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Shirley A. Forbes
Augusta State University

Tanacha Brown
Augusta State University

Timothy Adams
Augusta State University

Lenore Davis
Augusta State University

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Shirley A. Forbes, Tanacha Brown,
Timothy Adams, & Lenore Davis
Augusta State University

Sex : The Defining Variable in Mate Selection

The evolutionary hypothesis of mate selection was tested by combining traits deemed as evolutionarily valued (Cramer, Schaeffer & Reid, 1996) with pictures showing facial features deemed as physically attractive according to the evolutionary hypothesis (Buss, 1989; Singh, 1995). Traits and pictures not congruent with the evolutionary hypothesis were also presented. Four stimulus persons were presented to ninety-one male subjects and 114 female subjects who were asked to rate their desirability as a mate. The results showed a main effect for stimulus condition, with the physical attractiveness pictures receiving the highest ratings when combined with the valued evolutionary traits, $F(3, 201) = 196.34, p < .000$. The results also showed a main effect for gender with male subjects' ratings being significantly higher than female subjects, $F(1, 203) = 19.67, p < .000$. Finally, a significant interaction indicated that females' ratings of the four stimulus persons were congruent with predictions according to the evolutionary hypothesis, while males' ratings were not $F(3, 201) = 34.07, p < .000$. These results offer mixed support for the evolutionary theory possibly because of changing gender roles.

A large amount of research has indicated that both males and females look for biologically relevant traits when choosing a mate. These evolutionary traits are characteristics that help both males and females solve common mating problems. For males, the problem is finding a fertile mate, as well as assurance that the mate belongs to them exclusively (Schmitt & Buss, 1996). For females, the problem is making a long-term investment in a mate, which means that the mate must possess the necessary resources to support the female. The male must also possess gene quality for reproduction (Buss, 1989).

The evolutionary hypothesis of mate selection states that males tend to select mates who possess traits that denote youth and sexuality (Baize & Schroeder, 1995; Buss, 1989), while females tend to select mates that demonstrate occupational and economic success (Buss & Barnes, 1986; Singh, 1995). Cramer, Schaeffer,

and Reid (1996) have defined the following as evolutionary traits supportive of this hypothesis. Females prefer males who possess: intelligence and motivation, honesty and loyalty, good earning capacity, and a college education. Males prefer females who possess: youth and fertility, high activity level and health, attractiveness, and sexually responsiveness. These trait cues are used by both sexes to make inferences about potential mates' valuable characteristics. Possession of these traits leads to greater attraction, thus, these traits were used as determinants of mate selection in the study by Cramer et al. (1996).

In the case of physical attractiveness, both males and females have been found to prefer neonatal and symmetrical facial features (Buss, 1989). Valuable features for females to possess are large eyes, a small nose, high cheekbones, narrow cheeks, full lips, high eyebrows, and full, well groomed hair. Valuable facial features for

males to possess are a combination of both neonatal and mature features such as prominent cheekbones, a large chin, large eye height and width, and a small nose (Feldman, 1998; Solomon, 1999). Other determinants of attractiveness and health, such as weight, are also used to select a mate (Regan, 1996; Singh, 1995).

In our study, we attempted to further build on the work done by Cramer et al. (1996) and Buss (1989) by combining traits of evolutionary value with facial features also considered to have evolutionary value. These stimuli were also presented to subjects in pairs with stimuli not considered to have evolutionary value. Each subject was presented with 4 stimulus combinations.

The following four combinations of male stimuli were presented to females as potential mates. A photo containing facial features deemed as attractive to females by the evolutionary hypothesis (prominent cheekbones, large chin, large eye height and width, small nose) was paired with traits considered to be of evolutionary value to females (good earning capacity, intelligence, motivation, honesty, loyalty, a college education). A photo containing facial features deemed as attractive to females by the evolutionary hypothesis was paired with traits considered to be of evolutionary value to males (youth, fertility, high activity level, health, attractiveness, sexually responsiveness). A photo rated as unattractive in a pilot study was paired with traits considered to be of evolutionary value to females. A photo rated as unattractive in a pilot study was paired with traits considered to be of evolutionary value to males.

The following four combinations of female stimuli were presented to males as potential mates. A photo containing facial features deemed as attractive to males by the evolutionary hypothesis (large eyes, high cheekbones, narrow cheeks, full lips, high eyebrows, full, well groomed hair) was paired with traits considered to be of evolutionary value to males (youth, fertility, high activity level, health, attractiveness, sexually responsiveness). A photo containing facial features deemed as attractive to males by the evolutionary hypothesis was paired with traits considered to be of evolutionary

value to females (good earning capacity, intelligence, motivation, honesty, loyalty, a college education). A photo rated as unattractive in a pilot study was paired with evolutionary traits considered to be of evolutionary value to males. A photo rated as unattractive in a pilot study was paired with traits considered to be of evolutionary value to females.

It was hypothesized that the stimulus combination having the most evolutionary value would receive the highest ratings. This combination would contain a photo of a person with facial features denoting physical attractiveness according to the evolutionary hypothesis, as well as traits of evolutionary value. The stimulus combinations containing photos of facial features that are evolutionarily valuable were hypothesized to receive higher ratings than combinations containing photos without these features. Thus, even attractive pictures paired with traits not of evolutionary value to the subjects' gender would still receive high ratings. The stimulus condition containing no evolutionarily valuable facial features or traits was hypothesized to receive the lowest ratings. All hypothesis are consistent across both genders.

These results were expected because physical attraction has been shown to play a major role in determining whom we view as a likely mate (Locher, Unger, Sociedade & Wahl, 1993). Thus, we hypothesized that physical attraction would play more of a role in our subjects' reaction to the presented stimuli when seeking a mate than would evolutionary traits. Overall, it is hypothesized that the results will be congruent with the evolutionary hypothesis of mate selection. Therefore, the combination most congruent with this hypothesis, containing both evolutionarily valued facial features and traits, is hypothesized to receive the highest ratings.

However, to our knowledge there is no previous research in this area combining both traits and facial features when studying mate selection. Thus, in forming our hypothesis we also drew upon our knowledge of social psychology and theories of attraction. The outcomes of this study should allow valuable insights into what causes attraction and the validity of the evolutionary theory of mate selection in modern

METHOD

Participants

Two hundred and five freshmen level college students (91 males and 114 females) volunteered to participate. Volunteers were not paid for their participation, but were treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 1992).

Materials

Each participant viewed a packet containing four stimulus combinations. Separate packets were supplied for males and females, so that the subjects only viewed pictures of the opposite sex.

Design and Procedure

Packets were distributed to five entry level psychology classes. Participants were instructed to judge each picture-trait combination using a scale ranging from 1 (not at all) to 7 (very). For each picture-trait combination the question asked was, "Given the above information, how likely are you to choose this person as a mate?". Participants were instructed not to compare the different combinations when determining the ratings. All packets were counterbalanced to control for order effects. Pictures of various ethnic backgrounds and ages were chosen for further representation of the target population. When distributed to the participants, packets were placed

face down. Instructions were given, and the participants began to view the packets at the same time. They were given fifteen minutes to complete the packets.

A 2 (gender) X 4 (treatment conditions) mixed factorial design was used. The four combinations were : physical attractiveness and traits considered to be of evolutionary value to the subjects' gender, physical attractiveness and traits not of evolutionary value to the subjects' gender, unattractiveness and traits considered to be of evolutionary value to the subjects' gender, and unattractiveness and traits not of evolutionary value to the subjects' gender. Gender was a between group variable and the 4 treatment conditions were a within group

variable.

RESULTS

Overall Analysis

In this analysis, male and female ratings were combined to look for overall trends in choice of picture-trait combinations. The overall rating of the picture-trait combination of physical attractiveness and valuable evolutionary traits was higher than the rating for any other combination ($M = 5.07$, $SD = 1.91$), supporting the evolutionary hypothesis of mate selection. The evolutionary hypothesis was not supported overall in regard to traits. The combination of physical attractiveness and traits having no evolutionary value received higher ratings ($M = 4.80$, $SD = 1.98$) than the combination of unattractiveness and valuable evolutionary traits ($M = 2.35$, $SD = 1.41$). However, the combination of unattractiveness and traits having no evolutionary value received the lowest

ratings ($M = 2.32$, $SD = 1.66$), which is congruent with the predictions of the evolutionary hypothesis of mate selection.

The results showed a main effect for gender, with males rating all stimulus conditions significantly higher than females, with the exception of the picture-trait combination of physical attractiveness and valuable evolutionary traits $F(1, 203) = 19.67$, $p < .000$. There was also a main effect of stimulus condition, with the physical attractiveness and valuable evolutionary trait combination receiving the highest ratings, $F(3, 201) = 196.34$, $p < .000$. It was hypothesized that the combination of physical attractiveness and valuable evolutionary traits would receive higher ratings regardless of gender. There was an interaction between gender and stimulus condition, $F(3, 201) = 34.07$, $p < .000$. Females rated the stimulus conditions as expected, but males deviated from the expected outcome.

Males vs. Females

Independent sample t-tests were used to analyze the differences between male and female ratings of the combinations. Male subjects assigned significantly higher ratings to the combinations of physical attractiveness and traits having no evolutionary value, $t(91) = 2.06$, $p < .041$, unattractiveness and traits having no

evolutionary value, $t(91) = 9.70$, $p < .005$, and unattractiveness and valuable evolutionary traits, $t(91) = 5.42$, $p < .000$. Female subjects rated all picture-trait combinations according to the evolutionary hypothesis, assigning significantly higher ratings to the combinations of physical attractiveness and valuable evolutionary traits, $t(114) = 3.64$, $p < .000$, as well as the combination of unattractiveness and valuable evolutionary traits, $t(114) = 6.50$, $p < .000$. Means and standard deviations for both male and female ratings of each combination can be found in Table 1.

DISCUSSION

The results support both the evolutionary theory and previous research on the recent change in social ideology of gender roles amongst women (Harris & Firestone, 1998; Mueller & Yoder, 1997; Panayotova & Brayfield, 1997). Our research is an important contribution because it suggests that not only are women seeing themselves in a new light as gender roles become more flexible and egalitarian, but males are beginning to see women in a different way as well. Male disregard for a conventional female gender role was evidenced in the current study by higher ratings assigned to educated women with good earning capacity. Thus, males are expressing greater interest in a woman's ability to work outside the home. Previous research supports the idea that a woman's involvement in work outside the home may be set into the

framework in which a male chooses a mate in today's society (Orbuch & Custer, 1995). Given the change in sex roles and socialization, females are expected to have a high level of college education and job opportunity. Employment and education are now found to be normal aspects of a woman's life according to research with college students (Mueller & Yoder, 1997).

Higher levels of education amongst both males and females are conducive to a weakening of traditional gender roles (Panayotova & Brayfield, 1997). Education promotes greater awareness for males and allows for changes in their norms and beliefs. It provides females with greater job opportunities, along with access and exposure to new ideas and higher aspirations for themselves. Higher income levels are also associated with males being more egalitarian toward females' education and employment (Harris & Firestone, 1998). This may further explain why females continue to value males with an education and a good income, in

support of the evolutionary theory. It may also explain why educated and wealthy males consider females' occupational and educational status when searching for a mate.

Another possible reason for males' interest in employment and college education amongst women may be that in today's society many women work out of economic necessity. Therefore, males must consider the need for a

TABLE ONE

Likelihood of Mate Selection Based on Picture-trait Combinations				
Picture-trait Combinations	Males		Females	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Physical Attractiveness & Valuable Evolutionary Traits	4.77	1.91	5.32	1.88
Physical Attractiveness & Traits Not of Evolutionary Value	5.43	1.65	4.31	2.07
Unattractiveness & Valuable Evolutionary Traits	2.38	1.46	2.32	1.37
Unattractiveness & Traits Not of Evolutionary Value	3.36	1.77	1.48	0.95

female who will be viable in the working world and thus able to help support the family (Panayotova & Brayfield, 1997).

Our study shows clear support for the evolutionary hypothesis of female mate selection and male recognition of changing social ideology of female roles in society. However, we must continue to question why these results are achieved. Lott (1997) contends that gender beliefs are not reliable predictors of behavior because many times people act in ways they think will be socially rewarding due to the anticipated consequences of the behavior. Certain behaviors are expected and positively reinforced in our society, such as a female searching for a man who can adequately support her financially. Thus, this may be one reason why research data about how females choose a mate continues to support the evolutionary hypothesis.

Since our study consisted of only college students, further research should focus on other realms of male-female interaction. The college environment, filled with young people, is an ideal place to search for a mate, while at the same time being a place where most young people maintain very egalitarian views of gender roles (Harris & Firestone, 1998; Panayotova & Brayfield, 1997). Thus, the large number of male subjects expressing an interest in the educational attainment of females could be due to the greater awareness of the shifting gender roles in today's society by the males involved in this study.

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