting results. In some cases, rare hair color may be preferred [24]. For example, a review of *Maxim* magazine cover girls revealed models with light blonde and dark brown hair were more often featured than the more common dark blonde or light brown colors in real life [25].

This study has implications for future research of hair color and attraction. The basis of this study could be used to advance mate selection and attraction theories. Future studies should revisit this idea of fertility views and hair color preferences. One possible adaptation of this study could be to see if females have similar hair color preferences in relation to fertility views as males do. Pettijohn, Walzer, and Yerkes [26] found some evidence that when women are led to believe their social and economic future is uncertain, they show a stronger preference for men with black hair compared to women led to believe their social and economic future was certain.

5. CONCLUSION

In conclusion, this research shows how fertility views influence hair color preferences of women in college men. Blonde women were rated as more attractive than brunettes in a high fertility prime condition and similar preferences for blondes and brunettes were shown in a low fertility prime condition. Environmental conditions, more specially perceptions of fertility, appear to influence mate preferences.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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