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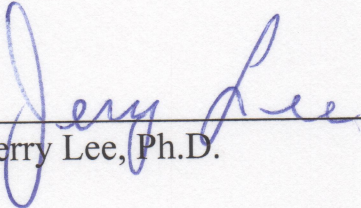# Love At First Sight: The Evolution of Attraction
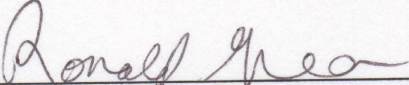
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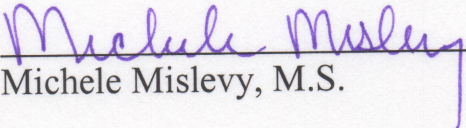
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Bachelor of Arts

Submitted in partial fulfillment of the requirements for

College Honors

Departmental Distinction in Psychology

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LOVE AT FIRST SIGHT: THE EVOLUTION OF ATTRACTION

Love At First Sight: The Evolution of Attraction

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Abstract

Physical attraction to human facial features in relationship to saccades was examined. Participants viewed pictures of human facial features while connected to psycho-physiological equipment which counted the number of eye movements while viewing each picture. They then rated each photo on physical attractiveness. Results are expected to correlate with similar studies on physical attraction. It was expected that the number of saccades would be affected for the gender of the participant. For example, the males would have a higher mean number of eye movements while viewing the pictures of the female face than the female participants. It was also hypothesized that participants would rate the pictures of the opposite sex as more attractive than participants of the same gender, because of their increased importance of physical attraction when looking for a mate (Eastwick & Finkel, 2008). It was also thought that the face of both the males and females would be rated as the most attractive, followed by the eyes, then the mouth. The results showed that there was a significant difference in attractiveness ratings for the overall attractiveness of the male pictures, but not for the female pictures. The only factors that had a main effect of gender were the overall attractiveness of the male and female pictures, the male eyes, and the male mouth. The EOG readings were not significant.

Love At First Sight: The Evolution of Attraction

Physical attraction has been an essential piece of almost all types of human relationships since the beginning of time. At the time of the cave man, humans used physical attraction as a means of finding a good mate. The better looking a person was, the more likely they were healthy and had good genes to pass onto the next generation, and during that particular time period, that was the name of the game (Thornhill & Gangestad, 1993). Now, in the twenty-first century, we as a species have spent so much time evaluating the physical attraction of others that it has almost become second nature. Previous studies have shown that humans are very quick to judge a face as being beautiful or not beautiful. Humans are so quick at judging that they can do so when only a glimpse of the face is seen. Even when humans are only exposed to a picture of a person for a matter of milliseconds, they are able to accurately assess the attractiveness of that individual, even though they only had a very brief glimpse of the visual stimuli (Olson & Marshuetz, 2005). Even infants have been shown to prefer to look at attractive faces, suggesting that this perception of beauty is perhaps innate (Langlois, Ritter, Roggmann, & Vaughn, 1991). It has also been found that when evaluating others attractiveness, people are more apt to categorizing a face as "not beautiful" than "beautiful". Why are humans so hard on each other? Is this just an evolutionary byproduct or is there still a use for this type of harsh evaluation of others? And if so, what exactly does it take to be labeled as "beautiful" in modern society?

One particular study done recently by Roye, Hofel, and Jacobsen on the aesthetics of faces showed participants well over two hundred pictures of human faces. The faces were both male and female faces with an average age between twenty-one and twenty-

two years old. The results of this study showed that only thirty-nine percent of the faces

were said to be "beautiful" and the other sixty-one percent were labeled as "not beautiful"

(Roye, Hofel, & Jacobsen, 2008).   If the majority of humans are judged as "not

beautiful" then what does it take to be beautiful? It is a general consensus that the most

average face is the most attractive; however this is not necessarily the case. Studies have

shown that exaggerations of certain features are judged as more attractive than the

average face, such as having larger eyes and a thinner jaw. It was also found that full lips

and more feminine curves were considered more attractive (Ramachandran & Hirstein,

1999). Are these the features that males consciously look for when selecting a mate?

What about females?

A set of studies conducted by Cunningham aimed to see what specific facial

features were desirable to males when searching for a female mate. This set of

experiments also wanted to see the relationship between physical attraction, attributions,

and altruistic responses of males when shown female faces. Fifty black and white photos

of females were used as stimuli. These photos were either from a yearbook of a

graduating class from a women's college, or from contestants of the Miss Universe

Pageant. The seventy-five male undergraduate participants were asked to rate each

picture on physical attractiveness on a scale ranging from "extremely attractive" to

extremely unattractive". The results of this study showed that males preferred female

faces that had a small nose, large eyes, small chin, narrow cheeks, prominent cheekbones,

and a large smile. These features positively correlated with attractiveness.   Extremely

"Beautiful" features were found to be those which were different than the normal

population (Cunningham, 1986).

In the second part of the experiment, participants were asked to view pictures of females and asked to rate them on a six-point scale in different personality characteristics including brightness, submissiveness, sociability, and fertility, just to name a few. They were also asked to select the females in which they would choose to perform each of thirteen altruistic actions, such as donate a kidney to, swim to rescue, help load furniture, donate blood to, etc. The results showed that women with more attractive facial features, as described in the first part of the experiment, were given more desirable personality characteristics. For example, females with a smaller nose, wider cheekbones, and wider smiles were perceived to be brighter, have fewer medical problems, and be more sociable than the females that did not possess these attractive physical features. The male participants also recorded that they were more likely to sacrifice themselves for the females that possessed these physical features. They were also seen to be more fertile and have many children. Perhaps this is an evolutionary result from our cave men ancestors, and may explain some of the importance of physical attractiveness in human relationships (Cunningham, 1986).

Another study done by DeBruine, Jones, Unger, Little, and Feinberg, also showed that attractiveness is not always average. They did so by caricaturing highly attractive faces. By compositing the faces, this made them less average, but were found to be more attractive, showing that someone who is different than average is thought to be more beautiful. If a face was shown on a continuum, with the most average face being in the center, then the level of attractiveness would depend on the distance and direction from the average face in the middle. If the distance is increased in the positive direction, this would increase the perceived attractiveness of a face, while moving in the opposite

direction from the average face would decrease attractiveness. This study consisted of five separate studies. Experiment one analyzed normality ratings of the faces used in this study to confirm that the faces were perceived as less normal than average. Experiment two looked at forced-choice preference when given a pair of faces that differ equally from average in the opposite direction. Experiment three looked at viewing over exaggerated facial features versus average features. Experiment four looked at forced-choice preferences between over exaggerated facial features on both ends of the continuum. Experiment five looked at judgments of normality of faces after viewing attractive or unattractive faces. The results of all five experiments show that there are specific characteristics that are considered attractive that are not average (DeBruine, Jones, Unger, Little, & Feinberg, 2007). This then would explain why the majority of faces in the previous studies discussed were not found to be as beautiful as expected, since the majority of faces are considered average.

It is quite obvious that physical attractiveness is important to men, but what exactly do women look for in men? Are there specific facial features that are desirable? Danel and Pawlowski examined eye-mouth-eye angle quantitatively and face size as an indicator of masculinity, face symmetry and sexually dimorphic. Both face symmetry and masculinity have been found to be good indicators of a male's biological condition (Fink & Penton-Voak, 2002). Facial symmetry reflects genetic stability. Someone who has greater asymmetry seems to not possess the genetic quality that aids in fighting off factors that negatively effect development and growth (Gangestad, Thornhill, & Yeo, 1994). Facial symmetry has also been shown to be an indicator of a strong immune system (Thornhill & Gangestad, 1993). For masculinity, only males that have a high

genetic quality are able to have higher levels of the steroids which cause their masculine appearance (Folstad & Karter, 1992). Both of these physical qualities of men show good genetics, which is the possible reason for women's unconscious drive to select mates with these qualities (Danel & Pawlowski, 2007).

The researchers, Danel and Pawlowski, used frontal images of male faces. They made sure that the eye-mouth-eye angles of the subjects were highly sexually dimorphic. They then assessed the relationship between eye-mouth-eye angle and facial attractiveness. Sixty seven female participants were asked to rate neutral pictures of male subjects on a scale from one to seven with one being very unattractive and seven being very attractive. The mean attractiveness was then calculated for each subject, and compared to their eye-mouth-eye angles, which were previously calculated.   The results showed that male faces with smaller eye-mouth-eye angles and more masculine facial features were perceived as more attractive by female participants (Danel & Pawlowski, 2007). More masculine features showed that a man had a strong immune system, which would evolutionarily be attractive in finding a potential mate (Thornhill & Gangestad, 1993). Men that are considered to have a "baby-face" are actually judged as less strong then men who do not look as young. They are also judged as less independent (Berry & McArthur, 1986).

Eastwick and Finkel used the information in the previous studies about physical attraction and mate preference and took it a step further. They understood what men and women said they wanted in a mate in a psychology laboratory, and then applied it to a real life setting. The researchers looked at speed dating with longitudinal follow-ups. The researchers asked participants to list their preferences for possible mates, and the

answers were similar to the findings above. This showed that women valued earning

prospects in an ideal speed date and partner, and men valued women's physical

attractiveness. However, the scales indicated that there was no gender difference

between a participants' romantic interest in their real-life potential partners and their

attractiveness and earning potential. Both sexes valued these characteristics equally.

They also found that the list of ideal characteristics given by the participants before the

speed dating did not predict what they actually desired at the speed dating event.

Essentially, what the participants consciously recorded they wanted in an ideal partner,

they did not choose as a potential mate in the speed dating experience. The researchers

feel that this shows that people may lack the ability to be aware of what influences their

judgments and behaviors introspectively (Eastwick & Finkel, 2008). Could this perhaps

be due to unconscious motives left over from our days of hunting, gathering? Perhaps we

do not really consciously know what is best for us, but our unconscious motivations lead

us in the correct direction.

A study conducted by Maner, Gailliot, Rouby and Miller showed that this

phenomenon of assessing and giving attention to possible mates is also true when

viewing possible mating rivals. The researchers conducted three experiments in order to

prove their theory. The first and second studies used feelings of sexual arousal to prime

the participant with a mate-search motive. The researchers showed the participants a

sexual stimulus and were then shown pictures of the opposite sex. They then examined

the effects on attentional adhesion to these male and female targets which were different

degrees of physical attractiveness. The researchers hypothesized that participants that

were primed with sexual arousal would have more attentional adhesion to attractive

subjects of the opposite sex. Unrestricted individuals, who are more likely to initiate

casual sexual relationships, showed an increase in attentional adhesion to attractive

individuals of the opposite sex after the arousal priming. Restricted individuals, or those

who were not as promiscuous as the unrestricted individuals, however, did not show such

increase. The researchers explained that they believe this to be true because they do not

view even very attractive individuals to be immediate sexual partners (Maner, Gailliot,

Rouby & Miller, 2007).

　　　　The third study involved mate-guarding, rather than mate-searching as in the first

two studies. Researchers used priming with feelings of jealousy. Researchers expected

that this priming would interact with participants' feelings of concern with threats posed

by same sex rivals, and this would in turn increase attentional adhesion to attractive

subjects of one's own gender. The study showed that participants that usually worry

about same sex rivals in relationships showed an increase in attentional adhesion to

attractive members of one's own sex. However, this increase was not apparent in

participants that did not usually worry about sexual rivals (Maner, Gailliot, Rouby &

Miller, 2007).

　　　　The group of studies conducted by Maner et al. proved that attractiveness does in

fact have an effect on one's attention to possible mates or rivals. It would only be natural

if a person is going to start a relationship with someone, the first thing they are going to

notice about them is their physical appearance. If there is no physical attraction there,

then it makes sense that not as much attention would be given to that individual. The

same would also be with attractive individuals of the same gender. It is only natural that

if someone has a jealous nature, they would be more aware of someone of the same sex

near their significant other. They would want to be aware of the possible threat and protect their mate from being taken away.

So humans, knowingly or unknowingly, automatically judge the attractiveness of others. Big deal, right? Humans may think that someone is beautiful but this does not effect the decisions they make, right? Are humans generally superficial or is this something that has an evolutionary purpose? As it turns out it may be a little of both. Since the beginning of human existence, people have preferred to mate with those who were considered more beautiful, than someone who seemed sickly. This was in the hopes to carry on healthier, stronger genes to the next generation.   Some studies have shown that good looking people were generally seen as being more outgoing, more interesting, more sociable, and more sexually responsive than those who were more "plain" (Dion, Berscheid, & Walster, 1972). Research suggests that there are certain facial features and body characteristics that were and are still important for mate preference. Therefore, these structures are still subject to sexual selection today. If a person is physically attractive, it shows that there is a very good chance that they are healthy, and have healthy genes. Weeden and Sabini specifically looked at how the physically attractive factors of body size and shape correlate with the overall health of an individual. They found that they only physical trait that seems to be predictive of health was a woman's waist to hip ratio and their overall weight. They found that a woman with a larger waist to hip ratio was more likely to have health problems. This is no surprise since weight around the abdominal area can also be linked to heart disease. It also showed that overall physical attractiveness correlated positively with women's health (Weeden & Sabini, 2005). This is also not surprising, since obesity and high body mass index are unarguable

high risk factors for many serious illnesses, some being fatal. These diseases include but are not limited to hypertension, adult-onset diabetes, coronary artery disease, gallbladder disease, osteoporosis, stroke, respiratory problems, sleep apnea, and cancer of the breast, prostate, and colon (Gilmore, 1999). However, there is little proof that this is also true for males (Weeden & Sabini, 2005).

Grammer, Fink, Moller and Manning also suggest that certain facial features correlate with physical health, which is very important for mate selection, perhaps explaining the harshness of humans on other humans when evaluating physical appearance. They only wanted to mate with "the best of the best" in order to pass along the best possible genes to their offspring. People still seem to look at one's outer appearance and tend to pick mates today. The researchers argue that attractiveness and health still correlate today in modern American society. Beauty is very important in American society. Magazines, television, and movies glorify being beautiful, and Americans spend lots of money every year of products which help to enhance their beauty. In fact, in one year's time, Americans spend more money on beauty products than they do on education (Anderson, Adams, & Plaut, 2008). The researchers feel that previous research which relies on only one trait are limited in their result, such as related body mass index and attractiveness or facial symmetry and attractiveness. They feel that perhaps the type of culture the person is from also has an influence on their health because of their physical attractiveness. For example, if someone is from a country that values physical attraction more, then that person's happiness and health will be affected greater depending on their physical appearance. The researchers compared the attractiveness and health of students from an American University and a Ghanaian

University. The participants answered questions concerning their general life outcomes.

The researchers then took a picture from the shoulders up of each participant. This study

showed that the mating relationship for overall life outcomes is weaker in Ghanaian

settings and greater in American settings. The most interesting result of this study was

that the more attractive Americans reported better life outcomes than the less attractive

Americans, but it was opposite for the Ghanaians (Grammer, Fink, Moller, & Manning,

2005). This perhaps interestingly suggests that the importance of physical attractiveness

is somewhat more prominent in more modern societies than it is in less modern areas of

the world.

Anderson, Adams, & Plaut also investigated the importance of being physically

attractive across cultures. This study was set up just as the previous study by Grammer et

al (2005). This study was conducted at two American Universities and a Ghanaian

University. Similar to the study before, Anderson, Adams, & Plaut wanted to see if

positive life outcomes were correlated with positive life outcomes across cultures, as it

does here in the United States. The researchers felt that more attractive adults receive

more attention and have more positive social interactions here in the United States. They

also seem to have greater success in the workplace, have more dating experiences, and

have better physical and mental health.   Is this true across all cultures? The study

consisted of the participants completing a questionnaire about personal characteristics

and life outcomes. They found, just as Grammer et al discovered, that attractiveness was

a larger factor in more positive life outcomes in more individualistic societies, such as the

United States (Anderson, Adams, & Plaut, 2008).

It is obvious that physical attraction plays a very important role socially and evolutionarily in romantic and personal relationships. However, this phenomenon does not stop there. Physical attraction seems to be significant in almost every other area of life. Studies have also shown that attractiveness also seems to be an essential piece in the workplace, especially in personnel selection. Employment is always thought to be based only on the job applicant's skills, education, and work experience; however, our first impressions of others seem to sway our judgments of others, in good and bad ways. It seems as though employment is another area where those who are more physically attractive have an advantage in American society. Studies have shown that job applicants who were more physically attractive had an advantage over those who were less attractive when their qualifications were assessed and when hiring decisions were made (Dipboye, Arvey, & Terpstra, 1977). Once again, this is perhaps due to the fact that humans seem to attribute more positive qualities to those who are more physically attractive. One particular study showed that people would hire someone who is more physically attractive than someone else who had similar credentials. This study, conducted by Pascal Pansu and Michel Dubois was conducted to examine how facial attractiveness of job applicants effects a pre-selective evaluation. Two hundred twenty-four individuals from Southern France participated in this study. Participants were asked to judge a job applicant on a false resume and photograph. The participants were told that the applicants were applying for either a job as an accountant or a hotel receptionist, and their resumes were geared toward one or the other. Participants were also given brief descriptions of the companies to which the applicants were applying. They were asked to rate the applicants on an eight point scale on several items. These items were sociability,

hardworking, intelligence, level of education, and work experience. They found that in this situation, the highly qualified applicants were judged most positively. They also discovered that the applicants who were not highly qualified for a job position but were attractive were only chosen for a position above those who were unattractive and not qualified. This was especially true for the hotel receptionist job position, where the applicant would be seen much more by the general public. Perhaps this is because the reception desk is the first place everyone goes when checking into a hotel and the employer wants everyone visiting their establishment to have a good first impression of the hotel. Perhaps this is also because the employer is trusting their company to this person, and a first impression is a very important piece of a human relationship. The first impression acts as somewhat of a screening mechanism used as a basis for this first impression of the job applicant (Mayfield & Carlson, 1966). A more attractive person might seem to be stronger, more dependable and make a better first impression (Pansu & Dubois, 2002). However, this phenomenon can be detrimental to attractive females. It seems as though their appearance may be a disadvantage when they apply for primarily male jobs, such as managerial positions (Cash, Gillen, & Burns, 1977). They have found this to be true because predominantly male dominated jobs are thought to need much masculinity. An attractive woman is perceived to be more feminine, while an attractive man is perceived to be more masculine, which carry certain stereotypes. So an attractive woman would be perceived as possessing feminine qualities, and in turn, perceived as less qualified for a position that requires masculinity (Rosenkrantz, Vogel, Bee, Broveman, & Broveman, 1968).

Seligman, Paschall, and Takata also found evidence of the effects of physical attraction that could greatly effect relations in the workplace. This study specifically examined the stereotype of positive attributions and physical attractiveness. The researchers looked at rating a person's responsibility in certain situations as a factor of their physical attractiveness. The participants consisted of seventy-two male and seventy-two female students. Here, the target person, who was female, took a job, knowing that in six months the government would make a decision about her position. The participants were told that the government would decide to either fire, give a large promotion to, or keep the position the same for the target person. The results showed that unattractive women were held less responsible for a positive outcome of a situation than attractive women and were held more accountable for a bad outcome than attractive females (Seligman, Paschall, & Takata, 1974). These findings are also cohesive with Miller's findings that people who are more physically attractive are perceived as being more internally controlled than those who are less attractive (Miller, 1970).

Heilman and Stopeck found that attractiveness also has an effect on corporate success. They investigated attributions for success in the corporate world due to a person's physical appearance. One hundred thirteen working males and females participated in this study. Participants were given a work history of an assistant vise president that was characterized as either an attractive or unattractive male or female. The story indicated whether this assistant vice president's rise to this position of a midsized corporation was either normal in pace or unusually rapid. The results showed that a male was perceived as having greater ability attributions because of their good looks while good looks hurt the ratings of the female's ability attributions. However, the

speed at which the stimulus rose to the top did not correlate with ratings of attractiveness or attributions (Heilman & Stopeck, 1985).

Research has shown the many ways that attraction affects human relationships, whether they are personal or business relationships. However, physical attraction seems to also impact on perceptions of those that one does not even know. It seems that humans are not only judging someone's attractiveness when first meeting them, but are also making inferences about their inner qualities based on their outward appearance. One study showed the consensus in personality judgments at zero acquaintance. Albright, Kenny and Malloy examined the perceptions of someone's personality characteristics when first meeting them. This study was done in a classroom and participants were placed in groups of people they did not know during the beginning of the first class period. They were placed in groups of four to six people and asked to rate themselves as well as others in their respective groups. Participants rated the people that they were not acquainted with in their groups on five dimensions of personality. These factors were extraversion, agreeableness and good-natured, conscientiousness, emotional stability, and intellectual and cultural. Group members were assured that their ratings of their classmates would be kept completely confidential. The consensus of the class showed that there were shared beliefs about the correlation of personality characteristics and physical appearance. It also showed that participants consistently attributed the same characteristics to the same person. The most profound and significant traits that had a strong consensus among group ratings were extraversion and conscientiousness. This shows that the participants' ratings must have been based on appearance since the group members were unacquainted (Albright, Kenny & Malloy, 1988).

Other research has also found that physical attraction also has a connection between physical attractiveness and perceived psychological disturbances. Cash, Kehr, Polyson, & Freeman had seventy-two male and seventy-two female participants with a median age of nineteen listen to tapes of interviews of females that demonstrated high and low levels of maladjustment. The two different tapes were of a male profession psychologist and a female college student. They discussed family relationships, career experiences and plans, academic experiences, social relationships, dating, and hobbies. The females being interviewed were either identified in a photograph as attractive, unattractive, or some were kept anonymous. The results showed that the attractive interviewees were rated with a better prognosis and a lesser psychological disturbance than those that were labeled as unattractive or kept anonymous who were rated as less healthy (Cash, Kehr, Polyson, & Freeman, 1977).

Although it seems obvious that physical attractiveness is utilized among adults in every aspect of their lives, there has also been research conducted to show that this is also true with children and students. Rich investigated how physical attraction is used toward elementary aged children. Many psychologists believe that teachers treat attractive children differently from unattractive children (Dion, 1972). One hundred forty-four female elementary school teachers in the Minneapolis – St. Paul area were asked to rate students. The teachers ranged in age from twenty-two to sixty-one and were in the field of education from fifteen to nineteen years. The teachers were shown a photograph of a physically attractive or unattractive child along with a short story of the child supposedly misbehaving. The teachers were asked to rate the children, based on the picture, on their personality, blame for the misbehavior and an appropriate punishment for the action. The

gender of the child was included in the study because several studies have shown that the evaluations may vary based on the child's gender (Byrne, London, & Reeves, 1968). They rated the children twice; before and after viewing the child's report card which justified the child as a poor, satisfactory, or good student. The results showed that attractive students received more desired attributions and their misbehaviors were rated as more undesirable than an unattractive child. This also showed that teachers were less likely to blame unattractive girls for their actions and punish these girls less harshly then unattractive boys (Rich, 1975). Other research has shown that poorly written essays by attractive students were graded more favorably than unattractive students (Landy & Sigall, 1974).

Everyday in every situation, humans are around other human beings, making judgments about their physical appearance. Whether one is looking for a date, applying for a job or making first impressions of children in a classroom, physical attractiveness is an important piece of human life in modern American society. The current research study is examining attractiveness of certain specific facial features in comparison to the attractiveness of an entire face. A study conducted by Hassebrauck in 1998 showed that there are behavioral differences between evaluation of attractiveness of males and females. In this study, a computer program allowed the participant to remove coverings on a picture of a person to reveal different body parts; for example, the eyes, mouth, and upper body. Male and female participants rated both males and females on attractiveness. With the male and female results put together, it took fewer body parts to be uncovered on the male face than the female face for an evaluation to be made of the subjects' attractiveness (Hassebrauck, 1998). This showed that facial features of the

female may be studied or looked at for a longer period of time in order for a judgment to be made about their attractiveness. The current study aims to further investigate this evaluation process, by looking at attractiveness of eyes and mouths of a male and female, verse the entire face. Eye saccades will also be measured while the participants view the pictures. The hypothesis is that while participants are viewing a photo of a member of the opposite gender, there will be more eye movements, and a higher rating of physical attraction. Remington (1980) explained that something that catches the attention of an individual will cause more saccadic eye movements. The researchers feel that an attractive member of the opposite sex would catch the attention of the participant and cause this rise in saccadic eye movements. It is also hypothesized that the entire face will be found to be the most attractive, followed by the eyes, and then the mouth for both male and female subjects.

Method

Participants

Twenty-four male and female Albright College students between the ages of eighteen and twenty two were randomly selected from the participant pool in this study and assigned into one of two experimental groups. Participants were given incentives for their agreement to be a participant. The participants who are currently enrolled in a psychology course received five points extra credit for their participation. All participants were also offered snacks for their participation.

Materials

Each participant had an informed consent form explained to them prior to their signature on the document. Participants were hooked up to the psycho-physiological equipment (IWorx PK214) which measured eye saccades while viewing pictures of human facial features on a Power Point slide show. Group A first viewed pictures of female eyes, followed by a picture of a female mouth, then an entire female face. They then viewed male eyes, mouth, and face. Group B viewed the male facial features first, followed by the female facial features. Questionnaires were used in both groups following the slide show which addressed the participants' feelings about the physical attractiveness of the pictures viewed.

Procedure

As the participants entered the lab, they were immediately given the informed consent form to read and sign. All participants were then asked if they had any questions or concerns. All participants were then hooked up to the psycho-physiological equipment and made sure that they were comfortable. All participants were then given an

opportunity to ask questions about the study before it began. The participants that were randomly selected to be in Group A watched Power Point A with the female facial features first, followed by the male facial features. Participants that were randomly selected to be in Group B watched Power Point B with the male facial features first, followed by the female facial features. Participants in each group viewed each picture for ten seconds while their oculomotor muscle activity was recorded using the Labscribe Software. Baselines were recorded for thirty seconds before and after both slide shows.

At the completion of the slideshow, all participants were unhooked from the equipment and were given a questionnaire about their feelings towards the pictures viewed. The pictures of the facial features were again shown on the questionnaire, and the participants were asked if they felt each picture was physically attractive. The participants were assured that any and all responses given will be kept absolutely confidential and their names would not be associated with their responses, and any displaying of the data from this study will be in group form only.

After the participants completed the study, they were debriefed and assured once again that their reactions would be kept entirely confidential and their names would not be associated with their responses. The participants were then asked if they had any questions or concerns regarding the study. The participants were then thanked for their contribution to the study.

Scoring

Participants viewed a picture of male eyes, a male mouth, and then the entire face of a male on a PowerPoint presentation while their eye movements were recorded with the LibeScribe Software. They also viewed a picture of female eyes, a female mouth, and

then the entire face of a female on a PowerPoint presentation while their eye movements were recorded. The means of eye movements were computed while viewing each photo by the LabScribe Software, as well as during the two baseline periods. After viewing these pictures, participants answered questions concerning their feelings towards the pictures. For both male and female eye and mouth pictures, participants were asked if they felt the feature was attractive, and also if they felt the person in the photo was attractive. On the pictures of the entire face, participants were asked if they felt the eyes were attractive, if they felt the mouth was attractive, and if they felt the entire face was attractive. Participants were asked if they strongly agreed, agreed, disagreed, or strongly disagreed with the feature or the person being physically attractive. The items were then scored as strongly disagree as being a one and strongly agree being a four.

<div align="center">Results</div>

Overall Attractiveness of Male and Female Pictures

A two-way analysis of variance for mixed measures was used to assess the significance of all of the variables in this study. The overall attractiveness of the male pictures was assessed first. The question on each male picture asking the participant to estimate the overall physical attractiveness of the male were compared as well as gender of the participant. The descriptive statistics are displayed in Table 1. The main effect of the overall attractiveness of the male pictures was significant, $F (2, 44) = 6.720$, $p = .003$. Attractiveness was scored on a scale of one to four, with one being the least attractive and four being the most. The participants rated the Male Face to be the best indicator of the subject's attractiveness with a mean score of 2.861. The Male Eyes were rated second with a mean score of 2.571, and the Male Mouth was rated third with a mean score of

2.412. The main effect of gender was also significant, $F_{(1, 22)} = 40.461$, $p = .000$. That is, the female participants scored the male pictures as more attractive than the male participants. The mean score given by male participants for the overall attractiveness of the male pictures was 2.190, while female rated the male pictures with a mean score of 3.039.

Overall mean attractiveness ratings for the female pictures are displayed in Table 2. The main effect of the overall attractiveness of the female pictures was not significant, $F_{(2, 44)} = 2.394$, $p = .103$. This was a comparison of the questions on each female picture which asked the participant to estimate the overall physical attractiveness of the female. The attractiveness ratings were only slightly different; however, the data was similar to the male ratings. The Female Face was rated as the best predictor of the overall attractiveness with a mean rating of 3.197, the Female Eyes were second with a rating of 3.013, and the Female Mouth was third with a rating of 2.971. The main effect of gender was significant, $F_{(1, 22)} = 6.434$, $p = .019$.

Attractiveness of Male and Female Eyes

Next the attractiveness of the individual facial features was assessed. The first question on the pictures that displayed only one facial feature asked the participant if they felt the particular facial feature was physically attractive (i.e. the eyes or mouth). This was compared to the question on the picture of the entire face which again asked if a specific facial feature was physically attractive. Again, a two-way analysis of variance for mixed measures was conducted. The descriptive statistics are displayed in Table 3. The main effect of ratings of the attractiveness of the Male Eyes when shown alone or shown on the entire face was not significant, however it was approaching significance, F

(1, 22)=3.983, p=.058.   The Male Eye picture had a score of 2.630 and the Male Eye question on the Male Face picture had a rating of 2.819. However, the main effect of gender was significant, F (1, 22) =38.065, p=.000. Females rated the male eye significantly more attractive than male participants did, with the female mean rating being 3.235 and the male mean rating being 2.214.

The main effect of the Female Eyes alone and the eyes shown on the entire face was also not significant, F (1, 22)-3.506, p=.074. The descriptive statistics for this analysis are displayed in Table 4. The Female Eyes picture had an attractiveness rating of 2.929, while the Female Eyes on the entire female face had a mean rating of 3.143. The main effect of gender was also not significant, F (1, 22) =.097, p=.758. Males rated the Female Eyes only slightly higher with a mean rating of 3.071 and female participants had a mean rating of 3.000.

Attractiveness of Male and Female Mouths

Attractiveness ratings were recorded for the Male and Female Mouths alone and as part of the entire face. The main effect of the Male Mouth shown alone and the mouth shown on the entire face was significant, F (1, 22) =13.208, p=.001. The descriptive statistics for this analysis are shown in Table 5. When rated as a part of the entire face, the mouth was rated much higher by participants with a mean rating of 2.672, while the mouth alone had a mean rating of 2.252. The main effect of gender was also significant, F (1, 22) =16.263, p=.001. Females rated the Male Mouth significantly higher than male participants with the mean female rating being 2.853 and the mean male rating being only 2.071.

The main effect of the Female Mouth alone and the Female Mouth on the picture

of the entire female face was not significant, $F_{(1, 22)} =.015$, p=.904. The Female Mouth

alone had a mean attractiveness rating of 2.941, while the Female Mouth on the entire

female face was scored only a little bit higher with a mean rating of 2.954. The

descriptive statistics for this two-way analysis of variance are displayed in Table 6. The

main effect of gender was also not significant, $F_{(1, 22)} =1.819$, p=.191. Females rated

the Female Mouth at a mean rating of 2.824 while male participants only rated it slightly

higher at 3.071.

EOG Readings While Viewing Male and Female Pictures

Before rating the attractiveness of the pictures on the questionnaire, participants

were hooked up to the BioPsych Equipment in order to take readings of their eye

movements while viewing the pictures first on a PowerPoint Presentation. Two baseline

periods were recorded before and after the pictures were shown. EOG readings were

recorded during all periods. This data is displayed in Table 7. The main effect of EOG

readings while viewing different pictures of male facial features was not significant, $F_{(4, 88)} =.504$, p=.733.   All of the means range from .00996 to .01494.   The main effect of

gender s was not significant, $F_{(1, 22)} =.076$, p=.786.   Male and female participants both

had a mean EOG reading of .013.

The main effect of EOG readings while viewing the Female pictures was also not

significant, $F_{(4, 88)} =.571$, p=.684. The descriptive statistics are displayed in Table 8.

The means ranged from .00996 to .01565. The main effect of gender was also not

significant, $F_{(1, 22)} =.044$, p= .836.

Discussion

Significance was found with the overall attractiveness of the male pictures. This means that participants rated the picture of the Male Face much higher than the pictures of the Male Eyes and Male Mouth. This is perhaps because the participants were really being asked to estimate the attractiveness of the male on the pictures that only displayed the features, and it was much easier to do so when they viewed the entire face. There was also a main effect of gender. This means that females rated the male pictures significantly higher than the males rated the male pictures. This was expected by the researchers.

Unlike the male pictures, significance was not found for the overall attractiveness of the female pictures. This means that the attractiveness ratings for all three pictures were quite similar. This is quite interesting and seems to contradict the findings of Hassebrauck (1998) who said that males' attractiveness could be judged easier with less body parts showing. It seems as though in this case, the females were judged more accurately with less body parts showing. What was also interesting was that even though there were many more female participants, the female pictures were rated as more attractive than the male pictures. There was, however, a main effect of gender. In this case, the males scored the female pictures as more attractive than the female participants, which was expected by the researchers.

Next the specific Male and Female Eye attractiveness ratings were assessed. For the picture of the Male Eyes, there was no significant difference between the ratings of the picture with only the eyes showing, and the picture that showed the entire face. This meant that showing the eyes alone and showing the eyes in a face did not change the

rating of their attractiveness. There was, however, a main effect of gender, meaning that female participants rated the eyes significantly more attractive than male participants.

The Female Eye attractiveness ratings also showed no significant difference when viewing the eyes alone or the entire face. There was also no main effect of gender on this data. It is quite interesting that males and females rated the Male Eyes significantly different, but both genders rated the Female Eyes very similarly.

The attractiveness of the Male and Female Mouths were also recorded. The Male Mouth was rated as significantly more attractive when shown with the entire face as when shown alone. Also, females rated the Male Mouth significantly higher than male participants. The interesting thing about this statistic is that the mean male participant's rating was only 2.071. If a participant scored a 2.000 on a questions, this meant that they disagreed that the picture was physically attractive, meaning that the majority of the male participants felt that the male mouth was unattractive.

The difference of the attractiveness ratings for the Female Mouth alone and the Female Mouth shown on the entire Female Face were not found to be significant. Also, the gender of the participant did not affect the data, as it did for the Male Mouth. The interesting part of this data is that female participants only rated the Male Mouth slightly higher than the Female Mouth.

The hypothesis that the entire face would be considered most attractive was verified with the data collected. Both Male and Female pictures of the entire face were rated highest for both, with the Eyes second and the Mouth as the least attractive facial feature for both genders. It was interesting that all of the male features had a main effect of gender, but this did not hold true for females, although males did always rate the

female slightly higher, it was not significant. What made this even more interesting is that many more females participated in this study than males. Perhaps this is due to social pressures that would cause males to fear saying another male was attractive, for fear that they may be called homosexual. It would be interesting to perhaps design a study in which males felt that their responses were more anonymous or where they did not need to give demographic information and see if their response set differed.

The difference in EOG readings while viewing male or female pictures was not found to be statistically significant. This means that there was not a large enough difference in eye movements when viewing the different pictures. This was true for both male and female participants, while viewing male picture, female pictures, and during the baseline period. Because of this, the hypothesis that more eye movement would be present when viewing a member of the opposite sex was not verified. A more sensitive eye tracking measure may have shown significance, however, such equipment was not available for use.

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Table 1

Overall Attractiveness of Male Pictures

	Gender of Participant	Mean	Standard Deviation	N
Male Eye Question	Male	2.14	.378	7
	Female	3.00	.354	17
	Total	2.75	.532	24
Male Mouth Question	Male	2.00	.000	7
	Female	2.82	.393	17
	Total	2.58	.504	24
Male Face Question	Male	2.43	.787	7
	Female	3.29	.470	17
	Total	3.04	.690	24

Table 2

Overall Attractiveness of Female Pictures

	Gender of Participant	Mean	Standard Deviation	N
Female Eye Question	Male	3.14	.378	7
	Female	2.88	.332	17
	Total	2.96	.359	24
Female Mouth Question	Male	3.00	.577	7
	Female	2.94	.429	17
	Total	2.96	.464	24
Female Face Question	Male	3.57	.535	7
	Female	2.82	.393	17
	Total	3.04	.550	24

Table 3

Attractiveness of Male Eyes

	Gender of Participant	Mean	Standard Deviation	N
Male Eye Question	Male	2.14	.378	7
	Female	3.12	.332	17
	Total	2.83	.565	24
Male Eye/ Male Face Questions	Male	2.29	.488	7
	Female	3.35	.493	17
	Total	3.04	.690	24

Table 4

Attractiveness of Female Eyes

	Gender of Participant	Mean	Standard Deviation	N
Female Eye Question	Male	2.86	.378	7
	Female	3.00	.612	17
	Total	2.96	.550	24
Female Eye/ Female Face Question	Male	3.29	.756	7
	Female	3.00	.500	17
	Total	3.08	.584	24

Table 5

Attractiveness of Male Mouth

	Gender of Participant	Mean	Standard Deviation	N
Male Mouth Question	Male	1.86	.690	7
	Female	2.65	.493	17
	Total	2.42	.654	24
Male Mouth/ Male Face Question	Male	2.29	.488	7
	Female	3.06	.429	17
	Total	2.83	.565	24

Table 6

Attractiveness of Female Mouth

	Gender of Participant	Mean	Standard Deviation	N
Female Mouth Question	Male	3.00	.577	7
	Female	2.88	.485	17
	Total	2.92	.504	24
Female Mouth/ Female Face Question	Male	3.14	.378	7
	Female	2.76	.437	17
	Total	2.88	.448	24

Table 7

EOG Readings for Male Pictures

	Gender of Participant	Mean	Standard Deviation	N
Baseline 1	Male	.01343	.000535	7
	Female	.01324	.002658	17
	Total	.01329	.002236	24
Male Eyes	Male	.01471	.003094	7
	Female	.01494	.002772	17
	Total	.01488	.002802	24
Male Mouth	Male	.01271	.001704	7
	Female	.01412	.002421	17
	Total	.01371	.002293	24
Male Face	Male	.01300	.002160	7
	Female	.01406	.003172	17
	Total	.01375	.002908	24
Baseline 2	Male	.01357	.001134	7
	Female	.00847	.022224	17
	Total	.00996	.018695	24

Table 8

EOG Readings for Female Pictures

	Gender of Participant	Mean	Standard Deviation	N
Baseline 1	Male	.01343	.000535	7
	Female	.01324	.002658	17
	Total	.01329	.002236	24
Female Eyes	Male	.01343	.000976	7
	Female	.01565	.003390	17
	Total	.01500	.003050	24
Female Mouth	Male	.01286	.001069	7
	Female	.01412	.002595	17
	Total	.01375	.002308	24
Female Face	Male	.01471	.001496	7
	Female	.01453	.002478	17
	Total	.01458	.002205	24
Baseline 2	Male	.01357	.001134	7
	Female	.00847	.022224	17
	Total	.00996	.018695	24