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SIZE OF NOSE AND MOUTH AS COMPONENTS OF FACIAL BEAUTY

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

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By

JAN STAAT

Norman, Oklahoma

1977

SIZE OF NOSE AND MOUTH AS COMPONENTS

OF FACIAL BEAUTY

A DISSERTATION

APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY

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Size of Nose and Mouth as Components

of Facial Beauty

Jan Staat

University of Oklahoma

Abstract

Four experiments designed to extend and substantiate results of previous research showing the importance of feature size to facial attractiveness are reported. The first three experiments involved the use of an Identi-Kit. In the first experiment subjects were provided with sets of Identi-Kit materials that included small, medium, and large noses and mouths. Subjects constructed attractive and unattractive faces using these materials. In the second and third experiments subjects chose the more attractive of pairs of preconstructed Identi-Kit faces that varied in nose and mouth size. The pairs of faces in the second experiment varied in other characteristics as well as nose and mouth size, while those in the third experiment were identical except for nose and mouth size. All three Identi-Kit experiments showed that smaller features are considered more attractive than larger features. The fourth experiment investigated the importance of feature size to facial attractiveness in real peoples' faces. Attractiveness ratings of photographs were correlated with measurements of the noses and mouths of the individuals photo-

graphed. A significant and negative relationship was found between attractiveness ratings and feature size of female faces. The correlations on the male faces revealed a negative, though not significant, relationship between attractiveness ratings and feature size of male faces.

Size of Nose and Mouth as Components of Facial Beauty

Jan Staat

University of Oklahoma

The bulk of research on physical attractiveness has been devoted to discovering the social consequences of being physically attractive or unattractive. There has been considerable research on this topic in recent years, and it is quite consistent in showing that physically unattractive people are viewed in a much more negative light or treated in a much more unfavorable way than attractive people. For example, attractive individuals are seen as more poised, self confident, interesting, sociable, and outgoing than persons of lesser physical attractiveness (Dion, Bersheid, & Walster, 1972; Miller, 1970). They are also more likely to receive assistance when in distress (West & Brown, 1975; Benson, Karabenick, & Lerner, 1976), to receive a more favorable rating on a job application (Dipboye, Fromkin, & Wiback, 1975), and to be given a shorter prison sentence (Efran, 1974; Izzett & Leginski, 1974) than unattractive individuals. Attractiveness in these experiments is typically determined prior to the experiment by rating photographs that are later presented to the subjects for evaluation. For a review of this literature, see Berscheid and Walster, 1974.

Research aimed at determining the elements or constituents of physical beauty has, on the other hand, been quite limited. One early study which examined the constituents of physical beauty was by Taylor and Thompson (1955). In this study pairs of faces were presented to subjects ranging in age from 7 to 21 years. A standard face was constructed according to the classic proportions of Leonardo Da Vinci, and variations upon the standard were made by increasing or decreasing, in a systematic manner, the size of features and distance between them. It was found that as age increased, so did the tendency to prefer the standard face. In addition, a preference was noted for thinner lips, wider mouths, and shorter noses.

McCullers and Staat (1974, Note 1) approached the problem of the components of facial beauty from a slightly different viewpoint. Rather than have subjects judge the attractiveness of pairs of faces as did Taylor and Thompson, they asked subjects to draw attractive and unattractive faces. It was found that both black and white American subjects as well as a number of groups of foreign subjects drew significantly longer and wider noses and longer and wider mouths on the unattractive faces than on attractive faces.

Even though these studies are highly consistent and have been well replicated there is a possibility that the results reflect an artifact of methodology rather than the subjects' true conceptions of beauty. If unattractiveness is a distortion of an ideal or standard face as Taylor and Thompson (1955) suggest, it would be easier to distort features in the larger than in the smaller

direction. It is virtually impossible to draw a grotesquely small nose or mouth. That is, the artist is limited as to how much smaller than normal he (or she) can draw features even if they are eliminated altogether. The only limitation upon how large a particular feature can be drawn, on the other hand, is the size of the paper. For this reason, before accepting conclusively the importance of feature size to facial beauty, the McCullers and Staat results should be substantiated using other methodologies. Four experiments were designed to do this. The first three involved the use of the Identi-Kit,[1] which was originally designed for the identification of criminal suspects. The Identi-Kit consists of a series of transparent overlays containing different hair, eyes, noses, mouths, etc. These may be combined in an almost infinite number of ways to form different composite faces. In the first study, subjects constructed their own Identi-Kit versions of attractive and unattractive faces. This experiment is similar to the drawing studies in that the subject was free to create faces that fit his own conception of beauty. However, the possible artifact of the drawing method is eliminated. In the second and third studies faces which varied in nose and mouth size were constructed by the experimenter and presented to the subjects in pairs for attractiveness judgments. The pairs of faces in the second experiment varied in all characteristics (hair, eyes, eyebrows, as well as nose and mouth). In the third study the pairs of faces were identical except for nose and mouth differences. A very brief exposure of the faces in the third study was necessary to prevent

the subject from detecting that the pairs were identical except for nose and mouth size. The fourth experiment was an attempt to relate feature size and facial attractiveness using photographs of real people rather than drawings or Identi-Kit faces.

Experiment I

In the McCullers and Staat (1974, Note 1) drawing studies it often appeared that subjects drew features on the unattractive faces of a distorted or unrealistic size. The aim of this first study was to have the subject create faces that fit their own conception of beauty, as in the drawing studies, where all features available are of a realistic size. Thus, it will be possible to determine if subjects still prefer small features on attractive and large features on unattractive faces, when extreme distortions are not possible.

Method

Subjects. The subjects were 40 white undergraduates at the University of Oklahoma. They were randomly selected with the restriction that each sex was equally represented.

Materials. Two complete sets of facial characteristics, each containing six hairstyles, six pairs of eyes, six pairs of eyebrows, six noses, and six mouths, were selected from the Identi-Kit for use in this experiment. One set was appropriate for constructing female faces and one was appropriate for constructing male faces. Two large, two small, and two medium-sized noses and mouths appeared in each

set.[2] The two noses and mouths of a given size were as similar in absolute size and shape as was possible. Hairstyles, eyes, and eyebrows chosen were appropriate for constructing faces of about the same age as the subjects in the experiment (18 to 25 years). Identi-Kit code numbers of the features used in each set were as follows. Female set: Hairstyles (153, 146, 147,156,154, 155); Eyes (10, 57, 71, 75, 55, 16); Eyebrows (02, 24, 82, 83, 81, 01); Noses (Small, 35, 36; Medium, 11, 13; Large, 07, 32); Mouths (Small, 3, 35; Medium, 7, 20; Large, 24, 25). Male set: Hairstyles (148,160, 159, 133, 134, 141); Eyes (18, 69, 15, 72, 14, 48); Eyebrows (21, 51, 14, 42, 67, 04); Noses (Small, 36, 37; Medium, 28, 29; Large, 15, 16); Mouths (Small, 01, 14; Medium, 29, 28; Large, 05. 16). The facial characteristics are reproduced in Appendix D at a size reduction of one-third.

Procedure. The subjects were seen individually. Each subject was given a brief description of the Identi-Kit materials and shown how they were to be used. A male or female set of facial characteristics was then arranged in front of the subject and he was asked to construct either the most or least attractive face that he could. All subjects constructed an attractive and unattractive male and female face, with order of construction being randomized across subjects. Subjects were allowed 10 minutes to complete each face. If at the end of nine minutes the subject was not finished he was warned that he had only one more minute to complete the face. Two subjects received this one-minute warning. All subjects completed the task within the allotted time. Instructions to the subjects are given in Appendix C.

Results and Discussion. Preliminary frequency analysis showed that the great majority of subjects constructed attractive faces with small noses and unattractive faces with large noses. Thirty-three subjects constructed the attractive male face with a small nose, seven subjects used a medium-sized nose, and no one used a large nose. In constructing the attractive female face, 36 subjects used a small nose, four used a medium-sized nose, and no one used a large nose. The pattern was more or less reversed in the construction of the unattractive faces. For an unattractive male face, one subject chose a small nose, six a medium, and 33 used a large nose; for the unattractive female face, eight subjects chose a small nose, four chose a medium and 28 used a large nose. Although there was a tendency to put smaller mouths on attractive faces and larger mouths on unattractive faces, this trend was not as pronounced for mouths as for noses. Attractive male faces were actually constructed most often with a medium-sized mouth. Nine subjects chose a small mouth, 29 a medium, and two a large mouth for the attractive male face. Eleven subjects chose a small nose, two a medium and 27 a large mouth for the unattractive male face. In constructing the attractive female face, 20 subjects chose a small, 11 a medium, and nine chose a large mouth. Eleven subjects chose a small, eight chose a medium, and 21 chose a large mouth for the unattractive female face.

Because the design of the experiment contains within- as well as between-subject variables, a Chi Square analysis of the frequency data was inappropriate. For this reason, the nominal data

were converted to the absolute sizes of the features chosen and the resulting data analyzed by means of a 1 between (sex of subject) and 1 within (attractiveness of face) factor analysis of variance. The dependent measure was the length X width (measured in millimeters) of the facial feature chosen. Four separate analyses of variance were performed, two on the nose measure data (male and female face) and two on the mouth measure data (male and female face). Four separate analyses were performed because differences in the size of the features for the male and female face, and differences in the sizes of the nose and mouth made an overall analysis meaningless. Identi-Kit code numbers of the noses and mouths chosen as well as the absolute sizes of those features are given in Appendix E.

Analyses of variance on the nose size of the male and female face both showed a highly significant ($p < .0001$) main effect of attractiveness. Means and (standard deviations) of nose size for the attractive and unattractive male face were 341.138 mm^2 (15.54) and 479.938 mm^2 (107.925) respectively. For the attractive and unattractive female face the means and (standard deviations) were 285.750 mm^2 (28.178) and 355.562 mm^2 (31.302) respectively. There was also significant ($p < .03$) sex of subject x attractiveness of face interaction on the female face. This was due primarily to the fact that male subjects used smaller noses on the attractive female face than did female subjects. The means of the nose measures for the attractive female face for male and female subjects were 275.875 and 295.625 respectively.

Analyses on the mouth measures of the male and female faces again showed a highly significant main effect of attractiveness (male face, $p < .0002$; female face, $p < .003$). Means and (standard deviations) of mouth size for the attractive and unattractive male face were 119.300 (30.321) and 157.100 (39.843) respectively. For the attractive and unattractive female face the means and standard deviations of the mouth size were 124.675 (28.850) and 154.075 (43.638) respectively. Summary tables of the analyses of variance are given in Appendix B.

It is obvious from the results of this experiment that when the possible artifact of the drawing methodology is eliminated, and when all facial features are of a realistic size, the subjects still associate smaller features with attractive faces and larger features with unattractive faces. Although attractive faces were constructed with both smaller noses and mouths than the unattractive, the tendency to do this was more pronounced with noses. The fact that 50% of the attractive faces were constructed with a medium-sized mouth and 27% of the unattractive faces with a small mouth seems to indicate that a very small mouth may not be seen as attractive and may actually be unattractive (though apparently not as unattractive as a large mouth). A few subjects who tried out the small mouth on the attractive face and then changed it mentioned that it looked "bitter, or unhappy" to them. The presence of the Sex X Attractiveness interaction on the female face indicated that males prefer an even smaller nose than do females on attractive female faces. This finding is consistent with our pilot work with the Identi-Kit in which it

was found that males showed a stronger tendency than females to prefer smaller featured faces.

McCullers and Staat noted a general reluctance on the part of their subjects to draw the required faces, and a more pronounced reluctance to draw unattractive faces. The construction experiment eliminated the need to ask the subjects to draw, however, a slight reluctance or embarrassment on the part of many subjects was noted during the construction of the unattractive faces. A number of subjects would begin working on an unattractive face and then look somewhat sheepishly at the experimenter and say something to the effect of "you don't really want it that ugly, do you?" Some subjects were so uncomfortable with their "ugly face" that they actually altered it, or "toned it down" as they said. A few subjects also felt that their unattractive faces represented a different race than their attractive faces.

Experiment II

The purpose of Experiment II was again to assess the importance of feature size to facial attractiveness without the possible drawing artifact. The drawing task was eliminated and subjects were asked to judge the attractiveness of pairs of Identi-Kit faces that were preconstructed by the experimenter and varied systematically in nose and mouth size. This variation in methodology should give further indication of the relative importance of nose versus mouth in determining facial beauty (e.g., is the nose the most critical, the mouth, or are they about the same?). The simultaneous variation

of the other facial characteristics was undertaken to mask the true purpose of the experiment and make it possible to allow the subjects to visually compare the faces for a reasonable length of time.

Method

Subjects. The subjects were 40 white undergraduates at the University of Oklahoma. They were randomly selected with the restriction that the sexes were equally represented.

Materials and Apparatus. Forty-eight composite faces (24 male and 24 female) were constructed using the Identi-Kit materials to yield four nose-mouth combinations. Twelve (six male and six female) of the faces had a small nose and mouth (SS), 12 had a large nose and mouth (LL), 12 had a small nose and large mouth (SL), and 12 had a large nose and small mouth (LS). The two large and two small noses and mouths for each sex were the same ones used in Experiment I. The two most popular hairstyles, pairs of eyes, and eyebrows from Experiment I for each sex were used as the other facial characteristics. The Identi-Kit code numbers of the facial characteristics used in this experiment were as follows: Female faces: Hairstyles (153, 155); Eyes (57, 71); Eyebrows (82, 83); Noses (Small - 35, 36; Large - 07, 32); Mouths (Small - 03, 35; Large - 24, 25). Male faces: Hairstyles (134, 148); Eyes (18, 48); Eyebrows (04, 51); Noses (Small - 36, 37; Large - 15, 16); Mouths (Small - 01, 14; Large - 05, 16). The facial characteristics other than nose and mouth were counterbalanced across the four nose-mouth combinations in a way that ensured that each feature (hair, eyes, eyebrows) occurred

equally often with each nose-mouth combination. Photographic slides of the constructed faces were prepared and duplicated to yield two sets of the 48 faces. Dual Kodak Carousel slide projectors with attached tachistoscopes were used to present the slides to the subjects.

Procedure. Subjects were seen in small groups of 4 or 5. The composite faces were presented to the subjects in pairs and were organized in the projectors so that only within sex comparisons were made. The 96 slides provided eight pairings (four of each sex) within each of the six possible comparisons of nose-mouth combinations: SS vs. LL; SS vs. LS, SS vs. SL, SL vs. LS, LL vs. SL, LL vs. LS. The pairs of faces were selected so that there were no facial features common to both faces in a pair. Thus, within any given pair of faces, hair, eyes, eyebrows as well as nose and mouth were different. In order to increase generality, two random orders of presentation were used. Faces were presented to the subjects for a duration of 5 seconds, and at this time subjects indicated which face in the pair was the most attractive. Instructions to the subjects are given in Appendix C.

Results and Discussion. The dependent measure was the frequency of choice as most attractive of the 4 nose-mouth combinations (SS, SL, LS, LL). The maximum possible score for any one nose-mouth combination was 24, since within the 48 pairs, there were 8 of each comparison (4 of each sex) and each nose-mouth combination occurred 3 times in the 6 possible comparisons.

Preliminary t tests showed that sex of subject and order

of presentation made no difference, and for this reason the data were combined in all further analyses. Means and (standard deviations) of the frequency of choice of each of the 4 nose-mouth combinations were as follows: SS - 19.275 (2.470); SL - 17.250 (2.239), LS - 6.600 (2.240); LL - 4.875 (2.662).

Data were analyzed by means of individual correlated t tests. Dunn's technique (dividing the alpha level of .05 by the number of tests performed) was utilized to control Type I error. The SS combination was chosen significantly more often than SL (t = 3.907, $p < .01$); LS was chosen significantly more often than LL (t = 3.059, $p < .01$); and the combination of SS + SL was chosen more often than LS + LL (t = 23.272, $p < .01$). For a more specific analysis, the normal approximation to the binomial was used to determine whether one nose-mouth combination was chosen significantly more often than the other in each of the six comparisons.[3] Table I gives the frequency of choice of each nose mouth combination in each comparison and the computed z scores and p values. The frequency of choice of each nose-mouth combination in each of the six comparisons by subject are given in Appendix E.

It is obvious from examining Table I that although a smaller mouth was more preferred than a larger mouth, the nose was far more important than the mouth. The two comparisons in which nose size is held constant (SS-SL and LS-LL) both indicate a preference for the smaller mouth, however, the difference in frequency of choices between SS and SL and between LS and LL (50 and 62 respectively)

is not large, particularly when compared to the comparisons that hold mouth size constant and vary nose size (SS-LS and SL-LL). The fact that these two comparisons and the two that vary both nose and mouth (SS-LL and SL-LS) are so similar indicates that the nose was the major determiner of the subjects' attractiveness choices.

The same interpretation holds true when the overall means of the four nose mouth combinations are considered. Here again a smaller mouth was preferred over a larger mouth, however, the nose was by far the most important feature. Posttest interviews with the subjects further supported this interpretation. The majority of subjects mentioned the greater importance of the nose in determining their attractiveness choices. This finding is consistent with the results of Experiment I where the tendency to choose the smallest nose was greater than the tendency to choose the smallest mouth.

Experiment III

The aim of Experiment III was to continue the assessment of the importance of nose and mouth as determinants of facial attractiveness with a different methodology. Experiment III was similar to Experiment II except that the pairs of faces were identical except for nose and mouth. A brief tachistoscopic presentation of the pairs was necessary to prevent the subject from recognizing this fact. The brief presentation interval also was thought to have the advantage of requiring the subject to respond at a more affective/perceptual level than at an intellectual level. Thus, the results

of this experiment might indicate how the subject feels about nose and mouth size when he is not allowed time to think about it.

Method

Subjects. The subjects were 40 white undergraduates at the University of Oklahoma. They were randomly selected with the restriction that the sexes were equally represented.

Materials and Apparatus. The materials and apparatus used in this experiment were the same as those used in Experiment II.

Procedure. As in Experiment II the composite faces were presented to the subjects in pairs, and only within sex comparisons were made. Unlike Experiment II, however, the pairs of faces were identical in all respects except for the nose and mouth. Thus, in any given pair of faces the eyes, eyebrows, and hairstyle were the same, the only difference between the faces in the pair was the nose and mouth. As before, eight pairs (four of each sex) were judged within each of the six possible nose-mouth comparisons: (SS vs. LL, SL vs. SS, LS vs. LL, SL vs. LS, LS vs. LL, SL vs. LL). The pairs of faces were presented in 2 random orders to increase generality. Slides were presented by means of dual Kodak Carousel slide projectors with attached tachistoscopes for a duration of .5 second.[4] Subjects had 5 seconds to record their choice of the more attractive face before the next pair of faces was presented. Instructions to the subjects are given in Appendix C.

Results and Discussion. Data in Experiment III were analyzed in

the same manner as in Experiment II. As before, the dependent measure was the frequency of choice as most attractive of the four nose-mouth combinations (SS, SL, LS, LL). Preliminary t tests showed no sex differences and no order of presentation differences; the data were combined in all further analyses. Means and (standard deviations) of the frequency of choice of each of the four nose-mouth combinations were as follows: SS - 19.350 (2.107); SL - 16.975 (2.626); LS - 5.850 (2.815); LL - 5.825 (2.308). Individual correlated t tests revealed no significant difference between LS and LS ($t<1$). SS was chosen significantly more often than SL (t = 4.189, p <.01), and the combination of SS + SL was chosen more often than the combination of LS + LL (t = 24.962, p <.01). The normal approximation to the binomial was again used to determine if one nose-mouth combination was chosen significantly more often than the other in each of the six comparisons. Table II gives the frequency of chocie of each nose-mouth combination in each comparison and the computed z scores and p values. The frequency of choice of each nose mouth combination in each of the six comparisons by subject are given in Appendix E.

The pattern of results in this study is quite similar to that of Experiment II. The nose was again far more salient than the mouth. When both faces in a pair had a small nose, the size of the mouth obviously influenced the subjects' choices. They preferred a small mouth to a large one (SS chosen more often than SL). However, when both faces had a large nose, the nose was apparently so un-

attractive to the subjects that the size of the mouth did not influence their judgments, and they responded randomly to the LS-LL comparison. It appears that a large nose is so perceptually dominant that the subject simply cannot pay attention to the mouth.

The purpose of the .5-second presentation was to prevent the subjects from becoming aware of the fact that they were judging faces that were identical except for nose and mouth. This manipulation appears to have been successful. None of the subjects verbalized, in posttest interviews, the critical difference between the faces. When asked what they felt they based their decisions on, many subjects mentioned the nose. A number of them felt it was the eyes or hairstyle that determined which face was the more attractive, in spite of the fact that eyes and hairstyles were identical within a given pair. A few subjects mentioned the mouth and a few simply didn't know or couldn't verbalize what their decisions were based on.

Experiment IV

Experiment IV was an attempt to relate feature size to facial attractiveness in a more "true to life" situation. Feature size and attractiveness ratings of photographs of real faces were correlated. The purpose of this experiment was to determine if feature size plays the same role in facial attractiveness with real people's faces as it did in Identi-Kit faces and in drawings of faces.

Method

Subjects. The subjects were 80 white undergraduates at Oklahoma State University. They were randomly selected with the restriction that the two sexes were equally represented.

Materials and Apparatus. Color photographic slides were taken of 100 white male and 100 white female undergraduates at the University of Oklahoma. The subjects and students photographed were from different universities to minimize the possibility that any subjects would be acquainted with any of the students photographed. In order to ensure uniformity of the photographs, the distance of the camera from the subject and the lighting was held constant throughout the photographing sessions. All subjects were draped, had their glasses removed and were told to neither smile nor frown for the photograph. Males with facial hair were not photographed. Several facial measurements in millimeters, using metal calipers, were taken of all students photographed. The measurements included the length and width of the face, length and width of the nose and mouth, and chin length.

Procedure. Subjects rated the photographic slides on a 9-point attractiveness scale. Because it was felt that asking subjects to rate 200 photographs would produce too much fatigue, 40 subjects rated half the pictures (50 male and 50 female faces) and the other 40 subjects rated the remaining pictures. Subjects were seen in small groups of 1 to 4. The pictures were presented with a Kodak Carousel slide projector for a duration of 8 seconds. Instructions

to the subjects are given in Appendix C.

Results and Discussion. The mean attractiveness rating and (standard deviation) of the male faces was 4.31 (0.95) for male subjects and 4.22 (1.12) for female subjects. For female faces the mean attractiveness rating and (standard deviation) was 4.81 (1.05) for male subjects and 4.91 (1.06) for female subjects. Males and females showed a high degree of agreement in their attractiveness ratings of the photographs as revealed by a .90 correlation between male and female ratings of both male and female faces. The average attractiveness rating of each picture by male and female subjects was correlated with the facial measurements of the students photographed. Facial measurements in the correlational analysis included face length, face width, nose length, proportional nose length (nose length/face length), nose width, proportional nose width (nose width/face width), mouth length, proportional mouth length (mouth length/face width), mouth width, proportional mouth width (mouth width/face length), and chin length. The facial measurements and average attractiveness ratings of each photograph are given in Appendix E.

There were no significant correlations between ratings and facial measurements on the male faces. All correlations, except face length, mouth length and proportional mouth length, were negative, indicating that smaller featured faces tended to receive higher attractiveness ratings, though not significantly. For the female faces, nose width was negatively correlated with male

attractiveness ratings ($r = -.211, p < .05$) and approached significance with female ratings ($r = -.176$, $p < .10$). Mouth length was negatively correlated with both male ($r = -.302$, $p < .01$) and female ($r = -.229$, $p < .01$) attractiveness ratings. As with the male faces, most of the correlations were negative, but nonsignificant, with the exception of mouth width and proportional mouth width.

In order to refine the analysis separate correlational analyses were performed using the 10 male and female faces which received the highest and the 10 which received the lowest ratings. Because the highest and lowest rated faces were not exactly the same for male and female subjects, separate correlations were computed for each sex. There were no significant correlations on the male faces for either sex. On the female faces, mouth length was negatively correlated with the attractiveness ratings of male subjects ($r = -.752, p < .01$) and female subjects ($r = -.612$, $p < .05$). Nose width was significantly correlated with female ratings ($r = -.548$, $p < .05$), and approached significance with male ratings ($r = -.411$, $p. < .10$).

Correlations were also computed using the 10 faces with the largest noses, the 10 with the smallest noses, the 10 with the largest mouths, and the 10 with the smallest mouths of each sex. In the analysis of male faces with the largest and smallest noses, nose width was negatively correlated with both male and female ratings ($r = -.446$, $p < .05$; $r = -.445$, $p. < .05$). Male subject ratings were negatively correlated with nose length on the female

faces with the largest and smallest noses ($r = -.507, p. < .05$). No significant correlations were found for the males with the largest and smallest mouths. Male ratings of females faces with the largest and smallest mouths were correlated with mouth width ($r = -.443$, $p < .05$). Complete intercorrelation matrices of both the overall and specific analyses are given in Appendix B.

The correlational analyses showed the relationship between feature size and attractiveness ratings. Other questions which needed to be answered were whether there were differences in nose and mouth size between the highest and lowest rated faces and whether there were differences in attractiveness ratings between the faces with the largest and smallest noses and mouths.

Individual t tests revealed that the 10 females with the smallest nose were rated significantly higher than the 10 with the largest nose ($t = 3.046$, $p < .01$). A trend in this direction was found for the male faces ($t = 1.919$, $p < .10$). The mean ratings of the males with the largest and smallest noses were 3.81 and 4.72 respectively. The mean ratings of the females with the largest and smallest noses were 4.21 and 5.13 respectively. In order to be certain that faces with the largest noses actually were significantly different in nose size than those with the smallest noses, t tests were computed on the nose size of the two groups for each sex. Not surprisingly, significant differences in nose size were found between the two groups for both males ($t = 17.01$, $p < .01$) and females ($t = 8.08$, $p. < .01$). The mean nose size of the males

with the largest noses was 19.64 and with the smallest noses was 13.44. The mean nose size of the females with the largest noses was 15.59 and with the smallest noses was 10.76.

There were no differences in attractiveness ratings of the males or females with the largest and smallest mouths. Mean ratings for the males with the largest and smallest mouths were 4.17 and 4.18. For the females with the largest and smallest mouths the mean ratings were 4.92 and 4.72 respectively. As was done with nose size, t tests were computed on the mouth size of the faces with the largest and smallest mouths. Again significant differences were found for both male (t = 19.65, $p < .01$) and female (t = 21.12, $p < .01$) faces. The mean mouth size of the males with the largest mouths was 11.09 and with the smallest mouths was 5.47. For females with the largest mouths, the mean mouth size was 8.97 and for the females with the smallest mouths the mean mouth size was 4.45.

There were no significant differences in the size of the nose or mouth of the 10 highest and 10 lowest rated male or female faces. However, there was a trend (t = 2.06, $p < .10$) for the highest rated females to have smaller noses than the lowest rated females. Mean nose size of the highest rated female faces was 12.67 mm and the mean for the lowest rated female faces was 13.77 mm. For the male faces the mean nose size of the highest rated faces was 15.42 mm and for the lowest rated was 15.99 mm. The mean sizes of the mouths for the highest and lowest rated females

were 6.44 mm and 6.93 mm; the mean sizes of the mouths for the highest and lowest rated male faces were 7.99 mm and 7.78 mm respectively.

Individual t tests revealed that the ratings of the top 10% and bottom 10% of both male (t = 18.36, $p < .01$) and female (t = 8.7, $p < .01$) faces were significantly different. The mean rating of the top 10% of the male faces was 5.90 and the mean rating of the bottom 10% of the male faces was 2.29. For the females the mean rating of the top 10% of the faces was 6.65 and the mean rating of the bottom 10% of the faces was 3.13.

Both the overall and specific correlational analyses showed quite clearly that smaller noses and mouths were preferred on female faces. In every analysis significant (and negative) correlations were obtained between attractiveness ratings and nose or mouth size. In most of the analyses both nose and mouth size were related to attractiveness. The results of the analyses on the male faces, however, were much less clear cut. The only significant correlation on the male faces was with nose width when the males with the most extreme noses were considered. Although most of the correlations on the male faces were in the negative direction, indicating higher ratings for smaller features, many of them were quite small. Thus, it appears that with males, feature size plays a much smaller role in the determination of facial attractiveness than it does with females.

The t tests comparing the attractiveness ratings of the

males and females with the largest and smallest noses again show the greater importance of nose size in female faces than in male faces. Thus, the females with the smallest noses were rated significantly higher than those with the largest noses, while for males only a trend was found in this direction. There were no differences in the ratings of faces with the largest and smallest mouths for either sex, indicating the greater importance of nose size than mouth size in determining attractiveness. This greater importance of nose size was again found when the nose and mouth size of the highest and lowest rated females was compared. There was a tendency for the highest rated females to have smaller noses than the lowest rated. No such trend was obtained when the mouth size of the highest and lowest rated females was compared. While it is obvious from examining the sizes of the correlations obtained that feature size is not the only determinant of facial attractiveness, it is equally obvious that attractiveness is related to nose and mouth size, at least for females.

General Conclusions and Implications

The four experiments reported here were designed primarily to determine if the results of the drawing studies were spurious or an artifact of the drawing methodology. The answer is obviously that the smaller features drawn on the attractive faces represented true conceptions of beauty, not methodological artifacts. The three Identi-Kit studies clearly showed that smaller features were preferred on attractive faces. In the first experiment there was

also some indication that, while smaller mouths were preferred, they can also be so small as to be seen as unattractive. In the case of the nose it appeared that the smaller the nose the better in terms of facial attractiveness. The second and third studies revealed that the nose was more important than the mouth in determining facial beauty. In addition to this, the fact that the results of the tachistoscopic and extended presentation studies were so similar seems to indicate that attractiveness decisions are perceptual or affective rather than intellectual in nature. It made very little difference if subjects were allowed to think about which faces were attractive or unattractive, or if they were forced to make immediate judgments. The results of the photogrpahic study are, of course, not as clear cut as the more controlled Identi-Kit studies. However, here too, feature size was related to physical attractiveness, and the nose again seemed to be more important than the mouth. The fact that the correlations between feature size and attractiveness were not extremely high indicates that feature size is not the only component of facial beauty. This interpretation is supported by the results of the analysis showing no differences in feature size of the most and least attractive faces. In this instance, many factors contributed to the high and low ratings of these faces, and feature size was not significant. When, however, faces were selected on the basis of feature size, significant differences were found among the ratings of these faces, indicating that feature size is related to attractiveness. The drawing studies also showed that nose

and mouth size were not the only components of facial beauty. Hairstyle was extremely important to the subjects in these studies, as was complexion to a somewhat lesser extent.

Nose and mouth were originally selected for study because they are relatively unchangable characteristics (unlike hairstyle or complexion) and because there are clear differences in nose and mouth size among various ethnic groups. In the initial stages of the drawing research, it was believed that blacks and whites might differ in their conceptions of beauty and that blacks might prefer larger features since they would be more representative of the black population. The drawing research, however, showed that blacks and whites as well as other ethnic groups share a common cultural conception of beauty in which smaller features are seen as more attractive. Since the results of the four experiments reported here were in agreement with the drawing studies, and since blacks, whites, and other foreign groups did not differ in the drawing studies, it may be concluded at this time that blacks, whites, American Indians, and foreign groups do indeed share a common conception of beauty.

In view of research showing the negative consequences of being considered unattractive (e.g., Dion, Berscheid & Walster, 1972; West & Brown,1975), this common conception of beauty holds rather serious implications for any individual or group of individuals which cannot hope to meet the cultural ideal. The majority of the black population, for example, with characteristically broader features than the whites, may be seen as unattractive (and thus

less valuable) by all groups in the society, including the blacks themselves. Thus, the common conception of beauty may have adverse effects upon the self concept, self esteem, achievement and life success of individuals or groups of individuals that deviate markedly from the common standard. Future research should be aimed at determining if these somewhat pessimistic predictions have any basis in reality. Particularly important would be the investigation of young children and their self concept development. If future research does show that unattractiveness and large features seriously affect the development of the individual and minority groups, the next question would be whether anything can be done about it. It may be unrealistic to believe that the standards of beauty of a society can be changed overnight. However, simple awareness of the problem may help to alleviate it. Though the situation may seem quite grim, there is a possibility that not all the consequences of unattractiveness are bad and that not all the consequences of attractiveness are good. If, for example, attractiveness gives an unfair advantage in various situations, then attractive individuals may come to rely on their appearance and not develop any other resources. When beauty begins to fade with age, these individuals may find they have nothing to rely on. Berscheid, Walster and Campbell (Note 2) offer some support for this type of interpretation. Unattractive individuals, on the other hand, who may be discriminated against in various situations, may very well overcompensate and develop skills, inner resources, etc. that their more attractive counterparts have failed

to do. In this situation unattractiveness could actually become a positive rather than a negative characteristic.

One obvious question, stemming from this research is why there should even be a common cultural conception of beauty. Why should any group of individuals adopt a standard of beauty which the majority of their members do not fit and which may very well have adverse effects upon the members of the group? There are no real answers to this question as yet, however, several possibilities may be speculated upon. First, the standard of beauty may be a product of the dominant white society (the majority of whom have small features). By this view, the social power of the white majority would cause other groups to imitate white standards and adopt them as their own. This might explain why in years past, blacks straightened their hair and used a light-colored pancake make-up. We are constantly shown through television and movies how a good looking person should look: attractive people, whether black or white, nearly always have small narrow features. This explanation would not necessarily exclude individuals living in other countries. Western culture has become so pervasive that it indeed would be difficult to find a culture that had not been exposed to the western standards of beauty.

Another possibility is that the general preference for small features stems from racial prejudice. If blacks were considered "bad" or inferior to whites, then anything associated with blacks might also be considered "bad", including large features. If blacks also adopted the view that they were in fact "bad" or inferior, then

they too would find their own features unattractive.

A third reason why so many different groups of people share a standard of beauty is that there may be a generalized tendency to prefer the more evolved face of civilized peoples to the less evolved face of primitive peoples. The former would include small features. This explanation seems less likely than those previously discussed, but it would help to account for reports of early white missionaries in Africa and elsewhere who were perceived by the natives to be gods or supernatural beings of some sort. According to this view, both primitive and civilized man should find the face of civilized man to be more attractive.

At this time it is impossible to decide among these alternatives, and the answer must ultimately come from future research. However, the drawings collected from the Chinese students shed some light on the problem. Many Chinese students drew unattractive faces as caricatures of the oriental race. Such things as slanting eyes and protruding teeth were quite common on the ugly faces. The pretty faces, on the other hand, were completely devoid of oriental characteristics. Since the Chinese civilization is one of the oldest in the world, this tendency to draw oriental features as ugly is a somewhat convincing argument against the explanation of a generalized preference for the more civilized face. Indeed the Chinese drawings seem to point to the influence of the dominant white society as determining conceptions of beauty.

Berscheid and Walster (1974) have claimed that the

identification of facial characteristics considered to be attractive is a hopeless if not impossible task due to the complexity of the human face. They argued that it is the total Gestalt which is important, not any specific facial characteristics or relationships among them that determine attractiveness. The results of the four experiments reported here as well as the results of the drawing studies show, on the contrary, that it indeed may be possible to analyze the human face and identify characteristics that determine attractiveness. The analysis of the face should not be considered to be complete at this time. Nose and mouth were the only characteristics examined in these studies, and a relationship was found between nose and mouth size and attractiveness. There is no reason why other characteristics such as hairstyle, shape of the face, eyes, shape of the nose and mouth, etc. could not be investigated.

REFERENCE NOTES

1. McCullers, J. C., & Staat, J. Draw an ugly man: Some cross-cultural, subcultural, and developmental data. In R. J. Pelligrini (Chair.) The perception of people: Interpersonal evaluation and the attraction response. Symposium presented at the meeting of the Western Psychological Association, Sacramento, California, April, 1975.

2. Berscheid, E., Walster, E., & Campbell, R. Grow old along with me. Unpublished manuscript, 1972. Mimeograph copies available from the authors.

REFERENCES

Benson, P. L., Karabenick, S. A., & Lerner, R. M. Pretty pleases: The effects of physical attractiveness, race, and sex on receiving help. Journal of Experimental Social Psychology, 1976, 12, 409-415.

Berscheid, E., & Walster, E. Physical attractiveness. In Leonard Berkowitz (Ed.) Advances in Experimental Social Psychology, Vol. 7, New York: Academic Press, 1974.

Dion, K. K., Berscheid, E., & Walster, E. What is beautiful is good. Journal of Personality and Social Psychology, 1972, 24, 285-290.

Dipboye, R. L., Fromkin, H. L., & Wiback, K. Relative importance of applicant sex, attractiveness, and scholastic standing in evaluation of job application resumes. Journal of Applied Psychology, 1975, 60, 39-43.

Efran, M. G. The effect of physical appearance on the judgment of guilt, interpersonal attraction, and the severity of recommended punishment in a simulated jury task. Journal of Research in Personality, 1974, 8, 45-54.

McCullers, J. C.,& Staat, J. C. Draw an ugly man: An inquiry into the dimensions of physical attractiveness. Personality

and Social Psychology Bulletin, 1974, 1, 33-35.

Miller, A. C. Role of physical attractiveness in impression formation. Psychonomic Science, 1970, 19, 241-243.

Taylor, C. & Thompson, G. G. Age trends for certain facial proportions. Child Development, 1955, 26, 97-102.

West, S. G., & Brown,T. J. Physical attractiveness, the severity of the emergency, and helping: A field experiment and interpersonal simulation. Journal of Experimental Social Psychology, 1975, 11, 531-538.

Footnotes

1. The Identi-Kit is manufactured by the Identi-Kit Company, a Bangor Punta Company, Santa Ana, California. Copyright 1960, Townsend Company.

2. Because of the rather limited number of small noses in the Identi-Kit, one small nose (#36) appeared in both the male and female sets.

3. A frequency count of the number of times each nose-mouth combination was chosen as more attractive in each comparison was made. Since eight pairs of faces of each of the six comparisons were made, eight was the maximum score for any one combination within the comparison per subject, and 320 was the maximum score for all subjects. In the normal approximation to the binomial the mean of the distribution is Np (320 X .5) and the standard deviation is $\sqrt{Npq}$ ($\sqrt{320X.5X.5}$). Z scores were computed on the most frequently chosen nose-mouth combination in each comparison.

4. Pilot work using .10 second presentation resulted in subjects responding randomly.

TABLE 1

EXPERIMENT II

Frequency of Choice of Each Nose-mouth Combination

in Each of the Six Comparisons

And Computed *z* Scores

	SS-SL	SS-LS	SS-LL
Freq. of Choice	185 135	291 29	293 27
z	2.795*	14.646**	14.869**
	SL-LS	**SL-LL**	**LS-LL**
Freq. of Choice	277 43	279 41	191 129
z	13.081**	13.305**	3.466*

*$p < .01$

**$p < .001$

Table 2

Experiment III

Frequency of Choice of Each Nose-Mouth Combination

in Each of the Six Comparisons

And Computed *z* Scores

	SS-SL	SS-LS	SS-LL
Frequency of Choice	191 129	281 39	302 18
z	3.466*	13.528**	15.876**
	SL-LS	SL-LL	LS-LL
Frequency of Choice	278 42	275 45	157 163
z	13.193**	12.857**	.335

*p .01

**p .001

APPENDIX A

LITERATURE REVIEW

PHYSICAL ATTRACTIVENESS: CURRENT RESEARCH

An individual's physical appearance is the one personal characteristic that is obvious and immediately accessible to others in almost all social situations. The layman has for some time been aware of the importance of physical attractiveness, but until recently the scientific community has shown a studied disinterest in the topic. Exactly why social psychologists have disregarded appearance variables is not entirely clear. Perhaps Aronson (1969) was correct in his explanation for the neglect of the topic: "... most psychologists prefer to believe that beauty is indeed only skin deep, and avoid the investigation of its social impact for fear they might learn otherwise (p. 160)". Lindzey (1965) blamed the general unwillingness to examine physical attractiveness on the "optimistic environmentalist philosophy of American psychology which supplied a logical antagonism toward any hint of genetic determinism (p. 344)" (which would of course be implied by the discovery of any link between physical and psychological measures).

Whatever the reasons for the neglect of physical attractiveness in the past, research in the field is now "booming". The bulk of this research falls roughly into three categories. The first of these has dealt primarily with the attributions and expectations that are made about attractive and unattractive people. Typically, photographs of individuals varying in physical attractiveness are presented to subjects, who in turn make certain predictions and

attributions about the people in the photographs. Sometimes only the photograph is shown to the subjects; sometimes other information is also supplied. Occasionally, attractive and unattractive confederates interact with the subject in some way and the subject's behavior toward the confederate is measured. A second category of research has been devoted to searching for real differences between people who differ in physical attractiveness. A third category of research has been concerned with identifying the critical components or determinants of physical attractiveness.

ATTRIBUTION AND EXPECTATION RESEARCH

Most of the attribution and expectation research has been devoted to determining whether a physical attractiveness stereotype exists and, if so, what the nature of it may be. The results of these studies have shown quite clearly that such a stereotype does exist that may be summarized as "what is beautiful is good". An attractive individual is always judged in a more positive light or treated in a more favorable way than an unattractive one.

Dion, Berscheid, and Walster (1972) had subjects rate attractive and unattractive individual's photographs on a variety of personality dimensions. On every dimension the attractive people were judged to be more socially desirable. Physically attractive people, for example, were perceived to be more likely to be sexually warm and responsive, sensitive, kind, interesting, strong, poised, modest, sociable, and outgoing than persons of lesser physical

attractiveness. The subjects also predicted that the attractive individuals would have higher status jobs and would make better marriage partners. Miller (1970) in the same general type of study, found significant effects on 15 of the 17 dimensions on the Jackson and Minton (1963) Adjective Preference Scale. Although it was not independently determined which pole of each dimension was associated with social desirability, Miller concluded "a consistent pattern emerges, that of the unattractive person being associated with the negative or undesirable pole of the adjective scales, and the highly attractive person being judged significantly more positively (p. 242)". Adams and Huston (1975) extended the physical attractiveness stereotype to middle-aged persons. Both elderly people and college students rated the photographs of the middle-aged persons on a variety of personality traits. The physically attractive middle-aged persons were judged in more socially desirable terms than the unattractive, and the physical attractiveness stereotype appeared to be somewhat stronger in the elderly than in the young adults.

Unattractive people have a host of other problems in addition to the negative evaluations of their personalities. In simulated jury studies in which a photograph of an attractive or unattractive individual is attached to a description of a crime, a number of investigators (Efran, 1974; Izzett & Leginski, 1974; Nemeth & Sosis, 1973; Reynolds & Sanders, 1975; Sigall & Ostrove, 1975) have found that an unattractive defendant is given a longer prison sentence than an attractive one, even though they both supposedly committed the same crime. The attractive defendant is also seen as being less

guilty of the crime. Somewhat related to the jury studies is an investigation by Seligman, Paschall, and Takata (1974) in which a photograph of either an attractive or unattractive woman was attached to a typewritten paragraph describing how the woman either lost her job (bad outcome) or gained a promotion (good outcome). The attractive woman was attributed more responsibility for a good outcome while an unattractive woman was seen as more responsible for a bad outcome. The findings are particularly interesting in view of the fact that it was obvious to the subjects that neither woman had any objective control of the situation.

In more everyday situations, unattractive people are again at a disadvantage. A number of investigators have found that unattractive people are less likely to receive assistance when in various types of distress situations. For example, an unattractive confederate received fewer offers of help with a broken down car than an attractive one (Athanasiou & Greene, 1973); an unattractive photograph attached to a school application left in an airport elicited fewer attempts to deliver the "lost" application than one with an attractive photograph attached (Benson, Karabenick, & Lerner, 1976); and an unattractive confederate in a medical emergency received less monetary assistance than an attractive person (West & Brown, 1975). It has also been demonstrated that unattractive individuals are more likely to be given an unfavorable rating on a job application (Dipboye, Fromkin, & Wiback, 1975), and more likely to be a given poor evaluation on a written essay (Landy & Sigall,

1974) than attractive individuals. Additionally, unattractive confederates are less able to influence the work output of subordinates (Mills & Aronson, 1965), or effect an opinion change (Sigall, Page, & Brown, 1971). If these considerations did not provide reason enough to want to avoid physically unattractive people, there is even some evidence that people who associate with an unattractive individual may also be judged in a negative light (Bar-Tal & Saxe, 1976; Sigall & Landy, 1973).

Research with Children

Children, not only in adult attitudes about them, but also in their attitudes about each other, are not immune to the stereotypes associated with physical attractiveness. Adult women, when watching films of children getting into trouble, see an unattractive child as being more dishonest and unpleasant than an attractive one, even though both children committed the same offense (Dion, 1972). An example of one woman's inferences about two children (one attractive, one unattractive) committing the same transgression is quite revealing. This woman said of the attractive child "she appears to be a perfectly charming little girl, well mannered, basically unselfish... She plays well with everyone, but like anyone else, a bad day can occur. Her cruelty ... need not be taken too seriously". When the same act was committed by an unattractive child this woman commented "I think the child would be quite bratty and would be a problem to teachers... she would be a brat at home... all in all

she would be a real problem". Dion (1974) also found that women are more likely to be lenient in the administration of punishment with an attractive child.

It has been demonstrated that elementary school teachers are susceptible to the physical attractiveness stereotype when evaluating bogus school records with photographs of attractive or unattractive children attached. Clifford and Walster (1973) and Clifford (1975) found that teachers express more favorable academic expectations for attractive than unattractive children. The attractive child was expected to have a higher IQ and to be more popular with peers than the unattractive. Ross and Salvia (1975) found that teachers will more readily recommend special class placement (retarded) for unattractive children.

Dion (1973) found that children as young as 3 years are well along the way toward forming the positive and negative stereotypes associated with attractive and unattractive persons. The children in Dion's study were shown photographs of attractive and unattractive preschool children with whom they were not acquainted. The children showed a consistent preference to have attractive children as their friends. They also nominated more unattractive children as exhibiting anti-social acts (e.g., hits for no reason) and more attractive children as exhibiting prosocial acts (e.g., is more friendly). One little girl, when asked what it meant to be pretty replies, "Well, people like you if you're pretty". Apparently, even before school age, children have formed many of

the same expectations as adults about attractive and unattractive individuals.

DIFFERENCES BETWEEN ATTRACTIVE AND UNATTRACTIVE PERSONS

From the research discussed in the preceeding section, it is quite clear that attractive and unattractive people are expected to differ in a number of ways. It also appears that children of different attractiveness levels may receive differing socializations across a wide variety of situations. Because of these differing expectations and socializations it would seem reasonable to expect that the physical attractiveness level of a person should effect his life in a number of ways. One might expect, for example, that attractive people would differ from unattractive in self concept, educational and career achievement, general happiness, and certain personality characteristics as well. The research in this second category has been devoted to determining what real differences, if any, exist between the physically attractive and unattractive. There has not been as much research on this topic as on the attributions and expectations, or behavior toward attractive and unattractive persons, nor is it as conclusive.

It was noted in the previous section that attractive people are expected to be more popular than unattractive, and this expectation has been substantiated. Dion and Bersheid (1974), working with preschool children, and Cavior and Dokecki (1973), working with adolescents, have found that attractive students are more popular with

their peers. A number of investigators (Curran, 1973; Glasgow & Arkowitz, 1975; Strobe, Insko, Thompson, & Layton, 1971; Walster, Aronson, Abrahams, & Rottman, 1966) have found attractiveness to be the single most important factor in dating success.

The question of whether physical attractiveness and educational success are related is still unanswered. Singer (1964) found a positive relationship between grade-point average and physical attractiveness of college women. However, since the attractiveness ratings were made by the women's professors, it is not clear whether the attractive women actually did better scholastic work, or whether the professors were more lenient in grading the pretty girls. In spite of the fact that elementary teachers expect attractive children to be better students, Clifford (1975) found no relationship between physical attractiveness, IQ, and achievement among second, fourth, and sixth grade children.

Some differences have been found between the physically attractive and unattractive on personality, general happiness and self concept. Though the evidence is far from conclusive, it appears that at least some of the beliefs people hold regarding attractive and unattractive people have been substantiated. Mathes and Kahn (1975) found attractiveness to be positively correlated with happiness and self esteem, and to be negatively correlated with neuroticism for women, but not for men. Kaats and Davis (1970) found that attractive women have higher self confidence scores and consider themselves to be more likeable than unattractive women. It has also

been demonstrated that attractive high school girls describe themselves as having personality traits more favorable to social interaction and have higher self esteem scores than unattractive girls (Minahan, 1971).

These studies all involve very young women (from high school to college age) and the pattern of results is similar in each case. There appears, however, to be a reversal when older women are investigated. Berscheid, Walster, and Campbell (Note 1) found that women of 40 to 50 years who were rated as attractive during their college years were in general less satisfied and well adjusted to their current life styles than were the women who had been rated as unattractive. No such relationship was observed for men. There was, however, suggestive evidence that the attractive men were currently wealthier than the unattractive. It is not entirely clear why Berscheid et al. (1972) found a reversal for the older women, but several reasons suggest themselves. It's possible that the women who were attractive during college were very dependent upon their beauty, and when it began to fade with age they found they had nothing else to rely on. It is also possible that happiness depends upon a comparison of one's present attractiveness with that previously enjoyed; the unattractive woman thus may have a less striking decline in attractiveness to contend with than the attractive one.

ELEMENTS OF BEAUTY

It has been said that "Except for some arbitrary beauty-contest conventions about "ideal" female dimensions, we know less about attractive stimuli for man than we do about those for fish" (Hochberg, 1964). Although there is little doubt that individuals can easily agree upon who is attractive and who is unattractive (interrater reliabilities in picture rating studies range from .70 to .90), research aimed at determining what that agreement is based on is indeed limited. Whether this is because of the perceived difficulty of measuring and analyzing physical beauty or because of a greater interest in the social consequences of attractiveness than in its determinants is not known.

One early study (Taylor & Thompson,1955) that did examine the constituents of facial beauty, presented pairs of faces to subjects ranging in age from 7 to 21 years. A standard face was constructed according to the classic proportions of Leonardo Da Vinci, and variations upon the standard were made by decreasing or increasing, in a systematic manner, the size of features and distance between them. It was found that as age increased so did the tendency to prefer the standard face. In addition a preference was noted for thinner lips, wider mouths and shorter noses. Terry and Davis (1976) had subjects rate the importance of various parts of the face as determinants of attractiveness. Subjects rated the oral region as most important, followed by eyes, facial structure, hair and nose. No attempt was made to determine the type or size of mouth or eyes,

etc. that contributed to facial attractiveness.

Most of the remaining research on the elements of facial beauty has been conducted by McCullers and his associates at the University of Oklahoma. A rather detailed description of this work will be given since the main body of the dissertation is based upon it. The McCullers group originally became interested in attempting to isolate the components of beauty as a result of one of the items on the Stanford-Binet Intelligence Scale. On this item a child is asked to look at two line drawings of women and to indicate which is pretty and which is ugly. The choice is not a difficult one, even for very young children. The "pretty" woman has fine delicate features, and a neatly coiffed hair style; the "ugly" woman has a large nose and mouth and unkempt hair. The question that intrigued McCullers and his associates was whether the Stanford-Binet item reflected a general cultural conception of beauty, and if so, whether it was common to young children and most ethnic groups. Although the two line drawings both depict white women, the features of the ugly woman could be described as more negroid than those of the pretty women. It was possible, therefore, that blacks might hold a different conception of beauty than whites. A cursory review of the facial features of attractive blacks (e.g., TV and motion picture stars) suggests, on the other hand, that blacks and whites may share a common cultural conception of physical attractiveness, i.e., pretty blacks and whites may differ in skin color and hairstyle but are often similar in the structure of basic facial features. The main questions

then were whether large noses and mouths, which cannot easily be modified, help make a person ugly, and whether blacks and whites share this conception of beauty.

Research with American Blacks and Whites[1]

In an initial experiment, black and white university students were given prepared forms and asked to sketch a good looking and an ugly male and female face in full face view within 2 x 2 inch square spaces provided on the data sheets. Subjects were also asked to list several characteristics about each face that contributed to its relative attractiveness. A number of measurements of the facial characteristics of each face were made and analyzed statistically. Such things as length and breadth of face, absolute and proportional size of the nose and mouth, the distance between the eyes and the chin length were included in the analysis. Ugly faces were significantly shorter and had more distance between the eyes than the good looking faces. Also, significantly wider and longer noses were drawn on the ugly pictures for both races. While this initial study provided partial answers to the original questions, some methodological problems made the results difficult to interpret. In spite of instructions to draw faces about 2 inches high, the actual drawings varied considerably in size. There was also a surprising tendency for some black subjects to draw black faces as good looking and white faces as ugly.

A second study was conducted similar to the first but

with added methodological improvements. Subjects again were black and white university students. The black data were collected by a black experimenter and white data by a white experimenter in hopes that this might reduce the racial bias noted in the first experiment. Also, the subjects were asked to draw faces of males and females of the same age and race as themselves. An egg shaped oval was presketched on the forms to insure uniformity of face size. Measurements of the length and width of the nose and length and thickness of the mouth were analyzed statistically. It was found that both blacks and whites drew significantly longer and broader features on the ugly faces than on the pretty faces. In addition, blacks drew larger noses and mouths on both pretty and ugly faces than whites, and both blacks and whites drew men with broader features than women.

The results of these first two studies suggested that blacks and whites do share a common conception of physical beauty in which larger, broader features are seen as less attractive. The next step was to see if these results could be replicated across a wider range of subjects. Accordingly, data were collected from American Indians and several groups of foreign students.

Cross Cultural, Subcultural and Developmental Data[2]

The first study with foreign students compared the drawings of English-speaking Iranians with Iranians who did not speak English. The aim of this study was to determine if different results would be obtained when the task was presented in English than when presented

in the native Iranian language. For the English-speaking group, the data forms and instructions were identical to those used in the second study with blacks and whites. For the native language group all aspects of the task utilized the Iranian language -- the written and oral instructions, labels for the ovals, subjects' responses etc. Measurements of the nose and mouth were made and analyzed as before. Results revealed that there were no differences between the two language groups on any of the four measures of nose length, nose width, mouth thickness, or mouth width. However, ugly faces were drawn with significantly larger noses and mouths on each of these measures.

The results were consistent with what had been found with black and white Americans. From these data it appeared that it would be possible to use the English language to work with other groups of foreign students, so long as the students had an adequate grasp of English.

Data were then collected from groups of east Indian, Chinese, and black African students at the University of Oklahoma using the same English language materials and procedures as before. Drawings were also collected from American Indians by a female American Indian student. Except for an extremely slight reversal for the east Indian group on the width of mouth measure, all groups consistently drew larger and wider noses, and thicker and wider mouths on the ugly faces than on the pretty faces. Most of these differences were statistically significant.

Even though many of the foreign students had been in this

country only a short time, it might have been possible that even a brief exposure to American society could have influenced their conception of beauty. Also, although the data were collected by an Iranian graduate student in psychology, the foreign-student subjects might have tried to respond in a way that would have been acceptable to an American conception of beauty, even if their own conception of beauty had not changed. For these reasons, additional drawings were collected from Saudi Arabian students living in and attending a university in Saudi Arabia. The data were collected by a Saudi Arabian experimenter and all aspects of the task, both written and oral employed the Arabic language. Consistent with previous findings, Saudi Arabians drew longer and wider noses and thicker and wider mouths on the ugly faces than on the pretty faces. Differences were highly statistically significant on each of these measures.

Other Methodological Approaches

Preliminary data have been gathered using several different methodological approaches to assessing the role of feature size in facial attractiveness. For example, instead of drawing attractive and unattractive faces, the subject may be asked to judge the attractiveness of pairs of faces. An Identi-Kit,[3] which was originally developed for use in identifying criminal suspects, was used to prepare the stimuli. With the Identi-Kit a composite face may be constructed from a number of transparent overlays containing different eyes, hair, noses, etc. The Kit allows selected features to be varied systematically while other characteristics are held constant. A

series of faces were presented to the subjects who then indicated which face was the better looking of the two. Some data have been collected with black and white university students. At an overall level, faces with smaller features were picked more often as attractive than those with the larger features. This preference for small noses and mouths was strongest in white males, weaker in black males and white females, and nonexistent in black females. The black females exhibited a reversal from the general trend in that they actually had a greater preference for larger than smaller features.

Banilivy (Note 4), in an unpublished Masters Thesis, used a somewhat different methodological approach with preschool children. The children were presented with pairs of faces that differed only in the size of the nose and mouth. The faces were pen and ink drawings of popular characters such as a cowboy, nurse, fireman, etc. Many children at this age were not able to detect or could not verbalize the critical way in which the pictures differed. However, those children who were able to identify the nose and mouth difference tended to pick the face with the smaller features as preferred. A second study was conducted in which the experimenter first ensured that the child was able to verbalize the nose/mouth difference prior to indicating preferences. Under these conditions, the children showed a clear preference for the smaller featured face.

CONCLUSIONS AND IMPLICATIONS FOR RESEARCH

The research on physical attractiveness to date shows quite clearly that a physical attractiveness stereotype does exist. Attractive individuals are expected to differ from unattractive ones in a variety of ways with the attractive individual always being seen in a more socially desirable light. It also appears that, at least in field experiments, attractive individuals are treated much more positively in a variety of situations than unattractive individuals. Whether these differential expectations and treatments of attractive and unattractive persons results in any real differences between the two groups is a question that has not yet been satisfactorily answered. Obviously, more research is needed on this topic before a definitive statement can be made.

The drawings studies, aimed at determining the constituents of facial beauty, show convincingly that whites, blacks, and a number of groups of foreign students prefer, in their drawings, smaller featured faces. There is a possibility, however, that these results represent an artifact of methodology rather than the true conceptions of beauty of the subjects. If, for example, unattractiveness is a distortion of the standard face, as Taylor and Thompson (1955) suggest, it may be that it is simply easier to distort in the larger rather than in the smaller direction when drawing a face. For this reason, the role of feature size in facial attractiveness should be further investigated using methodologies which eliminate the possible drawing artifact.

REFERENCE NOTES

1. Bersheid, E., Walster, E., & Campbell, R. Grow old along with me. Unpublished manuscript, 1972. Mimeograph copies available from the authors.

2. McCullers, J. C., & Staat, J. Draw an Ugly Man: An inquiry into the dimensions of physical attractiveness. Paper presented at the meeting of the American Psychological Association, New Orleans, 1974.

3. McCullers, J. C. & Staat, J. Draw an Ugly Man: Some cross-cultural, subcultural, and developmental data. In R. J. Pelligrini (Chair.) The Perception of people: Interpersonal evaluation and the attraction response. Symposium presented at the meeting, of the Western Psychological Association, Sacramento, California, April, 1975.

4. Banilivy, M. Elements of physical attractiveness: A developmental approach. Unpublished Masters Thesis, 1976.

REFERENCES

Adams, G. R., & Huston, T. L. Social perception of middle-aged persons varying in physical attractiveness. Developmental Psychology, 1975, 11, 657-658.

Aronson, E. Some antecedents of interpersonal attraction. In W. J. Arnold & D. Levine (Eds.), Nebraska Symposium on Motivation, Lincoln, Nebraska: University of Nebraska Press, 1969, 143-177.

Athanasiou, R., & Greene, P. Physical attractiveness and helping behavior. Proceedings from the meeting of the American Psychological Association, 1973, 8, 289-290.

Bar-Tal, D., & Saxe, L. Perceptions of similarly and dissimilarly attractive couples and individuals. Journal of Personality and Social Psychology, 1976, 33, 772-781.

Benson, P. L., Karabenick, S. A., & Lerner, R. M. Pretty pleases: The effects of physical attractiveness, race, and sex on receiving help. Journal of Experimental Social Psychology, 1976, 12, 409-415.

Berscheid, E., & Walster, E. Physical attractiveness. In Leonard Berkowitz (Ed.) Advances in Experimental Social Psychology. Vol. 7, New York: Academic Press, 1974.

Cavior, N., & Dokecki, P. R. Physical attractiveness, perceived attitude similarity, and academic achievement as contributors to interpersonal attraction, Developmental Psychology, 1973, 9, 44-54.

Clifford, M. M. Physical attractiveness and academic performance. Child Study Journal, 1975, 5, 201-209.

Clifford, M. M., & Walster, E. The effect of physical attractiveness on teacher expectations. Sociology of Education, 1973, 46, 248-258.

Curran, J. P. Correlates of physical attractiveness and interpersonal attraction in the dating situation. Social Behavior and Personality, 1973, 1, 153-157.

Dion, K. K. Children's physical attractiveness and sex as determinants of adult punitiveness. Developmental Psychology, 1974, 10, 772-778.

Dion, K. K. Young Children's stereotyping of facial attractiveness. Developmental Psychology, 1973, 9, 183-188.

Dion, K. K. Physical attractiveness and the evaluation of children's transgressions. Journal of Personality and Social Psychology, 1972, 24, 207-213.

Dion, K. K., & Berscheid, E. Physical attractiveness and peer perception. Sociometry, 1974, 37, 1-12.

Dion, K. K., Berscheid, E., & Walster, E. What is beautiful is good. Journal of Personality and Social Psychology, 1972, 24, 285-290.

Dipboye, R. L., Fromkin, H. L., & Wiback, K. Relative importance of applicant sex, attractiveness & scholastic standing in evaluation of job application resumes. Journal of Applied Psychology, 1975, 60, 39-43.

Efran, M. G. The effect of physical appearance on the judgment of guilt, interpersonal attraction, and the severity of recommended punishment in a simulated jury task. Journal of Research in Personality, 1974, 8, 45-54.

Glasgow, R. E., & Arkowitz, H. The behavioral assessment of male and female social competence in dyadic heterosexual interactions. Behavior Therapy, 1975, 6, 488-498.

Hochberg, J. E. Perception. Englewood Cliffs, New Jersey: Prentice-Hall, 1964.

Izzett, R. R., & Leginski, W. Group discussion and the influence of defendant characteristics in a simulated jury setting. Journal of Social Psychology, 1974, 93, 271-299.

Jackson, D. N., & Minton, H. L. A forced-choice adjective preference scale for personality assessment. Psychological Reports, 1963, 12, 515-520.

Kaats, G. R., & Davis, K. E. The dynamics of sexual behavior of college students. Journal of Marriage and the Family, 1970, 32, 390-399.

Landy, D., & Sigall, H. Beauty is talent: Task evaluation as a function of the performer's physical attractiveness. Journal of Personality and Social Psychology, 1974, 29, 299-304.

Lindzey, G. Morphology and behavior. In G. Lindzey & C. S. Hall (Eds.), Theories of Personality: Primary Sources and Research. New York: Wiley, 1965.

Mathes, E. W., & Kahn, A. Physical attractiveness, happiness, neuroticism, and self-esteem. Journal of Psychology, 1975, 90, 27-30.

McCullers, J. C., & Staat, J. C. Draw an ugly man: An inquiry into the dimensions of physical attractiveness. Personality and Social Psychology Bulletin, 1974, 1, 33-35.

Miller, A. C. Role of physical attractiveness in impression formation. Psychonomic Science, 1970, 19, 241-243.

Mills, J., & Aronson, E. Opinion change as a function of the communicator's attractiveness and desire to influence. Journal of Personality and Social Psychology, 1965, 1, 173-177.

Minahan, N. Relationships among self-perceived physical attractiveness, body shape, and personality of teenage girls. Dissertation Abstracts International, 1971, 32, 1249-1250.

Nemeth, C. & Sosis, R. H. A simulated jury study: Characteristics of the defendant and the jurors. Journal of Social Psychology, 1973, 90, 221-229.

Reynolds, D. E. & Sanders, M. S. Effect of defendant attractiveness, age and injury on the severity of sentence. Journal of Social Psychology, 1975, 96, 149-150.

Ross, M. B. & Salvia, J. Effect of attractiveness and sex on teacher willingness to recommend special class placement of children and teacher judgment of future school behavior. American Journal of Mental Deficiency, 1975, 80, 96-98.

Seligman, C., Paschall, N. & Takata, G. Effects of physical attractiveness on attribution of responsibility. Canadian Journal of Behavioural Science, 1974, 6, 290-296.

Sigall, H. & Landy, D. Radiating beauty: Effects of having a physically attractive partner on person perception. Journal of Personality and Social Psychology, 1973, 28, 218-224.

Sigall, H. & Ostrove, N. Beautiful but dangerous: Effect of offender attractiveness and nature of the crime on juridic judgment. Journal of Personality and Social Psychology, 1975, 31, 410-414.

Sigall, H., Page, R. & Brown, A. C. Effort expenditure as a function of evaluation and evaluator attractiveness. Representative Research in Social Psychology, 1971, 2, 19-25.

Singer, J. E. The use of manipulative strategies: Machiavellianism and attractiveness. Sociometry, 1964, 27, 128-150.

Strobe, W., Insko, C. A., Thompson, V. D. & Layton, B. D. Effects of physical attractiveness, attitude similarity, and sex on various aspects of interpersonal attraction. Journal of Personality and Social Psychology, 1971,

18, 79-91.

Taylor, C. & Thompson, G. G. Age trends in preferences for certain facial proportions. Child Development, 1955, 26, 97-102.

Terry, R. L., & Davis, J. S. Components of facial attractiveness. Perceptual and Motor Skills, 1976, 42, 918.

Walster, E., Aronson, V., Abraham, D., & Rottman, L. Importance of physical attractiveness in dating behavior. Journal of Personality & Social Psychology, 1966, 4, 508-516.

West, S. G., & Brown, T. J. Physical attractiveness, the severity of the emergency, and helping: a field experiment and interpersonal simulation. Journal of Experimental Social Psychology, 1975, 11, 531-538.

FOOTNOTES

1. A preliminary report of the data discussed in this section was presented at the Annual Convention of the American Psychological Association, New Orleans, 1974, (McCullers & Staat, Note 2), subsequently summarized in McCullers and Staat (1974). Judy Blackwell, John Haller, and Marianne Hunnicutt assisted in collecting the drawings by the white students. Angela Thomas collected the drawings by the black students.

2. A preliminary report of the data discussed in this section was presented in a symposium at the Annual Convention of the Western Psychological Association, Sacramento, California, 1975 (McCullers & Staat, Note 3). Debbie Spheeris collected the American Indian data, Suleiman Shaman collected the Saudi Arabian data, and Mansour Banilivy collected the African, Iranian, Chinese, Indian and children's data. Judy Blackwell assisted in the preparation of the line drawings in the experiment with children.

3. The Identi-Kit is manufactured by the Identi-Kit Company, a Bangor Punta Company, Santa Ana, California. Copyright 1960, Townsend Company.

APPENDIX B

STATISTICAL TESTS

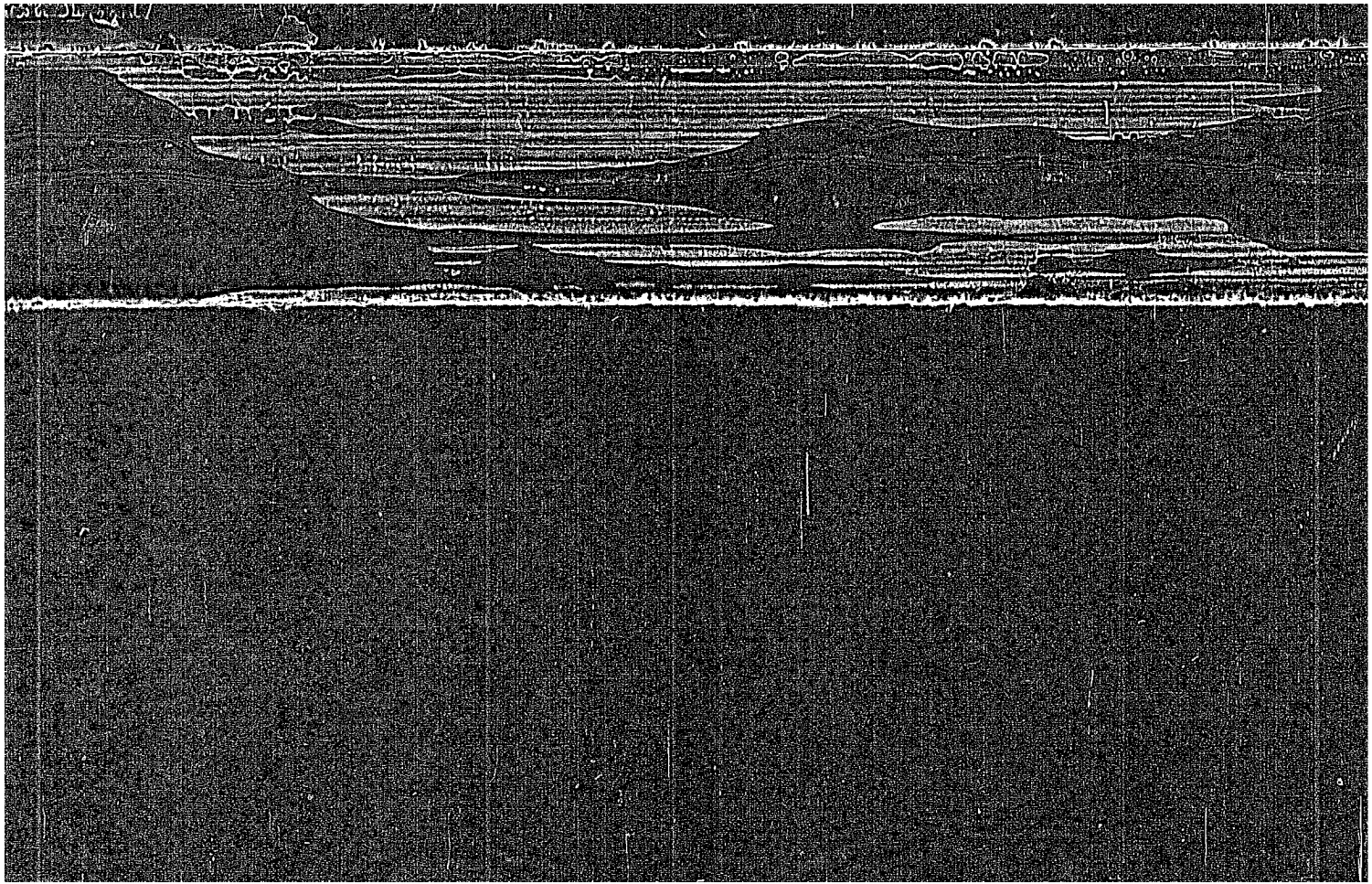
EXPERIMENT I

SUMMARY TABLE FOR 2 (SEX OF SUBJECT) X

2 (ATTRACTIVENESS OF FACE):

NOSE MEASURES, MALE FACE

Source	M.S.	df	F	P
A Sex	845.000	1	.1416	.7100
B Attractiveness	491724.750	1	82.8809	.0001
AB	1436.500	1	.2421	.6309
Error between	5968.672	38		
Error within	5932.906	38		



EXPERIMENT I

SUMMARY TABLE FOR 2 (SEX OF SUBJECT) X

2 (ATTRACTIVENESS OF FACE):

NOSE MEASURES, FEMALE FACE

Source	M.S.	df	F	P
A Sex	687.378	1	.6678	.5758
B Attractiveness	97475.688	1	125.0294	.0001
AB	3857.250	1	4.9476	.0303
Error between	1029.389	38		
Error within	779.622	38		

EXPERIMENT I

SUMMARY TABLE FOR 2 (SEX OF SUBJECT) X

2 (ATTRACTIVENESS OF FACE):

MOUTH MEASURES, MALE FACE

Source	M.S.	df	F	P
A Sex	441.799	1	.2525	.6176
B Attractiveness	28576.797	1	32.8120	.0001
AB	845.000	1	.9702	.6679
Error between	1683.052	38		
Error within	870.924	38		

EXPERIMENT I

SUMMARY TABLE FOR 2 (SEX OF SUBJECT) X

2 (ATTRACTIVENESS OF FACE):

MOUTH MEASURES, FEMALE FACE

Source	M.S.	df	F	P
A Sex	1920.799	1	1.8102	.1835
B Attractiveness	17287.199	1	10.2451	.0031
AB	217.797	1	.1291	.7218
Error between	1061.084	38		
Error within	1687.360	38		

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF MALES' FACES AND MEAN RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE & FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.2956	1.0000					
Nose Length	0.0803	0.1073	1.0000				
Proportional Nose Length	-0.4314	-0.0478	0.8643	1.0000			
Nose Width	0.2860	0.2411	0.0671	-0.0838	1.0000		
Proportional Nose Width	0.0705	-0.4755	-0.0158	-0.0497	0.7370	1.0000	
Mouth Length	0.1590	0.2033	0.1201	0.0312	0.1603	0.0024	1.0000
Proportional Mouth Length	-0.0642	-0.5059	0.0079	0.0408	-0.0586	0.2961	0.7183
Mouth Width	0.3205	-0.0299	-0.0455	-0.1996	0.3234	0.3183	0.0367
Proportional Mouth Width	0.1198	-0.0904	-0.0645	-0.1155	0.2822	0.3206	0.0113
Chin Length	0.3101	0.0832	0.1589	-0.0132	0.0343	-0.0199	-0.1179
$\bar{X}$ Male Rating	0.0524	-0.0752	-0.0618	-0.0907	-0.0859	-0.0207	0.0712
$\bar{X}$ Female Rating	0.0292	-0.0798	-0.0658	-0.0804	-0.0876	-0.0222	0.1134

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	0.0446	1.0000				
Proportional Mouth Width	0.0639	0.9777	1.0000			
Chin Length	-0.1364	0.0524	-0.0063	1.0000		
$\bar{X}$ Male Rating	0.1138	-0.1337	-0.1502	0.0942	1.0000	
$\bar{X}$ Female Rating	0.1636	-0.0429	-0.0501	0.1224	0.9031	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF FEMALES' FACES

AND MEAN RATINGS OF THE PHOTOGRAPHS OF THOSE FACES

BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.2357	1.0000					
Nose Length	0.1978	0.0077	1.0000				
Proportional Nose Length	-0.2648	-0.0986	0.8921	1.0000			
Nose Width	-0.0146	0.1209	-0.0490	-0.0425	1.0000		
Proportional Nose Width	-0.1580	-0.5420	-0.0406	0.0325	0.7653	1.0000	
Mouth Length	0.1456	0.3820	-0.0562	-0.1209	0.3502	0.0499	1.0000
Proportional Mouth Length	-0.0261	-0.3536	-0.0580	-0.0440	0.2692	0.4583	0.7274
Mouth Width	0.2686	0.1963	-0.0434	-0.1649	0.0230	-0.0936	0.0013
Proportional Mouth Width	0.0748	0.1560	-0.0824	-0.1138	0.0208	-0.0700	-0.0282
Chin Length	0.2468	0.1831	-0.0838	-0.2029	-0.0923	-0.1927	0.0310
$\bar{X}$ Male Rating	-0.0488	-0.1962	-0.0807	-0.0535	-0.1763	-0.0190	-0.3024
$\bar{X}$ Female Rating	-0.0873	-0.1088	-0.1012	-0.0584	-0.2113	-0.1044	-0.2295

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.1424	1.0000				
Proportional Mouth Width	-0.1429	0.9799	1.0000			
Chin Length	-0.1070	0.1683	0.1249	1.0000		
$\bar{X}$ Male Rating	-0.1627	0.0689	0.0852	-0.1155	1.0000	
$\bar{X}$ Female Rating	-0.1555	0.0554	0.0800	-0.0400	0.9000	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6] Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12]$\bar{X}$ Male Rating [13]$\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF 10 HIGHEST AND 10 LOWEST RATED MALE FACES, AS RATED BY MALE SUBJECTS, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE & FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.3478	1.0000					
Nose Length	-0.2592	-0.0389	1.0000				
Proportional Nose Length	-0.6972	-0.2074	0.8720	1.0000			
Nose Width	0.2319	0.3271	-0.1077	-0.1934	1.0000		
Proportional Nose Width	-0.0223	-0.4607	-0.0707	-0.0347	0.6849	1.0000	
Mouth Length	0.1760	0.3315	-0.0089	-0.0850	0.0964	-0.1593	1.0000
Proportional Mouth Length	-0.0991	-0.5390	-0.0221	0.0439	-0.1702	0.2585	0.6077
Mouth Width	0.2549	-0.0033	-0.0010	-0.1324	0.2242	0.2225	-0.2066
Proportional Mouth Width	0.0718	-0.0615	0.0378	-0.0116	0.1897	0.2298	-0.2405
Chin Length	0.1932	-0.2200	0.1492	0.0090	-0.0539	0.1400	-0.5777
$\bar{X}$ Male Rating	0.1102	-0.2220	0.0357	-0.0403	-0.2192	-0.0235	0.1263
$\bar{X}$ Female Rating	0.1777	-0.1925	-0.0109	-0.1089	-0.1541	0.0172	0.0671

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.1292	1.0000				
Proportional Mouth Width	-0.1128	0.9810	1.0000			
Chin Length	-0.3216	0.2472	0.2307	1.0000		
$\bar{X}$ Male Rating	0.3000	-0.1361	-0.1625	0.1058	1.0000	
$\bar{X}$ Female Rating	0.2264	-0.0424	-0.0790	0.1682	0.9837	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF 10 HIGHEST AND 10 LOWEST RATED MALE FACES, AS RATED BY FEMALE SUBJECTS, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.2443	1.0000					
Nose Length	-0.1629	0.1114	1.0000				
Proportional Nose Length	-0.7117	-0.0673	0.8073	1.0000			
Nose Width	0.1488	0.3938	0.1861	0.0526	1.0000		
Proportional Nose Width	-0.0207	-0.4187	0.0927	0.0889	0.6670	1.0000	
Mouth Length	0.0472	0.4989	-0.2197	-0.1902	-0.0102	-0.4019	1.0000
Proportional Mouth Length	-0.2173	-0.5192	-0.3175	-0.1045	-0.4862	-0.0602	0.3983
Mouth Width	0.3089	0.0228	0.0969	-0.1126	0.3969	0.3884	-0.1199
Proportional Mouth Width	0.1304	-0.0114	0.1259	0.0146	0.3985	0.4128	-0.1196
Chin Length	0.1290	-0.3192	0.3868	0.1969	-0.1432	0.1358	-0.5258
$\bar{X}$ Male Rating	0.2568	-0.0942	-0.0728	-0.2260	-0.1479	-0.0556	0.1701
$\bar{X}$ Female Rating	0.2656	-0.0896	-0.1610	-0.2933	-0.1204	-0.0306	0.2107

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.2235	1.0000				
Proportional Mouth Width	-0.1941	0.9814	1.0000			
Chin Length	-0.1411	0.0872	0.0743	1.0000		
$\bar{X}$ Male Rating	0.2635	-0.0315	-0.0836	0.2356	1.0000	
$\bar{X}$ Female Rating	0.3014	0.0187	-0.0342	0.1841	0.9691	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF 10 HIGHEST AND LOWEST RATED FEMALE FACES, AS RATED BY MALE SUBJECTS, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.5235	1.0000					
Nose Length	0.3520	-0.0136	1.0000				
Proportional Nose Length	-0.1031	-0.2608	0.8935	1.0000			
Nose Width	0.2082	0.3693	-0.1643	-0.2668	1.0000		
Proportional Nose Width	-0.3032	-0.5982	-0.1277	0.0120	0.5207	1.0000	
Mouth Length	0.2735	0.2918	0.0365	-0.1006	0.4429	0.1205	1.0000
Proportional Mouth Length	-0.2405	-0.6248	0.0380	0.1445	0.0513	0.6268	0.5614
Mouth Width	-0.1039	0.0854	-0.1148	-0.0576	-0.0684	-0.1403	-0.3291
Proportional Mouth Width	-0.3619	-0.0647	-0.1913	-0.0162	-0.1344	-0.0588	-0.3803
Chin Length	0.1500	0.1994	-0.4153	-0.5297	0.1373	-0.0879	0.2520
$\bar{X}$ Male Rating	-0.0076	-0.2705	-0.0553	-0.0484	-0.4106	-0.0923	-0.7517
$\bar{X}$ Female Rating	-0.0629	-0.2311	-0.1946	-0.1748	-0.4599	-0.1699	-0.6850

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.3503	1.0000				
Proportional Mouth Width	-0.2593	0.9636	1.0000			
Chin Length	0.0135	0.0169	-0.0179	1.0000		
$\bar{X}$ Male Rating	-0.3693	0.3850	0.3654	-0.2659	1.0000	
$\bar{X}$ Female Rating	-0.3507	0.3660	0.3643	-0.1354	0.9305	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [1]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF 10 HIGHEST AND 10 LOWEST RATED FEMALE FACES, AS RATED BY FEMALE SUBJECTS, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.4622	1.0000					
Nose Length	0.3506	-0.1006	1.0000				
Proportional Nose Length	-0.1114	-0.3269	0.8907	1.0000			
Nose Width	0.1890	0.2412	-0.1853	-0.2833	1.0000		
Proportional Nose Width	-0.2813	-0.7092	-0.0570	0.0763	0.5094	1.0000	
Mouth Length	0.4375	0.2384	0.0761	-0.1311	0.2161	-0.0502	1.0000
Proportional Mouth Length	0.0281	-0.5187	0.1202	0.1111	0.0316	0.4885	0.7042
Mouth Width	0.0343	0.2005	-0.2094	-0.2248	0.0153	-0.1654	0.0542
Proportional Mouth Width	-0.1764	0.0981	-0.2673	-0.1844	-0.0345	-0.1098	-0.0436
Chin Length	0.2825	0.4203	-0.0714	-0.2112	0.1848	-0.2270	-0.0394
$\bar{X}$ Male Rating	-0.2552	-0.3156	-0.1591	-0.0513	-0.5457	-0.1121	-0.5747
$\bar{X}$ Female Rating	-0.2345	-0.2923	-0.1391	-0.0401	-0.4576	-0.1333	-0.6123

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.1047	1.0000				
Proportional Mouth Width	-0.1126	0.9766	1.0000			
Chin Length	-0.3514	0.3265	0.2669	1.0000		
$\bar{X}$ Male Rating	-0.2736	0.1079	0.1665	-0.0045	1.0000	
$\bar{X}$ Female Rating	-0.3258	0.0531	0.1090	-0.0107	0.9859	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF THE 10 MALE FACES WITH THE LARGEST AND THE 10 MALE FACES WITH THE SMALLEST NOSE, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.4862	1.0000					
Nose Length	0.4758	0.2680	1.0000				
Proportional Nose Length	0.1648	0.1180	0.9455	1.0000			
Nose Width	0.4577	0.4596	0.5640	0.4646	1.0000		
Proportional Nose Width	0.2559	-0.0066	0.4853	0.4530	0.8843	1.0000	
Mouth Length	0.4819	0.2305	0.4187	0.2956	0.4996	0.4398	1.0000
Proportional Mouth Length	0.0417	-0.4764	0.1453	0.1516	0.0032	0.2472	0.6711
Mouth Width	0.0125	0.3856	0.1925	0.2150	0.6372	0.5126	0.2899
Proportional Mouth Width	-0.1990	0.2717	0.0909	0.1793	0.5353	0.4594	0.1937
Chin Length	0.4903	0.1975	0.4841	0.3663	0.2112	0.1374	0.1500
$\bar{X}$ Male Rating	0.0110	-0.2495	-0.2745	-0.3135	-0.4464	-0.3831	0.1839
$\bar{X}$ Female Rating	0.0427	-0.3177	-0.2384	-0.2826	-0.4448	-0.3442	0.1815

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.1181	1.0000				
Proportional Mouth Width	-0.1179	0.9769	1.0000			
Chin Length	0.0233	-0.3209	-0.4140	1.0000		
$\bar{X}$ Male Rating	0.3487	-0.1063	-0.1078	-0.2190	1.0000	
$\bar{X}$ Female Rating	0.4178	-0.1318	-0.1402	-0.2128	0.9434	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF THE 10 MALE FACES WITH THE LARGEST AND THE 10 MALE FACES WITH THE SMALLEST MOUTH, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.0235	1.0000					
Nose Length	-0.3889	0.0267	1.0000				
Proportional Nose Length	-0.6994	0.0216	0.9292	1.0000			
Nose Width	0.2844	0.3692	0.0500	-0.0777	1.0000		
Proportional Nose Width	0.3053	-0.2301	0.0298	-0.1062	0.8178	1.0000	
Mouth Length	-0.1288	0.3165	0.1606	0.1778	0.2833	0.0846	1.0000
Proportional Mouth Length	-0.1819	-0.3339	0.0309	0.0897	-0.1240	0.0527	0.6976
Mouth Width	0.6070	-0.0281	-0.0544	-0.2903	0.5046	0.5497	0.2591
Proportional Mouth Width	0.5206	-0.0088	-0.0110	-0.2228	0.5234	0.5542	0.3088
Chin Length	0.3311	-0.3578	-0.2309	-0.3194	0.0654	0.2906	-0.5022
$\bar{X}$ Male Rating	-0.2613	-0.1642	0.2307	0.2817	0.1997	0.3119	0.1690
$\bar{X}$ Female Rating	-0.0338	-0.0999	0.1792	0.1528	0.1991	0.2754	0.1086

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	0.2111	1.0000				
Proportional Mouth Width	0.2496	0.9938	1.0000			
Chin Length	-0.1743	0.2572	0.2302	1.0000		
$\bar{X}$ Male Rating	0.2791	-0.0912	-0.0724	-0.1020	1.0000	
$\bar{X}$ Female Rating	0.2436	0.1181	0.1223	0.1067	0.9175	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF THE 10 FEMALE FACES WITH THE LARGEST AND THE 10 FEMALE FACES WITH THE SMALLEST NOSE, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.0000						
Face Width	0.2529	1.0000					
Nose Length	-0.4805	-0.0437	1.0000				
Proportional Nose Length	0.1957	-0.1430	0.9536	1.0000			
Nose Width	0.2191	0.2702	0.5677	0.5540	1.0000		
Proportional Nose Width	0.1162	-0.1136	0.6074	0.6369	0.9248	1.0000	
Mouth Length	0.2158	0.4612	0.0852	0.0162	0.3592	0.1965	1.0000
Proportional Mouth Length	0.1016	0.0061	0.1213	0.0987	0.2721	0.2873	0.8894
Mouth Width	0.2303	0.1437	-0.0323	-0.1232	0.0181	-0.0367	-0.2952
Proportional Mouth Width	0.0368	0.1002	-0.1357	-0.1726	-0.0292	-0.0662	-0.3456
Chin Length	0.0475	0.0190	-0.1873	-0.2356	-0.5399	-0.5769	-0.1278
$\bar{X}$ Male Rating	-0.2122	-0.0913	-0.2393	-0.1824	-0.3153	-0.2857	-0.3638
$\bar{X}$ Female Rating	-0.4690	-0.0114	-0.5069	-0.4008	-0.3704	-0.3700	-0.0990

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\overline{X}$ MR[12]	$\overline{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.4148	1.0000				
Proportional Mouth Width	-0.4471	0.9806	1.0000			
Chin Length	-0.1627	0.0418	0.0301	1.0000		
$\overline{X}$ Male Rating	-0.3615	0.1279	0.1757	-0.0450	1.0000	
$\overline{X}$ Female Rating	-0.1045	0.0786	0.1758	0.1122	0.7998	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width. [11]Chin Length [12] $\overline{X}$ Male Rating [13] $\overline{X}$ Female Rating

EXPERIMENT IV

INTERCORRELATION MATRIX OF MEASUREMENTS OF THE 10 FEMALE FACES WITH THE LARGEST AND THE 10 FEMALE FACES WITH THE SMALLEST MOUTH, AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE & FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]
Face Length	1.000						
Face Width	0.4021	1.0000					
Nose Length	0.0604	-0.1314	1.0000				
Proportional Nose Length	-0.4583	-0.3181	0.8585	1.0000			
Nose Width	0.0802	0.4028	0.0455	-0.0067	1.0000		
Proportional Nose Width	-0.2769	-0.4966	0.1564	0.2717	0.5940	1.0000	
Mouth Length	0.5920	0.4555	0.0578	-0.2467	0.3329	-0.0895	1.0000
Proportional Mouth Length	0.2777	-0.3874	0.1716	0.0114	-0.0056	0.3313	0.6425
Mouth Width	0.3680	0.3676	-0.0540	-0.2203	0.0715	-0.2464	0.2561
Proportional Mouth Width	0.2565	0.3258	-0.0484	-0.1570	0.0573	-0.2230	0.1944
Chin Length	0.4508	0.2755	0.0843	-0.1522	-0.2853	-0.5235	0.4158
$\bar{X}$ Male Rating	-0.4189	-0.0036	-0.1260	0.1116	-0.2091	-0.1996	-0.4079
$\bar{X}$ Female Rating	-0.4159	-0.1324	-0.1160	0.1169	-0.2868	-0.1587	-0.4286

EXPERIMENT IV (continued)

	PML[8]	MW[9]	PMW[10]	CL[11]	$\bar{X}$ MR[12]	$\bar{X}$ FR[13]
Proportional Mouth Length	1.0000					
Mouth Width	-0.0470	1.0000				
Proportional Mouth Width	-0.0763	0.9923	1.0000			
Chin Length	0.2083	-0.0089	-0.0563	1.0000		
$\bar{X}$ Male Rating	-0.4443	0.1894	0.2525	-0.3502	1.0000	
$\bar{X}$ Female Rating	-0.3588	0.1415	0.2041	-0.3566	-.9310	1.0000

[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12] $\bar{X}$ Male Rating [13] $\bar{X}$ Female Rating

APPENDIX C

INSTRUCTIONS

The instructions for Experiment I were as follows:

This is an experiment on facial attractiveness. Your task is to construct attractive and unattractive faces using these materials. As you can see there are several hairstyles, noses, eyes, etc. You simply examine all the facial characteristics and choose the ones you want to construct the faces. Let me show you a few things about the materials and how they may be used. You may place the features in any order you wish, e.g., if a certain feature appears to be too dark or prominent, you can lighten it by placing it at the back of the stack. You are free to experiment with the characteristics. That is, if you select a feature and discover you don't like it after you have put it on the face, you can replace it and select another. You will build an attractive and an unattractive male and female face. You will have 10 minutes to work on each face. Do you have any questions?

The instructions for Experiment II were as follows:

This is an experiment on facial attractiveness. Pairs of faces will be projected on the screen in front of you. Your task is to look at the faces and to decide which of the two faces is the more attractive. The faces will be projected for 5 seconds, so you will have to decide which one is the most attractive fairly quickly. When you have decided mark your answer on the data sheet. You will notice that each number on the data sheet has an A or a B beside it. These letters correspond to the A and B you see on the screen. The faces will be projected under the A and B. If you think face A is the most attractive, circle A on your answer sheet. If you think face B is the most attractive circle B on your answer sheet. You will have 5 seconds to record your answer before the next pair of faces comes on. Males are always compared with other males; females with other females. None of these faces are extremely beautiful, none of them are grotesquely ugly. You will have to make a relative judgement of attractiveness. You may also notice that there are similarities in some of the faces. Don't let this bother you.

I will call out the slide number occasionally so that you can make sure you are on the correct number on your data sheet.

Do you have any questions?

The instructions for Experiment III were as follows:

This is an experiment on facial attractiveness. Pairs of faces will be projected on the screen in front of you. Your task is to look at the faces and to decide which of the two faces is the more attractive. The faces will be projected for a very, very brief period of time. You will have to pay close attention to the screen in order to see the faces at all. When you have decided which face is the more attractive mark your answer on the data sheet. You will notice that each number on the data sheet has an A or a B beside it. These letters correspond to the A and B you see on the screen. The faces will be projected under the A and B. If you think face A is the most attractive, circle A on your answer sheet. If you think face B is the most attractive, circle B on your answer sheet. You will have 5 seconds to record your answer before the next pair of faces comes on. Males are always compared with other males; females with other females. You may notice some similarities in the faces; don't let this bother you.

I will call out the slide number occasionally so that you can make sure you are on the correct number on your data sheet. I want to emphasize again that the faces will be presented only very briefly. Pay close attention, and decide which is the most attractive.

Do you have any questions?

The instructions for Experiment IV were as follows:

You will be shown a series of photographic slides of male and female university students like yourself. Your task is to look at the faces and to rate the physical attractiveness of each face. At the top of your data sheet you will see an attractiveness scale. On this scale the numbers range from 1 (corresponding to very unattractive) to 9 (very attractive). The mid point of the scale (number 5) corresponds to a face that in your opinion is neither attractive nor unattractive. The other numbers of the scale indicate intermediate degrees of attractiveness or unattractiveness. Thus number 4 would indicate that the rated face is only slightly unattractive and so on. When you are rating a face, decide on its attractiveness and circle the number on the scale that is closest to your own conception of the physical attractiveness of the face. In the past, people have rated the faces across the entire scale.

You will notice that the data sheet is divided into sets of male and female faces. There are 10 photographs in each set. I will tell you the set number and sex of the faces before each new set begins. It is important to remember that we will not necessarily start with set 1 so pay close attention to the set number. The picture numbers on your data sheets correspond to numbers the individuals are holding in the slides. Make sure that you are rating the correct photograph by checking the picture number on the data sheet with the number up on the screen.

We don't expect that you will know anyone in the slides since these were taken elsewhere but if you think that you do recognize

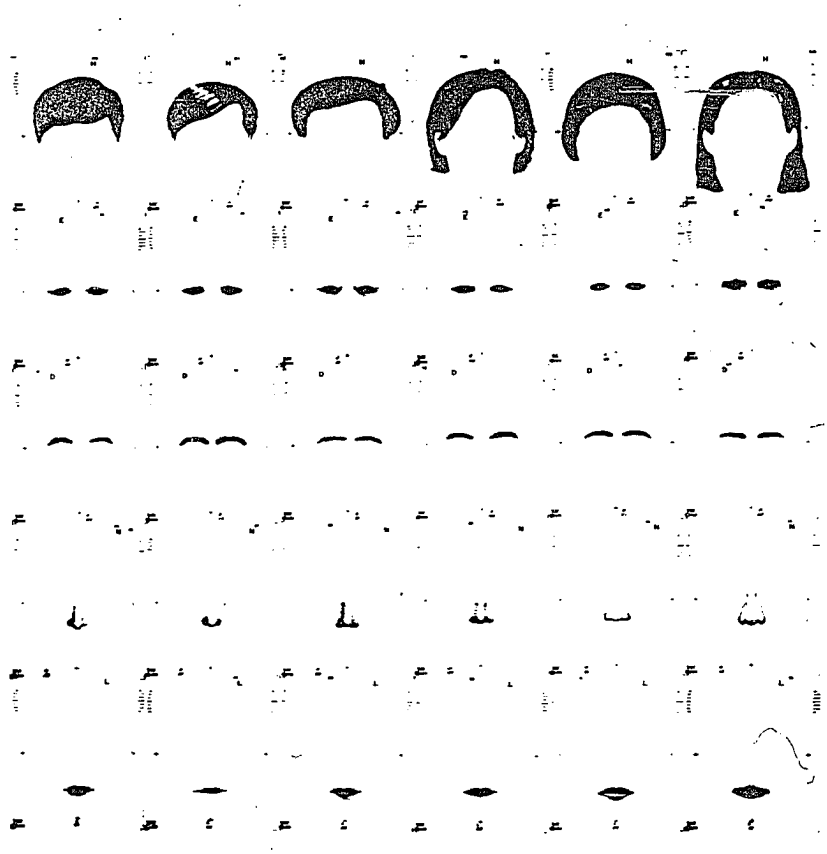
someone please write the number and the name of the person at the bottom of the sheet.

Also please remember when you are rating the photographs to circle the number on the scale and make sure that the set number is correct.

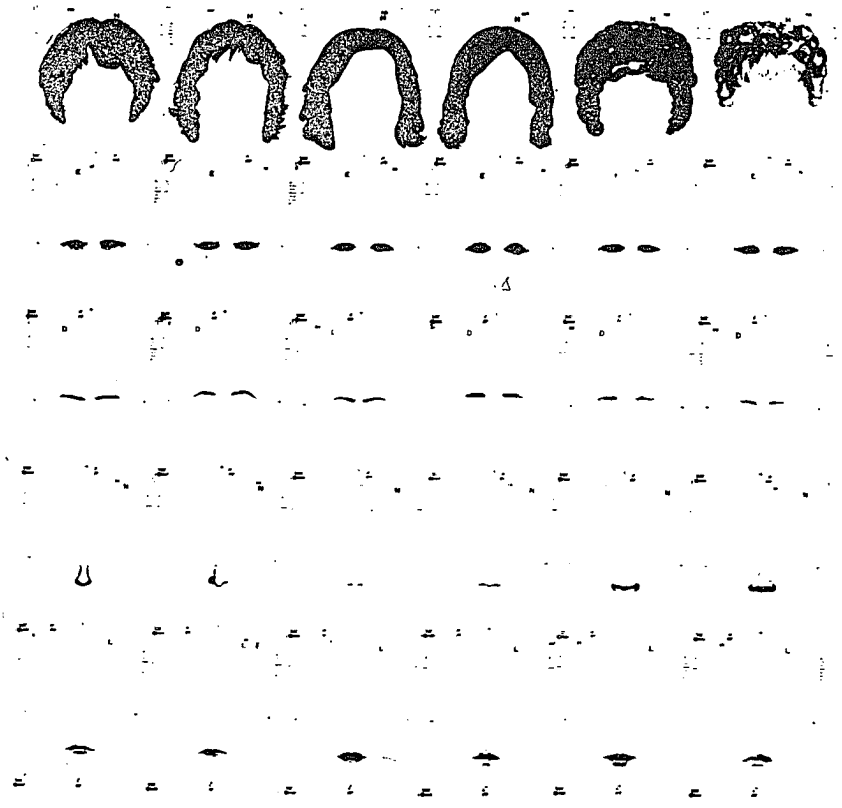
Any questions?

APPENDIX D

ILLUSTRATIONS



EXPERIMENT I: MALE FACIAL CHARACTERISTICS



EXPERIMENT I: FEMALE FACIAL CHARACTERISTICS

APPENDIX E

RAW DATA

EXPERIMENT I

LENGTHS AND WIDTHS IN MILLIMETERS OF SMALL, MEDIUM,

AND LARGE NOSES AND MOUTHS

Male Features

	Noses Identi-Kit	Code #	Length	Width	LXW*
Small		36	23	14.5	333.5
		37	24	14	336
Medium		28	22	17.5	385
		29	20	17.5	350
Large		15	19	20.5	389.5
		16	28	21	588
	Mouths				
Small		.01	20	4	80
		14	25	4	100
Medium		28	20	5.5	110
		29	24	6	144
Large		.05	25	8	200
		16	25	7	175

*Length x width

EXPERIMENT I (continued)

Female Faces

	Noses Identi-Kit	Code #	Length	Width	LXW
Small		35	20.5	13	266.5
		36	23	14.5	333.5
Medium		11	20	16	320
		13	20	17	340
Large		.07	18	21	378
		32	18	20	360
	Mouths				
Small		.03	20	5	100
		35	21	4.5	94.5
Medium		.07	18	7.5	135
		20	20	7	140
Large		24	20	8.5	170
		25	22	9	198

EXPERIMENT I

IDENTI-KIT CODE NUMBERS AND SIZES OF NOSES USED BY EACH SUBJECT TO CONSTRUCT ATTRACTIVE AND UNATTRACTIVE MALE AND FEMALE FACES

	Male Faces				Female Faces			
	Attractive		Unattractive		Attractive		Unattractive	
Male Subjects	Code #	LXW*	Code #	LXW	Code #	LXW	Code #	LXW
Subject #								
1	37	336	16	588	35	266.5	07	378
2	37	336	16	588	35	266.5	07	378
3	28	385	16	588	35	266.5	36	333.5
4	37	336	16	588	35	266.5	07	378
5	36	333.5	15	389	35	266.5	32	360
6	36	333.5	15	389	35	266.5	32	360
7	36	333.5	15	389	36	333.5	07	378
8	37	336	15	389	35	266.5	35	266.5
9	37	336	16	588	35	266.5	07	378
10	37	336	16	588	35	266.5	32	360
11	37	336	16	588	35	266.5	13	340
12	36	333.5	28	385	35	266.5	11	320
13	37	336	15	389	35	266.5	07	378
14	37	336	16	588	35	266.5	07	378
15	28	385	36	333.5	35	266.5	07	378
16	36	333.5	15	389	35	266.5	32	360
17	36	333.5	16	588	11	320	07	378
18	37	336	16	588	35	266.5	36	333.6
19	37	336	16	588	35	266.5	07	378
20	37	336	16	588	36	333.5	07	378

*Length X width of nose

EXPERIMENT I (continued)

Female Subjects

Subject #	Code #	LXW*	Code #	LXW	Code #	LXW	Code #	LXW
1	36	333.5	16	588	35	266.5	13	340
2	36	333.5	15	389	36	333.5	07	378
3	37	336	29	350	35	266.5	36	333.5
4	37	336	16	588	35	266.5	07	378
5	28	385	15	389	35	266.5	32	360
6	37	336	20	350	35	266.5	36	333.5
7	36	333.5	16	588	35	266.5	07	378
8	37	336	15	389	36	333.5	35	266.5
9	36	333.5	28	385	35	266.5	36	333.5
10	36	333.5	29	350	35	266.5	32	360
11	36	333.5	16	588	35	266.5	07	378
12	29	350	16	588	36	333.5	32	360
13	29	350	16	588	11	320	32	360
14	28	385	16	588	13	340	36	333.5
15	37	336	15	389	36	333.5	32	360
16	37	336	16	588	36	333.5	07	378
17	37	336	29	350	35	266.5	35	266.5
18	36	333.5	16	588	35	266.5	07	378
19	37	336	16	588	36	333.5	07	378
20	29	350	16	588	11	320	07	378

EXPERIMENT I

IDENTI-KIT CODE NUMBERS AND SIZES OF MOUTHS USED BY EACH SUBJECT TO CONSTRUCT ATTRACTIVE AND UNATTRACTIVE MALE AND FEMALE FACES

		Male Faces				Female Faces			
		Attractive		Unattractive		Attractive		Unattractive	
	Subject	Code #	LXW*	Code #	LXW	Code #	LXW	Code #	LXW
Male Subjects	1	01	80	14	100	07	135	07	135
	2	28	110	05	200	03	100	07	135
	3	29	144	05	200	35	94.5	25	198
	4	05	200	16	175	03	100	25	198
	5	29	144	01	80	20	140	25	198
	6	01	80	16	175	07	135	25	198
	7	29	144	16	175	07	135	20	140
	8	29	144	05	200	35	94.5	25	198
	9	28	110	14	100	03	100	35	94.5
	10	01	80	14	100	07	135	25	198
	11	28	110	16	175	03	100	20	140
	12	28	110	05	200	07	135	07	135
	13	29	144	16	175	35	94.5	35	94.5
	14	29	144	05	200	35	94.5	25	198
	15	28	110	14	100	03	100	25	198
	16	28	110	14	100	03	100	35	94.5
	17	28	110	14	100	35	94.5	07	135
	18	28	110	16	175	07	135	20	140
	19	28	110	05	200	24	170	35	94.5
	20	28	110	14	100	24	170	35	94.5

*Length X width of mouth

EXPERIMENT I (continued)

Female Subjects

Subject	Code #	LXW*	Code #	LXW	Code #	LXW	Code #	LXW
1	29	144	16	175	03	100	25	198
2	29	144	16	175	24	170	20	140
3	29	144	16	175	07	135	35	94.5
4	28	110	16	175	03	100	25	198
5	29	144	14	100	07	135	25	198
6	29	144	16	175	24	170	25	198
7	28	110	05	200	07	135	25	198
8	28	110	16	175	24	170	35	94.5
9	28	110	16	175	03	100	25	198
10	29	144	16	175	24	170	25	198
11	01	80	28	110	03	100	24	170
12	05	200	16	175	24	170	35	94.5
13	01	80	14	100	24	170	24	170
14	01	80	14	100	03	100	35	94.5
15	29	144	05	200	03	100	24	170
16	28	110	05	200	35	94.5	25	198
17	01	80	16	175	03	100	03	100
18	14	100	16	175	07	135	24	170
19	01	80	16	175	03	100	24	170
20	28	110	29	144	24	170	35	94.5

EXPERIMENT II

FREQUENCY OF CHOICE OF EACH NOSE-MOUTH

COMBINATION IN EACH OF THE SIX

FACIAL COMPARISONS

Male Subjects	SS-SL	SS-LS	SS-LL	SL-LS	SL-LL	LS-LL
1.	3 5	8 0	8 0	8 0	8 0	5 3
2.	5 3	7 1	8 0	8 0	8 0	3 5
3.	7 1	7 1	8 0	8 0	6 2	7 1
4.	4 4	8 0	8 0	7 1	7 1	6 2
5.	6 2	8 0	7 1	5 3	6 2	4 4
6.	5 3	7 1	6 2	6 2	6 2	7 1
7.	6 2	6 2	8 0	8 0	8 0	7 1
8.	3 5	7 1	4 4	5 3	7 1	2 6
9.	5 3	5 3	7 1	7 1	7 1	5 3
10.	4 4	8 0	8 0	8 0	8 0	6 2
11.	5 3	8 0	7 1	8 0	8 0	2 6
12.	4 4	8 0	8 0	7 1	7 1	6 2
13.	3 5	8 0	7 1	7 1	6 2	5 3
14.	6 2	7 1	6 2	8 0	7 1	3 5
15.	6 2	7 1	8 0	8 0	8 0	5 3
16.	5 3	8 0	8 0	5 3	7 1	6 2
17.	3 5	8 0	8 0	8 0	8 0	6 2
18.	6 2	7 1	8 0	7 1	7 1	6 2
19.	6 2	8 0	8 0	8 0	8 0	6 2
20.	3 5	8 0	8 0	5 3	6 2	4 4

EXPERIMENT II (coninued)

Female Subjects

	SS-SL		SS-LS		SS-LL		SL-LS		SL-LL		LS-LL	
1.	6	2	8	0	8	0	8	0	7	1	4	4
2.	5	3	8	0	8	0	8	0	8	0	4	4
3.	3	5	8	0	8	0	7	1	8	0	3	5
4.	7	1	7	1	8	0	6	2	7	1	7	1
5.	6	2	7	1	7	1	8	0	7	1	6	2
6.	1	7	6	2	4	4	3	5	4	4	3	5
7.	4	4	7	1	7	1	7	1	7	1	5	3
8.	4	4	6	2	4	4	4	4	5	3	6	2
9.	7	1	7	1	6	2	7	1	6	2	4	4
10.	6	2	8	0	8	0	8	0	8	0	4	4
11.	5	3	8	0	8	0	6	2	8	0	5	3
12.	2	6	6	2	8	0	8	0	6	2	1	7
13.	7	1	7	1	8	0	8	0	7	1	5	3
14.	3	5	8	0	7	1	5	3	6	2	2	6
15.	5	3	6	2	7	1	8	0	5	3	5	3
16.	2	6	7	1	7	1	6	2	7	1	7	1
17.	6	2	8	0	8	0	8	0	8	0	7	1
18.	4	4	7	1	8	0	8	0	8	0	4	4
19.	3	5	8	0	8	0	8	0	8	0	4	4
20.	4	4	6	2	8	0	5	3	6	2	4	4

EXPERIMENT III

FREQUENCY OF CHOICE OF EACH NOSE-MOUTH COMBINATION IN EACH OF THE SIX FACIAL COMPARISONS

Male Subjects	SS-SL	SS-LS	SS-LL	SL-LS	SL-LL	LS-LL
1.	6 2	5 3	8 0	4 4	6 2	6 2
2.	6 2	6 2	8 0	5 3	8 0	5 3
3.	5 3	8 0	8 0	8 0	8 0	3 5
4.	5 3	8 0	8 0	8 0	8 0	4 4
5.	6 2	8 0	8 0	6 2	8 0	5 3
6.	7 1	6 2	7 1	5 3	7 1	7 1
7.	5 3	7 1	7 1	8 0	7 1	1 7
8.	5 3	8 0	8 0	8 0	8 0	5 3
9.	4 4	7 1	8 0	8 0	8 0	5 3
10.	7 1	8 0	8 0	7 1	6 2	1 7
11.	7 1	8 0	8 0	8 0	5 3	3 5
12.	6 2	8 0	8 0	8 0	7 1	4 4
13.	2 6	6 2	6 2	7 1	5 3	5 3
14.	5 3	7 1	8 0	5 3	6 2	4 4
15.	6 2	5 3	7 1	8 0	6 2	3 5
16.	5 3	7 1	7 1	8 0	7 1	4 4
17.	4 4	8 0	7 1	7 1	6 2	4 4
18.	2 6	8 0	8 0	3 5	4 4	2 6
19.	5 3	8 0	8 0	8 0	8 0	4 4
20.	4 4	8 0	8 0	8 0	8 0	3 5

EXPERIMENT III (continued)

Female Subjects

	SS-SL	SS-LS	SS-LL	SL-LS	SL-LL	LS-LL
1.	6 2	8 0	8 0	8 0	8 0	5 3
2.	7 1	8 0	8 0	8 0	8 0	5 3
3.	4 4	6 2	6 2	6 2	6 2	4 4
4.	5 3	6 2	7 1	4 4	5 3	6 2
5.	5 3	6 2	7 1	4 4	6 2	2 6
6.	4 4	7 1	8 0	8 0	8 0	4 4
7.	4 4	8 0	8 0	8 0	8 0	5 3
8.	3 5	7 1	7 1	8 0	7 1	3 5
9.	5 3	6 2	7 1	7 1	8 0	3 5
10.	4 4	8 0	8 0	8 0	8 0	3 5
11.	7 1	7 1	8 0	5 3	6 2	8 0
12.	3 5	8 0	7 1	7 1	7 1	3 5
13.	4 4	7 1	8 0	8 0	8 0	3 5
14.	5 3	6 2	7 1	6 2	5 3	2 6
15.	3 5	6 2	7 1	8 0	6 2	5 3
16.	3 5	8 0	8 0	8 0	8 0	6 2
17.	5 3	7 1	8 0	8 0	7 1	4 4
18.	4 4	7 1	8 0	7 1	7 1	4 4
19.	3 5	6 2	6 2	7 1	6 2	2 6
20.	5 3	5 3	8 0	8 0	7 1	2 6

EXPERIMENT IV

MEASUREMENTS OF MALES' FACES AND MEAN ATTRACTIVENESS RATINGS OF THE PHOTOGRAPHS OF THOSE FACES BY MALE AND FEMALE SUBJECTS

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]	PML[8]	MW[9]	PMW[10]	CL[11]	m $\bar{X}$[12]	f $\bar{X}$[13]
1.	23.5	12.5	4.9	.2085	3.4	.2720	4.8	.3840	1.4	.0596	4.4	5.25	5.40
2.	24.4	12.0	4.2	.1721	3.6	.3000	5.0	.4167	1.9	.0779	4.1	3.05	3.20
3.	21.8	12.0	4.9	.2248	3.5	.2917	4.5	.3750	1.7	.0780	4.2	4.50	4.50
4.	25.3	12.0	5.0	.1976	3.6	.3000	4.2	.3500	2.1	.0830	3.6	3.75	3.90
5.	22.2	12.8	5.0	.2252	3.6	.2812	4.6	.3594	1.6	.0721	4.0	3.90	2.55
6.	23.6	11.0	4.9	.2076	3.6	.3273	4.8	.4364	1.5	.0636	3.4	4.35	3.50
7.	23.6	13.5	5.1	.2161	3.9	.2889	4.5	.3333	2.1	.0890	3.8	2.30	1.95
8.	24.8	13.3	4.8	.1935	3.3	.2481	4.8	.3609	2.1	.0847	4.6	4.60	4.40
9.	23.7	12.3	5.1	.2152	3.1	.2520	4.8	.3902	1.8	.0759	4.0	3.30	2.35
10.	24.3	10.9	4.8	.1975	3.3	.3028	4.9	.4495	2.1	.0864	4.0	4.15	3.65
11.	23.0	12.1	5.5	.2391	3.6	.2975	5.2	.4298	2.0	.0870	3.5	4.45	4.79
12.	23.3	12.2	4.8	.2060	3.4	.2787	5.0	.4098	2.1	.0901	4.0	4.15	4.55
13.	22.1	12.0	4.4	.1991	3.1	.2583	4.3	.3583	1.5	.0679	3.4	3.40	3.35
14.	21.5	10.9	4.7	.2186	2.9	.2660	4.5	.4128	1.8	.0837	3.6	5.80	5.45
15.	22.5	12.4	4.5	.2000	3.2	.2581	5.2	.4194	1.4	.0622	3.9	5.25	5.65
16.	21.5	11.9	4.8	.2232	3.3	.2773	4.2	.3529	1.5	.0670	3.4	1.75	1.70
17.	21.8	11.8	5.0	.2294	3.3	.2797	5.1	.4322	1.7	.0780	3.9	4.25	5.30
18.	24.0	11.6	5.2	.2167	3.6	.3103	4.8	.4138	1.9	.0792	3.6	4.70	5.25
19.	21.5	12.5	5.2	.2419	3.1	.2480	4.8	.3840	1.2	.0558	3.5	4.50	4.85
20.	24.4	12.1	4.9	.2008	3.6	.2075	4.7	.3884	2.0	.0820	3.8	5.15	5.00
21.	22.7	11.0	4.7	.2070	3.0	.2727	4.1	.3727	1.1	.0484	4.1	2.75	2.35
22.	23.9	10.6	4.8	.2008	3.5	.3302	4.4	.4151	2.0	.0837	3.5	4.35	3.50
23.	22.2	11.4	5.2	.2342	3.3	.2895	5.2	.4561	1.1	.0495	2.9	5.90	5.25
24.	24.6	13.0	4.8	.1951	3.8	.2923	4.8	.3692	2.0	.0813	4.3	5.10	4.68
25.	23.5	11.1	4.6	.1957	3.4	.3063	4.0	.3604	1.5	.0638	3.1	4.80	4.35
26.	22.3	11.7	4.9	.2197	3.2	.2735	4.9	.4188	1.1	.0493	3.1	4.00	2.90
27.	23.6	12.0	5.1	.2161	3.1	.2583	4.8	.4000	1.5	.0636	4.0	5.40	5.25
28.	23.7	10.9	5.2	.2194	3.3	.3028	4.7	.4312	1.7	.0717	4.2	4.30	4.60
29.	24.1	12.0	5.3	.2199	4.1	.3417	5.0	.4167	1.8	.0747	4.1	3.80	3.20
30.	22.6	11.6	4.5	.1991	3.3	.2845	4.5	.3879	1.1	.0487	3.8	3.26	2.70
31.	21.9	11.1	4.8	.2192	3.1	.2793	4.9	.4414	1.5	.06853.6		4.15	4.60
32.	24.1	11.3	4.5	.1867	3.2	.2832	5.4	.4779	2.4	.0996	4.0	3.50	4.00
33.	22.6	12.1	5.1	.2257	3.1	.2562	5.2	.4298	1.6	.0708	3.9	3.70	3.40
34.	23.4	10.4	4.6	.1966	3.2	.3077	4.9	.4712	2.0	.0855	4.0	4.45	3.90
35.	23.0	11.1	4.7	.2043	3.5	.3153	4.6	.4144	2.2	.0956	3.4	3.70	3.40
36.	22.2	11.0	4.5	.2027	2.8	.2545	4.7	.4273	1.2	.0540	3.9	5.15	5.60
37.	24.1	12.4	4.4	.1826	3.2	.2581	4.6	.3710	1.7	.0705	5.0	3.50	2.65
38.	23.6	12.1	5.1	.2161	3.8	.3140	4.8	.3967	2.0	.0847	4.5	4.10	3.95

EXPERIMENT IV (continued)

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]	PML[8]	MW[9]	PMW[10]	CL[11]	m $\bar{X}$[12]	f $\bar{X}$[13]
39.	23.8	11.3	4.4	.1849	3.6	.3186	5.5	.4867	1.4	.0588	4.5	3.90	3.30
40.	23.9	11.6	4.6	.1925	3.7	.3190	4.8	.4138	1.9	.0795	4.1	4.30	4.25
41.	22.2	11.3	4.7	.2117	3.3	.2920	4.5	.3982	1.3	.0586	4.0	4.55	3.95
42.	23.2	11.9	4.8	.2069	3.1	.2605	4.7	.3950	1.7	.0733	3.1	4.70	3.95
43.	23.8	11.2	5.2	.2185	3.3	.2946	4.5	.4018	1.9	.0798	4.7	5.75	5.75
44.	23.1	11.6	5.1	.2208	3.1	.2672	5.0	.4310	1.2	.0519	3.9	4.30	3.60
45.	21.6	10.9	5.0	.2315	3.3	.3028	4.7	.4312	1.7	.0787	3.1	3.50	2.60
46.	23.3	11.2	5.0	.2146	3.3	.2946	4.3	.3839	1.6	.0687	4.8	5.40	4.83
47.	21.9	10.6	4.9	.2237	2.9	.2736	4.4	.4151	1.5	.0685	4.0	3.10	2.30
48.	23.8	11.6	4.5	.1891	3.8	.3276	4.7	.4052	2.2	.0924	3.8	4.15	3.35
49.	23.3	11.9	4.9	.2103	3.2	.2689	4.2	.3529	1.8	.0772	3.9	4.35	3.65
50.	23.8	12.3	4.9	.2059	3.1	.2520	5.1	.4146	1.7	.0714	4.3	5.10	4.85
51.	23.7	11.7	4.8	.2025	3.6	.3077	4.6	.3932	2.1	.0886	4.5	4.00	4.35
52.	23.6	12.0	5.1	.2161	3.0	.2500	4.4	.3667	1.3	.0551	4.3	3.55	3.55
53.	24.2	12.6	5.2	.2149	3.6	.2857	5.3	.4206	1.6	.0661	4.2	4.05	4.25
54.	23.5	12.0	4.2	.1787	3.7	.3083	5.2	.4333	2.0	.0851	4.1	5.05	5.25
55.	24.9	12.5	5.2	.2088	3.1	.2480	5.1	.4080	1.7	.0683	4.5	3.80	4.20
56.	22.7	11.4	4.2	.1850	3.3	.2065	4.6	.4035	1.9	.0837	3.0	6.10	5.95
57.	23.7	11.9	5.0	.2110	3.4	.2857	5.3	.4454	1.9	.0802	4.3	4.00	4.50
58.	21.9	10.6	4.6	.2100	3.1	.2924	4.6	.4340	2.0	.0913	3.5	4.79	5.40
59.	23.0	12.5	4.7	.2046	3.4	.2720	4.3	.3440	2.2	.0956	4.7	5.75	6.55
60.	23.6	12.3	4.5	.1907	3.6	.2927	5.0	.4065	1.7	.0720	3.6	3.90	4.25
61.	24.0	11.9	4.6	.1917	3.3	.2773	4.5	.3782	1.7	.0708	4.9	5.25	4.60
62.	23.5	13.4	4.7	.2000	3.6	.2686	4.5	.3358	1.9	.0808	4.4	3.50	2.90
63.	24.1	13.0	4.8	.1992	3.0	.2308	4.9	.3769	1.8	.0747	4.0	6.10	5.85
64.	23.1	12.6	4.2	.1818	3.1	.2460	4.7	.3730	1.6	.0693	4.1	4.95	4.20
65.	22.0	11.0	4.5	.2045	3.4	.3091	4.2	.3818	1.5	.0682	4.2	5.05	5.25
66.	22.2	12.0	4.0	.1802	3.4	.2833	4.4	.3667	1.7	.0766	3.3	4.80	4.30
67.	22.9	11.2	4.7	.2052	3.4	.3036	4.5	.4018	1.7	.0742	4.0	5.05	5.60
68.	21.7	12.1	4.7	.2166	3.4	.2820	5.1	.4215	1.6	.0737	3.1	5.30	6.15
69.	23.3	10.9	4.8	.2060	3.4	.3119	4.2	.3853	1.6	.0687	4.8	5.90	6.00
70.	23.4	12.4	5.7	.2436	3.6	.2903	4.9	.3952	1.5	.0641	4.5	4.80	4.40
71.	24.6	12.9	4.2	.1707	3.4	.2636	4.8	.3721	1.1	.0447	3.6	2.55	2.55
72.	23.3	10.9	4.7	.2017	3.2	.2936	5.2	.4771	1.9	.0818	4.2	4.84	5.35
73.	24.8	10.8	4.5	.1814	3.6	.3333	4.3	.3981	2.5	.1008	4.1	5.50	5.95
74.	21.6	11.0	4.7	.2176	3.1	.2818	4.1	.3727	1.9	.0880	4.8	2.75	2.55
75.	21.5	11.4	4.7	.2186	3.9	.3421	4.6	.4035	2.0	.0930	3.7	1.75	1.75
76.	22.5	11.1	5.1	.2267	3.3	.2973	5.0	.4504	1.9	.0844	4.5	3.85	4.55
77.	23.0	12.5	4.2	.1826	3.2	.2560	4.8	.3840	1.8	.0783	3.5	5.10	4.90
78.	24.5	13.5	5.2	.2122	3.5	.2592	5.0	.3704	1.2	.0490	4.4	4.80	4.75
79.	24.2	12.0	4.5	.1860	3.3	.2750	4.6	.3833	2.5	.1033	3.5	2.25	2.55
80.	22.5	10.9	5.0	.2222	2.8	.2569	4.6	.4220	1.6	.0711	4.0	4.75	5.25
81.	23.0	11.6	4.9	.2130	3.5	.3017	4.0	.3448	1.6	.0696	1.3	4.50	3.95
82.	24.5	12.5	5.2	.2122	3.2	.2560	5.0	.4000	1.7	.0694	3.4	3.90	3.42
83.	22.5	12.0	5.2	.2311	3.5	.2917	5.2	.4333	2.0	.0889	3.6	3.65	3.42

EXPERIMENT IV (continued)

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]	PML[8]	MW[9]	PMW[10]	CL[11]	m $\bar{X}$[12]	f $\bar{X}$[13]
84.	23.2	11.9	4.6	.1983	3.5	.2941	5.0	.4202	1.7	.0733	4.1	4.80	4.95
85.	22.5	11.5	4.7	.2089	3.2	.2783	4.6	.4000	1.4	.0622	3.7	5.55	5.35
86.	23.8	11.9	5.1	.2143	3.3	.2773	4.9	.4118	1.4	.0588	3.9	4.70	4.63
87.	23.1	12.5	4.8	.2078	3.6	.2880	4.5	.3600	1.3	.0563	3.6	6.00	6.40
88.	23.1	12.8	4.8	.2078	3.2	.2500	4.4	.3438	1.7	.0736	4.0	4.85	4.70
89.	23.9	11.8	5.3	.2218	3.8	.3220	5.4	.4576	1.5	.0628	4.0	4.40	4.15
90.	22.7	12.6	4.8	.2114	3.3	.2619	4.9	.3889	2.0	.0881	3.3	2.00	2.05
91.	23.1	12.0	4.9	.2121	3.5	.2917	4.2	.3500	1.6	.0693	4.2	4.45	5.00
92.	23.1	11.4	5.4	.2338	3.1	.2719	4.4	.3860	2.2	.0952	4.1	2.50	2.58
93.	23.1	11.2	4.5	.1948	3.4	.3036	4.6	.4107	1.5	.0649	4.5	4.40	4.65
94.	22.7	11.7	4.3	.1894	3.4	.2906	4.5	.3846	1.6	.0705	3.2	3.75	3.95
95.	22.4	12.5	5.1	.2277	3.3	.2640	4.6	.3680	1.4	.0625	4.2	3.80	4.15
96.	24.5	11.7	5.2	.2122	3.4	.2906	4.8	.4102	2.3	.0939	3.8	4.05	4.25
97.	22.8	11.8	4.7	.2061	3.5	.2966	5.3	.4492	1.7	.0746	4.0	5.25	5.40
98.	23.4	11.4	3.8	.1624	3.3	.2895	4.9	.4298	1.5	.0641	3.9	5.10	5.60
99.	23.2	12.3	4.2	.1810	3.4	.2764	5.4	.4390	2.1	.0905	3.0	4.15	3.80
100.	22.4	12.1	4.8	.2143	4.0	.3306	5.3	.4380	2.2	.0982	3.6	4.25	3.85

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[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12]$\bar{X}$ Male Rating [13]$\bar{X}$ Female Rating

EXPERIMENT IV

MEASUREMENTS OF FEMALES' FACES AND MEAN ATTRACTIVENESS

SUBJECTS RATINGS OF THE PHOTOGRAPHS OF THOSE

FEMALES BY MALE AND FEMALE

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]	PML[8]	MW[9]	PMW[10]	CL[11]	m $\bar{X}$[12]	f $\bar{X}$[13]
1.	21.0	11.0	4.1	.1952	3.0	.2727	4.0	.3636	1.1	.0524	2.9	5.68	6.55
2.	20.7	11.1	4.3	.2077	3.3	.2973	4.6	.4144	1.1	.0531	3.4	3.30	4.05
3.	21.9	11.1	5.0	.2283	3.0	.2703	4.3	.3874	2.0	.0913	3.6	3.90	4.45
4.	23.0	12.9	4.6	.2000	2.9	.2248	4.4	.3411	1.6	.0696	3.5	6.30	6.30
5.	20.4	10.3	4.7	.2304	2.9	.2816	3.5	.3398	1.5	.0735	4.1	6.05	6.65
6.	22.0	11.5	4.6	.2091	3.1	.2696	4.1	.3565	1.6	.0727	3.8	6.80	6.80
7.	21.1	12.5	4.6	.2180	3.2	.2560	4.8	.3840	1.7	.0806	4.0	3.80	4.90
8.	21.4	12.3	3.9	.1822	3.3	.2683	4.8	.3902	1.5	.0701	3.2	5.95	6.40
9.	21.4	11.5	5.1	.2383	3.1	.2696	4.7	.4087	0.7	.0327	4.0	4.05	4.00
10.	19.9	11.4	4.8	.2412	2.9	.2544	4.0	.3509	1.4	.0704	3.0	5.30	5.80
11.	20.6	12.2	4.2	.2039	3.1	.2541	4.8	.3934	1.7	.0825	3.4	5.20	5.10
12.	22.0	11.4	4.1	.1864	3.1	.2719	5.1	.4474	1.6	.0727	3.9	3.70	4.10
13.	20.4	11.9	4.0	.1961	2.9	.2437	4.2	.3529	1.4	.0686	3.5	4.15	3.90
14.	21.5	11.6	4.1	.1907	3.3	.2845	4.3	.3707	1.8	.0837	4.0	5.15	4.95
15.	21.6	11.7	4.6	.2130	3.3	.2820	4.2	.3590	1.6	.0741	3.0	4.65	4.35
16.	21.5	11.5	4.1	.1907	3.2	.2783	4.5	.3913	1.5	.0698	3.9	3.65	3.70
17.	20.3	11.7	4.2	.2069	3.0	.2564	4.4	.3761	1.5	.0739	4.0	3.95	4.05
18.	21.2	11.0	4.6	.2170	3.0	.2727	4.3	.3909	2.1	.0990	2.9	4.45	4.75
19.	19.7	10.9	4.6	.2335	2.8	.2569	4.1	.3761	2.1	.1066	3.5	6.45	6.70
20.	22.3	11.1	4.4	.1973	3.4	.3063	4.4	.3964	1.4	.0628	4.0	5.80	5.47
21.	21.7	11.5	4.8	.2212	3.2	.2783	4.3	.3739	1.7	.0783	4.0	4.70	5.35
22.	20.9	10.5	4.1	.1962	2.5	.2381	4.1	.3905	1.1	.0526	4.1	4.10	4.85
23.	21.7	11.6	4.3	.9820	2.8	.2414	3.9	.3362	1.5	.0691	3.6	4.60	5.20
24.	22.9	12.0	4.5	.1965	3.4	.2833	5.1	.4250	1.6	.0699	3.1	3.65	3.95
25.	22.3	12.5	4.6	.2063	3.1	.2480	4.5	.3600	1.8	.0807	4.1	4.75	5.35
26.	21.8	10.4	4.7	.2156	2.9	.2788	4.2	.4038	1.8	.0826	3.3	5.15	5.95
27.	21.8	11.2	4.1	.1881	3.0	.2678	4.4	.3928	2.0	.0917	3.5	6.105	6.45
28.	21.4	12.0	4.3	.2009	2.6	.2167	4.5	.3750	1.7	.0794	3.8	6.05	6.75
29.	19.2	12.0	4.3	.2009	2.6	.2167	4.5	.3750	1.7	.0794	3.8	6.05	6.75
30.	22.2	12.2	4.1	.1847	3.0	.2459	4.9	.4016	1.8	.0811	3.9	3.84	4.25
31.	22.2	10.4	4.5	.2027	2.7	.2596	4.5	.4327	1.7	.0766	3.2	4.55	4.50
32.	21.0	10.9	4.3	.2048	2.6	.2385	3.4	.3119	1.9	.0905	3.9	5.45	5.00
33.	20.3	10.5	4.4	.2167	3.0	.2857	4.6	.4381	1.2	.0591	3.0	3.80	3.50
34.	22.0	13.2	4.2	.1909	3.1	.2348	4.5	.3409	2.0	.0909	4.0	3.60	3.30
35.	22.5	11.2	3.9	.1733	2.2	.1964	4.3	.3839	1.3	.0578	4.0	5.25	4.68
36.	22.5	11.4	4.9	.2178	3.1	.2719	4.2	.3684	1.8	.0800	4.6	4.50	4.10
37.	21.8	10.5	4.4	.2018	3.0	.2857	3.5	.3333	1.8	.0826	3.0	4.25	3.70
38.	21.7	10.0	4.0	.1843	3.6	.3600	4.4	.4400	2.0	.0922	3.8	4.50	4.10

EXPERIMENT IV (continued)

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]	PML[8]	MW[9]	PMW[10]	CL[11]	m $\bar{X}$[12]	f $\bar{X}$[13]
39.	21.7	11.1	5.1	.2350	2.8	.2522	4.0	.3604	1.4	.0645	3.4	5.05	4.50
40.	21.0	12.2	4.3	.2048	2.8	.2295	4.3	.3526	1.7	.0809	3.3	4.75	4.75
41.	22.0	11.7	5.0	.2273	2.9	.2479	4.1	.3504	1.7	.0773	3.3	4.85	5.70
42.	21.7	11.3	4.3	.1982	3.0	.2655	4.7	.4159	1.9	.0876	3.8	5.10	5.20
43.	22.0	10.9	4.4	.2000	2.6	.2385	3.5	.3211	1.8	.0818	3.8	4.60	3.90
44.	22.0	10.8	4.2	.1909	2.9	.2685	4.3	.3981	1.5	.0682	3.3	6.05	5.75
45.	21.5	10.5	4.5	.2093	3.1	.2952	4.4	.4190	1.5	.0698	3.3	5.30	5.30
46.	21.2	13.1	4.5	.2123	3.2	.2443	4.6	.3511	1.8	.0849	3.3	3.15	3.80
47.	19.5	11.2	4.0	.2051	3.1	.2768	4.0	.3571	0.9	.0461	3.0	5.05	4.60
48.	20.1	11.4	3.5	.1742	2.8	.2456	4.6	.4035	1.5	.0746	4.1	2.35	4.60
49.	20.5	11.7	4.1	.2000	3.2	.2735	4.6	.3932	1.7	.0829	4.0	3.25	2.94
50.	20.4	10.7	4.7	.2304	2.8	.2617	4.2	.3925	1.0	.0490	3.2	5.10	5.50
51.	20.5	11.6	4.6	.2244	2.9	.2500	4.7	.4052	1.5	.0732	3.3	4.40	4.15
52.	21.3	11.1	5.0	.2347	3.1	.2793	4.0	.3604	1.6	.0751	3.3	5.65	5.20
53.	22.0	11.7	5.2	.2367	3.0	.2564	4.7	.4017	1.6	.0727	3.6	3.35	3.25
54.	22.2	11.2	4.5	.2027	3.0	.2678	4.6	.4107	1.0	.0450	3.7	3.45	3.35
55.	21.7	11.2	4.3	.1982	2.9	.2589	4.4	.3928	1.8	.0829	3.5	4.65	4.95
56.	21.0	10.4	5.0	.2381	3.3	.3173	4.3	.4135	1.3	.0619	2.6	4.15	4.10
57.	21.4	11.2	4.4	.2056	2.9	.2589	3.8	.3393	1.5	.0701	3.7	3.65	3.50
58.	20.2	11.1	5.0	.2475	2.9	.2613	4.4	.3964	1.3	.0644	2.9	2.55	2.15
59.	20.6	11.4	4.0	.1942	3.0	.2632	4.1	.3596	1.9	.0922	3.3	3.70	3.50
60.	20.7	10.6	4.4	.2126	3.3	.3113	4.5	.4245	1.1	.0531	3.6	5.10	5.45
61.	22.4	11.6	4.4	.1964	2.7	.2328	4.1	.3534	1.3	.0580	3.0	5.75	5.85
62.	20.9	11.1	4.3	.2057	2.7	.2432	4.4	.3964	1.1	.0526	3.8	5.60	5.80
63.	22.2	12.6	5.0	.2252	2.7	.2143	4.1	.3254	2.0	.0901	4.0	4.40	4.50
64.	21.5	11.4	4.4	.2046	2.9	.2544	4.1	.3596	1.5	.0698	3.8	5.35	5.65
65.	20.5	11.4	4.6	.2244	2.9	.2544	3.8	.3333	1.6	.0780	3.3	6.75	7.20
66.	22.1	11.5	4.4	.1991	2.7	.2348	4.1	.3565	1.4	.0633	3.5	4.50	4.75
67.	21.5	11.0	4.7	.2186	2.9	.2636	4.5	.4091	1.6	.0744	3.8	4.95	5.00
68.	21.5	11.1	4.1	.1907	3.0	.2703	4.1	.3694	1.4	.0651	3.1	3.70	3.85
69.	21.3	12.8	4.3	.2019	3.2	.2500	4.3	.3350	1.2	.0563	3.8	2.80	2.95
70.	21.0	12.5	4.6	.2190	3.1	.2480	4.6	.3680	1.7	.0810	3.6	4.05	4.55
71.	21.7	11.5	4.7	.2166	3.3	.2870	4.0	.3478	1.2	.0553	3.2	4.40	3.95
72.	20.1	11.4	4.3	.2139	3.5	.3070	4.9	.4298	1.2	.0597	3.3	6.45	6.55
73.	19.4	10.1	4.0	.2062	3.0	.2970	4.4	.4356	1.4	.0722	3.3	6.45	6.55
74.	21.0	11.1	3.8	.1810	3.0	.2703	4.6	.4144	1.6	.0762	3.3	6.05	5.95
75.	21.1	12.7	4.4	.2085	3.1	.2441	4.9	.3858	1.9	.0900	3.4	6.05	6.20
76.	22.1	11.0	4.3	.1946	3.0	.2727	4.8	.4364	2.0	.0905	3.5	3.70	3.10
77.	21.9	11.0	4.7	.2146	3.0	.2727	4.8	.4364	1.5	.0685	3.3	4.75	4.10
78.	21.5	10.9	4.3	.2000	2.9	.2660	4.1	.3761	1.9	.0884	3.2	4.40	4.40
79.	21.1	11.6	4.5	.2133	3.0	.2586	3.9	.3362	1.3	.0616	3.5	5.95	5.65
80.	22.5	11.9	4.0	.1778	3.1	.2605	4.3	.3613	1.8	.0800	3.5	6.95	6.30
81.	22.2	11.6	4.1	.1847	3.4	.2931	4.5	.3879	1.7	.0766	3.1	4.50	4.30
82.	21.6	11.0	4.5	.2083	2.8	.2545	4.5	.4091	1.1	.0509	3.7	3.75	4.05
83.	21.7	10.7	5.3	.2442	3.0	.2804	4.4	.4112	1.5	.0691	3.6	3.55	3.40

EXPERIMENT IV (continued)

	FL[1]	FW[2]	NL[3]	PNL[4]	NW[5]	PNW[6]	ML[7]	PML[8]	MW[9]	PMW[10]	CL[11]	m $\bar{X}$[12]	f $\bar{X}$[13]
84.	20.5	10.9	4.3	.2098	2.9	.2660	4.3	.3945	1.6	.0780	3.5	5.05	5.10
85.	22.5	12.0	4.1	.1822	3.1	.2583	4.6	.3833	1.5	.0667	3.8	3.50	4.70
86.	21.3	11.0	4.4	.2066	2.9	.2636	3.7	.3364	1.7	.0798	3.8	5.50	5.90
87.	22.5	12.1	4.4	.1956	2.8	.2314	4.5	.3719	2.0	.0889	3.6	5.25	5.50
88.	21.5	10.9	4.0	.1860	3.2	.2936	4.0	.3670	1.6	.0744	3.9	5.95	6.10
89.	21.6	10.9	4.3	.1991	2.9	.2660	4.0	.3670	1.9	.0880	3.9	5.20	5.15
90.	22.2	11.4	5.3	.2387	2.7	.2368	4.4	.3860	1.2	.0540	3.3	6.30	6.60
91.	22.6	12.5	4.5	.1991	2.8	.2240	4.6	.3680	1.7	.0752	4.0	3.85	4.25
92.	21.0	10.7	4.5	.2143	2.7	.2523	3.9	.3645	1.7	.0810	3.5	6.55	6.20
93.	19.7	11.1	3.9	.1980	2.7	.2432	4.0	.3604	1.4	.0711	3.6	6.90	6.75
94.	22.5	11.0	4.5	.2000	3.2	.2909	4.3	.3909	1.7	.0756	4.2	5.65	5.35
95.	21.5	11.5	4.1	.1907	3.1	.2696	4.8	.4174	1.8	.0837	3.6	5.05	4.80
96.	21.0	11.0	4.0	.1905	3.1	.2818	4.1	.3727	1.8	.0857	3.3	6.60	6.10
97.	21.6	11.2	4.9	.2268	3.0	.2678	4.5	.4018	1.9	.0880	4.0	4.10	4.35
98.	20.8	10.6	4.4	.2115	2.9	.2736	4.3	.4057	1.5	.0721	3.0	5.85	6.05
99.	20.6	11.3	4.2	.2039	3.3	.2920	4.2	.3717	1.4	.0680	4.1	3.95	4.32
100.	21.9	11.8	4.6	.2100	2.8	.2373	4.8	.4068	1.5	.0685	3.8	5.90	6.15

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[1]Face Length [2]Face Width [3]Nose Length [4]Proportional Nose Length [5]Nose Width [6]Proportional Nose Width [7]Mouth Length [8]Proportional Mouth Length [9]Mouth Width [10]Proportional Mouth Width [11]Chin Length [12]$\bar{X}$ Male Rating [13]$\bar{X}$ Female Rating