

Fat, Four-Eyed, and Female:

Stereotypes of Obesity, Glasses, and Gender¹

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In a between-subjects design, 46 male and 101 female Australian university students rated a target person described as male or female, overweight or average weight, and wearing glasses or not, on twelve 7-point rating scales. As predicted, a negative stereotype of the overweight person and a complex one of the person with glasses were found. However, there was no significant effect of sex of target except on the ratings of masculine and feminine and no interaction of sex of target with either the glasses or obesity variables. Nor did sex of subject influence the ratings. The results suggest that, although stereotypes of obesity and glasses do exist, they may be as severe for men as for women.

A number of authors have commented upon the extremely negative views which people in most Western societies today hold toward those who are obese (Allon, 1975; Bruch, 1973; Cahnman, 1968; DeJong, 1980; Maddox, Back, & Liederman, 1968; Mayer, 1968; Monello & Mayer, 1963; Rodin, 1981; Stunkard, 1976, 1980). Adults and children from a number of cultures have been found to consistently rank photographs or drawings of obese people as among the most disliked of the physically handicapped and to attribute negative characteristics to people with endomorphic builds (Goodman, Dornbusch, Richardson, & Hastorf, 1963; Larkin & Pines, 1979; Lerner, 1969, 1973; Lerner, Iawawki, & Chihara, 1976; Lerner & Korn, 1972; Matthews & Westie, 1966; Richardson, Goodman, Hastorf, & Dornbusch, 1961; Staffieri, 1967; Worsley, 1981; Harris, Note 1; Harris & Smith, Note 2). However, although prejudice against both obese males and obese females has been found, it was suggested that obese females may be the victims of even more severe discrimination and

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stereotyping than that directed against obese men (Dwyer & Mayer, 1975; Dyrenforth, Wooley, & Wooley, 1980; Orbach, 1978; Wooley & Wooley, 1979; Wooley, Wooley, & Dyrenforth, 1979), in spite of or perhaps because of the fact that obesity is more common in females (Beller, 1977; Kannel & Gordon, 1979; Sims, 1979; Stunkard, 1980). As the experimental evidence concerning the stereotype of the fat female vs. the fat male is equivocal (Harris, Note 1; Harris & Smith, Note 2), one purpose of the present study was to see whether or not obesity would indeed lead to more negative views of a female than of a male.

We predicted that obese persons would be rated more negatively on a number of dimensions than persons of average weight, with the exception being "outgoing," as there is some evidence (Hällström & Noppa, 1981) that obese women are more sociable and extraverted than those of normal weight. Specifically, we expected the overweight target person to be rated as less active, intelligent, hardworking, attractive, popular, successful, athletic, and appropriately sex typed (i.e., to be seen as less feminine if a female and less masculine if a male) but as more outgoing than a target person of average weight.

Another aspect of a person's appearance which has been shown to be associated with stereotyping is the presence or absence of glasses. Like obesity, the wearing of glasses has been shown to be associated with lower ratings of attractiveness (Terry & Kroger, 1976), although glasses have also been found to be associated with perceptions of the positive traits of intelligence, dependability, industriousness, and honesty (Argyle & McHenry, 1971; Boshier, 1975; Manz & Lueck, 1968; Thornton, 1943), and with a lower sense of humor (Manz & Lueck, 1968; Thornton, 1943). Indeed the trait of myopia, which requires the wearing of glasses, has been suggested to be causally associated with high intelligence (Karlsson, 1978).

However, the perception of someone wearing glasses may also vary somewhat depending upon the gender of the stimulus person. Elman (1977) found that a male target person wearing glasses was perceived as softer, gentler, more serious, and more of a follower, all feminine traits (Anderson, 1975; Bem, 1974; Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Williams & Bennett, 1975; Williams, Bennett, & Best, 1975; Williams, Giles, Edwards, Best, & Davis, 1977), than he was when not wearing glasses; on the other hand, Ruth and Richards (1974) imply in their title that wearing glasses would lead to a decrease in perceived femininity for women. Thus, another purpose of the present study was to see whether or not the stereotypes of a woman with glasses and a man with glasses would differ significantly, particularly with respect to perceived femininity and masculinity. We also expected differences in activity and athleticism, predicting that the figure with glasses would be lower on those variables, as glasses are often a hindrance to athletic or highly active behaviors. Specifically, people wearing glasses were expected to be seen as more intelligent, hardworking, and successful but less active, outgoing,

attractive, popular, athletic, and persons without glasses.

A final purpose of this study sex role stereotypes were held b in 1981. Although there is indeed Australians in the last decade (A Bernard, 1979; Cunningham & A 1977b, 1978a, 1978b, 1978c; Ho Penman, 1975; Rosenthal & Ch Antill, & Cunningham, 1978; San Stolk & Brotherton, 1981; Wink amount of sex stereotyping is d & Rosenthal, 1980; Penman, 19 be across the world. As the stu subject reading about only one half and female for half, it wa and females which were found that sex stereotypes were being as to whether or not such ster male stereotype as being intelli; reserved, with the female stereo also expected to be rated as more

Subjects and Experimenters

The subjects were 46 male year psychology class, plus an gender. They ranged in age from room instructors served as the ex

Instrument

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persons without glasses.

A final purpose of this study was to see the extent to which traditional
sex role stereotypes were held by a sample of Australian university students
in 1981. Although there is indeed evidence of some sex role stereotyping among
Australians in the last decade (Anderson, 1975; Antill & Cunningham, 1980;
Bernard, 1979; Cunningham & Antill, 1980; Drinkwater, 1979; Feather, 1977a,
1977b, 1978a, 1978b, 1978c; Ho & Zemaitis, 1980; Moore & Rosenthal, 1980;
Penman, 1975; Rosenthal & Chapman, 1980; Rowland, 1977, 1980; Russell,
Antill, & Cunningham, 1978; Sampson, 1979; Stanley, Boots, & Johnson, 1975;
Stolk & Brotherton, 1981; Winkler, 1976), there are also suggestions that the
amount of sex stereotyping is decreasing in Australia (Feather, 1977b; Moore
& Rosenthal, 1980; Penman, 1975; Rowland, 1977, 1980), as indeed it may
be across the world. As the study used a between-subjects design, with each
subject reading about only one target person, who was identified as male for
half and female for half, it was felt that any differences in ratings of males
and females which were found would not be affected by subjects' awareness
that sex stereotypes were being studied. Although no prediction was made
as to whether or not such stereotyping would be found, we identified the
male stereotype as being intelligent, successful, assertive, active, athletic, and
reserved, with the female stereotype being the reverse. Of course, males were
also expected to be rated as more masculine and less feminine than females.

Method

Subjects and Experimenters

The subjects were 46 male and 101 female students enrolled in a second
year psychology class, plus an additional 7 subjects who did not record their
gender. They ranged in age from 19 to 55 years, $M = 22.5$. Their regular class-
room instructors served as the experimenters.

Instrument

The instrument was a single page questionnaire entitled "Person Perception
Study" headed by the following paragraph:

We are interested in finding out how much people can tell about another person
simply by reading a description of that person. The description below is that of
Chris Martin a (man) (woman) in (his) (her) late twenties. After reading this
description, please circle the numbers on the rating scales below which you think
are most likely to describe Chris Martin. Of course most of your judgments will
not be completely accurate, but we want to see how close people can come to a
valid description from such relatively limited information.

to differentiate people with and without glasses by Thornton (1943) and Manz and Lueck (1968).

"Unintelligent-intelligent" was included primarily because of its association with the wearing of glasses (Argyle & McHenry, 1971; Boshier, 1975; Karlsson, 1978; Manz & Lueck, 1968; Thornton, 1943) although it was also expected to be related to sex stereotyping as well, through its association with competence (Broverman et al., 1972). Similarly, inclusion of "unattractive-attractive" was warranted by Terry and Kroger's (1976) evidence that wearers of glasses are rated low on attractiveness and by the research on attitudes toward the obese (e.g., Allon, 1975; Bruch, 1973; Cahnman, 1968; DeJong, 1980; Dwyer & Mayer, 1975; Dyrenforth et al., 1980; Mayer, 1968; Monello & Mayer, 1963; Orbach, 1978; Stunkard, 1976, 1980; Wooley & Wooley, 1979). "Attractive" appears as well as a feminine characteristic in the Williams et al. (1977) study.

"Hardworking-lazy" was included because of its relevance to the stereotypes of glasses wearers as "industrious" (Manz & Lueck, 1968) and to prevailing conceptions of the obese (see above references). Relevance of this item to sex role stereotypes is much less clear; "lazy" appears as a male characteristic in the Williams et al. (1977) study but on no other sex role scale, and appears inconsistent with many other aspects of the male stereotype discussed earlier. "Popular-unpopular" was included because of the strong evidence that overweight persons are in fact disliked (see above references) and "unhappy-happy" because of statements that the obese are unhappy about their obesity (e.g., Bruch, 1973; Cahnman, 1968; Mayer, 1968; Orbach, 1978; Stunkard, 1976).

At the end of the questionnaire, subjects were asked to indicate if they were male or female, and read a statement that the study would be discussed in the next lecture to the entire class.

Procedure

Subjects were randomly assigned to conditions by randomly ordered booklets and tested in their regular tutorial groups of about 20 students each. There were 16 conditions, including the sex of the subject, forming a 2 (obesity) $\times$ 2 (glasses) $\times$ 2 (sex of target) $\times$ 2 (sex of subject) design. The sex composition of the treatment groups did not vary from that expected by chance, $\chi^2(7) = 7.13, p > .05$, indicating that the random assignment was successful.

Results

A 2 (sex of target) $\times$ 2 (average weight vs. overweight) $\times$ 2 (glasses not mentioned vs. target wears glasses) $\times$ 2 (sex of subject) multivariate analysis of variance was conducted with an outcome vector consisting of 11 measures: the 10 adjective pairs other than "masculine" and "feminine," together with

SEXAPP, defined as rating on "masculine" minus rating on "feminine" for male targets and the reverse for female targets. Neither the main effect of sex of subject nor any interaction involving it was significant at the .05 level in this analysis. Moreover, of the 88 univariate tests of effect involving sex of subject, only 3 (its main effect and its interactions with sex of target and mention of glasses on "popular" and the 4-way interaction on SEXAPP) reached statistical significance at the .05 level. All subsequent analyses, therefore, ignored sex of subject as a factor. This had the advantage of permitting inclusion in these analyses of the seven subjects who failed to report their gender on the questionnaire, thereby raising the N to 154 complete observation vectors.

In addition to a $2 \times 2 \times 2$ multivariate analysis of variance (MANOVA) on the 11 dependent measures specified above, a $2 \times 2 \times 2$ univariate analysis of variance (ANOVA) was conducted on (a) each of the 12 adjective pairs on the questionnaire, (b) SEXAPP, (c) MASC = rating on "masculine" minus rating on "feminine", (d) a simplified version of the discriminant function for the main effect of each factor, i.e., that linear combination of the 11 dependent measures which maximized the F for that effect, (e) an overall favorability rating (HALO), and (f) three *a priori* linear combinations of the dependent measures, each representing the average of the ratings on the scales on which previous research suggested an obese person, a male person, or a person wearing glasses should receive high ratings. As only these last three combinations represented truly *a priori* measures, an individual alpha of .03 ($F(1,146) = 4.817$) was set for each of these analyses, while an alpha of .01 was adopted for multivariate effects. Univariate F s on single dependent variables or on simplified discriminant functions were considered statistically significant on a family-wise basis if they exceeded the critical value for a univariate F on the actual discriminant function, namely $(11(146)/136)F_{.01}(11,133) = 28.176$. This procedure provides a total family-wise error rate for all tests involving a given effect of $3(.03) + .01 = .10$.

Applying these criteria, the only statistically significant multivariate effects were the main effects of obesity, $F(11,136) = 15.19$, and glasses, $F(11,136) = 3.35$. Table 1 presents the means for each level, and the corresponding F for each, of the three main effects (including sex of target) on each of the dependent measures.

Our initial interpretation of the linear combination of measures which maximized the obesity main effect (i.e., the obesity discriminant function) was essentially the average of "active," "happy," and "attractive"; the overweight stimuli had a mean rating of 3.24 on this simplified discriminant function, as compared to 4.61 for average-weight stimuli, univariate $F = 124.911$ as compared to 179.38 for the actual discriminant function. However, dropping slightly our criterion for including a variable in the simplified discriminant function adds "popular" and "outgoing" in an interesting way. The difference

TABLE 1
MEANS AND F -RATIOS FOR MAIN EFFECTS

Dependent variable (X)	Average weight	Overweight	F	No glasses	Wears glasses	F	Target person		
							Male	Female	F
1. (assertive)	3.84	3.62	1.26	3.71	3.75	< 1	3.65	3.81	< 1
2. (active)	4.69	3.08	90.85*	4.05	3.75	2.68	3.69	4.10	6.70
3. (intelligent)	4.86	4.70	< 1	4.67	4.90	2.66	4.66	4.70	1.03
4. (hardworking)	4.51	4.03	9.58	4.17	4.36	2.23	4.15	4.37	2.65
5. (outgoing)	4.38	4.21	< 1	4.64	3.95	14.74	4.77	4.37	1.07

minus rating on "feminine" for gets. Neither the main effect of it was significant at the .05 level riate tests of effect involving sex nteractions with sex of target and y interaction on SEXAPP) reached osequent analyses, therefore, ignor- vantage of permitting inclusion in led to report their gender on the mplete observation vectors.

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3. (intelligent)	4.86	4.70	<1	4.67	4.90	2.66	4.87	4.70
4. (hardworking)	4.51	4.03	9.58	4.17	4.36	2.23	4.15	4.37
5. (outgoing)	4.38	4.21	<1	4.64	3.95	14.24	4.22	4.37
6. (happy)	4.95	4.60	3.50	4.82	4.73	<1	4.83	4.72
7. (attractive)	4.87	3.78	49.73*	4.54	4.11	9.38	4.30	4.35
8. (popular)	4.89	4.60	2.84	4.98	4.51	13.31	4.81	4.69
9. (successful)	4.70	4.48	2.21	4.59	4.60	<1	4.65	4.54
10. (athletic)	4.30	2.73	58.78*	3.62	3.41	<1	3.47	3.55
11. (athletic)	1.75	.93	5.85	1.12	1.58	2.06	1.72	1.00
SEXAPP ^a			15.19*			3.35*		
MULTIVARIATE								
7. (feminine)	3.62	3.51	<1	3.42	3.73	1.78	2.90	4.21
12. (masculine)	3.90	3.88	<1	4.04	3.75	1.79	4.62	3.21
MASC(X12-X7)	.28	.37	<1	.62	.03	2.92	1.72	-1.00
OBESITY ^b	4.24	3.59	57.86*	3.80	3.89	<1	3.84	3.57
GLASSES ^c	2.59	3.19	45.29*	2.82	3.06	10.18*	2.94	2.95
MALENESS ^d	4.17	3.61	58.81*	3.86	3.97	1.24	3.87	3.93
HALO ^e	47.68	40.41	41.22*	45.01	43.75	1.59	44.37	44.39

^aSEXAPP = (X12-X7) if man, (X7-X12) if woman target person.

^bOBESITY STEREOTYPE = (X2+X3+X4-X5+X8+X9+X10+X11+SEXAPP+7)/9.

^cGLASSES STEREOTYPE = (X3+X4+X10-X2-X5-X8-X9-X11-SEXAPP+35)/9.

^dMALE STEREOTYPE = (X1+X2+X3-X5+X10+X11+7)/6.

^eHALO = X1+X2+X3+X4+X5+X6+X8+X9+X10+X11+SEXAPP.

*Statistically significant by family-wise criteria described in text.

In terms of individual descriptors, the overweight target persons were rated as significantly less active, $F = 90.85$, less attractive, $F = 49.73$, and less athletic, $F = 58.78$, than average-weight target persons. The *a priori* prediction for this main effect was that the overweight target persons would be rated as less active, intelligent, hardworking, attractive, popular, successful, athletic, and appropriately sex-typed but more outgoing than average-weight target persons. The sample mean differences were consistent with all of these predictions, with the sole exception that overweight stimuli were rated slightly *less* outgoing than average-weight target persons. Finally, the two groups differed significantly on the *a priori* linear combination implied by these nine predictions, $F = 57.86$.

There was no significant main effect of sex of target person on any single dependent variable, on the *a priori* linear combination, or in terms of the overall multivariate test. Moreover, three of the six components of the *a priori* linear combination yielded sample mean differences *opposite* to prediction. While male targets were seen (as predicted) as more intelligent, more successful, and less outgoing than females (though the largest of these differences was only .17 of a unit on the 7-point scale), they were also seen (opposite to prediction)

None of the interactions between the family-wise criteria described

The results of this study of people would be stereotyped as popular, successful, athletic, and weight (Allon, 1975; Bruch, 1968; Rodin, 1981; Stunkard, Note 1). Indeed the stereotype outgoing, contrary to some evidence rather than less so (Hållström & by the finding that the obese are be expected, given their low rate and athleticism) normally pre- dence to support the widely obesity specifically, would be for men (Dwyer & Mayer, 197 & Wooley, 1979; Wooley et al is so negative that it is not of a person's status.

The fact that sex of subject moderates the effect of stereotyping is frequently found (e.g., Note 2), although Janda, O'Leary, and Johnson (1981) reported unattractive women le-

of any sex of target effects, except for the variables of masculine and feminine, is more surprising, in view of the fact that sex stereotyping has previously been found in Australia (e.g., Anderson, 1975; Bernard, 1979; Feather, 1977a, 1977b, 1978a, 1978b; Moore & Rosenthal, 1980; Penman, 1975; Rosenthal & Chapman, 1980; Sampson, 1979; Stolk & Brotherton, 1981; Winkler, 1976). This lack of stereotyping cannot be due to the subjects' failure to notice the sex of the target person, as they did rate the male and female differently on the variables of masculine and feminine. Nor can it be due to an unwillingness to express negative views on stereotypes, as they were perfectly willing to stereotype the overweight person negatively. The fact that each subject rated only a single person meant that it was unlikely subjects would realize that sex role stereotypes were being evaluated and therefore deliberately choose not to reveal any to the experimenter, even on an anonymous questionnaire. The most probable explanation, it appears to us, is that in this situation subjects simply did not differentiate on the basis of sex in evaluating the target person on most dimensions, which may reflect an actual reduction in sex role stereotyping, at least among Australian college students (Feather, 1977b; Moore & Rosenthal, 1980; Penman, 1975; Rowland, 1977, 1980).

Of course, only longitudinal research can really deal adequately with the question of change. However, the fact that admissions procedures and standards for all Australian universities are very similar makes it unlikely that unusual characteristics of the sample are responsible for the lack of sex role stereotyping. Clearly, research with other populations, and longitudinal research in particular, would be most useful in answering the question of whether or not a true decline in sex role stereotyping is occurring.

Several other suggestions for improving and extending the present research could be made. The present methodology, using a set of person-perception ratings, could be expanded to include target persons both more similar to and more different from the subject with respect to such demographic variables as age. Behavioral measures, such as intent to hire the person or willingness to interact with him or her, could be utilized. Assessment of the subject's own degree of obesity or need for glasses could also be made, although previous research (Lerner & Korn, 1972; Staffieri, 1967; Harris & Smith, Note 2) has suggested that both obese and normal weight persons seem to hold equally negative stereotypes of obesity. However, Terry and Kroger (1976) did find a "slight tendency" for subjects without glasses to rate persons wearing glasses as less attractive than did subjects with glasses. Finally, the populations studied could be expanded to include people whose power to make decisions implies that their stereotyping will have important consequences for others, such as personnel directors (Larkin & Pines, 1979) or directors of admissions to educational institutions (Mayer, 1968).

Although the findings of this study are limited by the methodology and

population employed, the tendency, such as one's weight and appearance, spread implications. The social obese have included discrimination (1973; Cahnman, 1968; DeJong, 1976) perhaps even more severe gender. It may be that, if the sex role stereotyping, this will eventually to stereotype on the basis of obesity and the wearing of glasses.

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variables of masculine and feminine, at sex stereotyping has previously (Feather, 1977a, 1977b; Bernard, 1979; Feather, 1977a, 1980; Penman, 1975; Rosenthal & Brotherton, 1981; Winkler, 1976).

the subjects' failure to notice the difference between the male and female differently on the basis of sex role stereotyping can it be due to an unwillingness as they were perfectly willing to do so. The fact that each subject rated the target as a male or female and therefore deliberately choose to rate on an anonymous questionnaire. The result, to us, is that in this situation the subject's perception of sex in evaluating the target does not reflect an actual reduction in sex role stereotyping of students (Feather, 1977b; Moore, 1977, 1980).

do not really deal adequately with the admissions procedures and standards that makes it unlikely that unusual or the lack of sex role stereotyping. Longitudinal research in particular, on of whether or not a true decline

and extending the present research using a set of person-perception persons both more similar to and different from the target to such demographic variables as to hire the person or willingness to be hired. Assessment of the subject's own sex role stereotyping also be made, although previous research (Feather, 1977; Harris & Smith, Note 2) has shown that persons seem to hold equally strong sex role stereotyping. Berry and Kroger (1976) did find that persons rate persons wearing glasses as more intelligent. Finally, the populations studied do not have the power to make decisions implies consequences for others, such as the consequences for directors of admissions to education.

limited by the methodology and

population employed, the tendency to stereotype people on the basis of appearance, such as one's weight and wearing of glasses, is one which has widespread implications. The social consequences of such stereotyping for the obese have included discrimination and stigmatization (Allon, 1975; Bruch, 1973; Cahnman, 1968; DeJong, 1980; Mayer, 1968; Rodin, 1981; Stunkard, 1976) perhaps even more severe than the effects of stereotyping based on gender. It may be that, if the present results do reflect an actual decline in sex role stereotyping, this will eventually be followed by a decreased tendency to stereotype on the basis of other physical characteristics, including both obesity and the wearing of glasses.

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