

## Actuarial Prejudice Toward Women and Its Implications

SARA B. KIESLER<sup>1</sup>

*University of Kansas*

A process called "actuarial prejudice" is discussed. Actuarial prejudice is a cognitive bias, based on available information about a group from the past and the present, that causes individuals to expect inferior performance from persons who belong to the group. The process, in part, explains why both women and men expect relatively low achievement from women and why women are less likely to achieve than are men. Hypotheses are proposed for future research to test the implications of this process.

At one midwestern university, the last annual banquet for scholarship winners honored five female undergraduates for every nine male undergraduates. The ratio reflected a long-standing policy to award scholarships to males and females in proportion to their registration at the university, even where mean test scores were equal. This article discusses a process that may be helpful in understanding how this situation and others like it affect expectations of achievement for women, evaluations of their performance, and their aspirations and achievements.<sup>2</sup> It will be argued that where women suffer in comparison to men the cause may lie in actuarial prejudice, a cognitive bias based on available information. Several hypotheses are proposed for future research to test the implications of this process.

<sup>1</sup>Requests for reprints should be sent to Sara B. Kiesler, Speech Communication and Human Relations, 3109 Wescoe Hall, University of Kansas, Lawrence, Kansas 66045.

<sup>2</sup>The studies reviewed in this article included those investigating the actual, perceived, and anticipated performance of women in academic and occupational pursuits or in experimental task situations (traditional definitions of achievement, success, and failure were accepted). Developmental studies, although considered, were largely omitted from reference in favor of studies that show how situational variables in adult life affect achievement and its perception. See Stein and Bailey (1973) for a detailed review of the developmental literature. Most of the literature is limited to a consideration of middle-class, white populations, so the foregoing comments should be generalized beyond that group with caution.

## ACTUARIAL PREJUDICE

Men and women are likely to judge a woman's performance to be less worthy than a man's performance even when both are actually equal. For example, in a widely known study by Goldberg (1968), college women were asked to evaluate journal articles in six fields. Male and female authors were systematically assigned to each. Although Goldberg expected articles supposedly written by male authors to be evaluated more highly only in traditionally masculine fields, such as law, the women consistently favored articles written by men, including those published in fields in which women predominate. Goldberg, as well as others who have discussed or replicated the finding (e.g., Bem, 1970), has seemingly interpreted these data as reflecting ideology or prejudice of the classical sort, that is, an "avertive or hostile attitude toward a person who belongs to a group, simply because he belongs to that group" which results from a nonconscious distortion of past experience and is "not reversible when exposed to new knowledge [Allport, 1958]." This type of prejudice implies a desire for social distance as well as negative evaluation.

Another interpretation, which seems to fit experience and the data better but is not necessarily inconsistent with the first, is that a relatively negative judgment of a woman's work rests on a reasonable assessment by the judge of probabilities drawn from known reality. Since the judge knows that most successful persons in real life are male, he or she makes a best guess that an unknown individual is less likely to be a success or perform well if that person is female. This process is much like that which an insurance company undertakes when it sets rates. If women on the average die later than men do, then the best guess for anyone is a longer life if the person is a woman. Consistently applied to women's performance, one would be actuarially prejudiced. Actuarial prejudice, then, refers to a cognitive process whereby the *perceived probability of success of an individual in performing particular behaviors is reduced when the probability of success of the group to which that individual belongs is lower than that of other groups*. Subjective evaluations depend on these probability estimates or expectations.<sup>3</sup>

Assuming the process to exist, one hypothesis that follows is that biased expectations of female performance will occur despite positive feelings for the performer. The proposition that relatively poor expectations for women can be caused by a cognitive bias rather than by hostility or ideology handles an irony obvious in the case of women (and less obvious, but sometimes true, in the case of other groups with minority status)—that love, intimacy, and admiration may coexist with discriminatory behavior and biased evaluations in the same person.

<sup>3</sup>Mischel (in press) has independently offered the same interpretation for the sex-related evaluation data.

At the same time, it is possible that more emotional or irrational forms of bigotry may add to the effect of actuarial prejudice on evaluations.

A clear test of the hypothesis would involve a manipulation of commitment, intimacy, or liking, but has not yet been conducted. Nevertheless, Rubin (1973) did ask seriously dating couples to evaluate their feelings about each other, and in this context asked questions about the other's intelligence, maturity, and good judgment; whether one would vote for the other in an election; and whether one would recommend the other for a responsible job. He found that whereas men and women were equally accorded love, women were less likely to be rated highly on the task-related items. Of course, what is needed next are the appropriate comparison conditions.

One might even find that biased expectations are exaggerated when one is romantically involved with a woman or attracted to her because of appealing feminine qualities. In that case, her femininity is salient, and one has a psychological investment in maintaining her feminine image. A relatively simple test of the salience hypothesis would involve an assessment of the expectations of physically attractive versus unattractive women and men. Although attractive people are likely to be accorded greater liking, attractive women make salient the lower probability of female success, which ought to lower the prediction of success for an attractive woman as compared with an attractive man more than it does the less attractive woman as compared with the less attractive man.

#### THE EFFECTS OF REALITY

For actuarial prejudice to occur, there must exist plausible data from the real world that justify statistical generalization. Clearly, current American reality, and that in other countries, is that women are a success less often than men in all activities to which the word, success, is commonly applied. In business, in the professions, in the arts, in athletics, and in the university, one observes that the most successful persons, on the average, are men. Whatever the causes, be they socialization practices, hormonal differences, *de facto* or purposeful discrimination, role prescriptions, or beliefs, men are the most influential, best paid, and most respected members of the occupations, even of those traditionally associated with femininity such as clothing design, cooking, and interior decoration (e.g., Suter & Miller, 1973). This reality has existed for so many generations that it is almost self-fulfilling. A field in which women predominate is less prestigious than a field in which men predominate (Gross, 1967) and increases in the proportion of women working in an occupation results in its losing prestige (Touhey, 1974).

Given that much orderliness, one's expectations should follow the same lines. One hypothesis, then, is that the expectations, or the perceived probability for success, of both observers and performers will be lower for women than for men,

the greater the difference in success between men and women in the real world. Feldman-Summers and Kiesler (1974) asked college students to rate the expected success of persons entering some professions. A short description of each person was provided, but some students were given a female name, others, a male name. In fields where the greatest success is almost always achieved by men (e.g., surgery), the man was expected to do much better, whereas in fields less obviously male, the difference was less great.

But even in such areas as nursing, elementary school teaching, pediatrics, child psychology, dancing and writing women's biographies, Feldman-Summers and Kiesler found that estimates were somewhat higher for men. Men were also expected to be more successful in performing a contrived experimental task with which subjects had little experience (Deaux & Emswiller, 1974). The author collected pilot data recently which demonstrated lower expectations for women than for men to win such games as monopoly, bridge, and poker. Moreover, estimates of the probable success of a single parent were greater when the parent was a man. In the search for higher expectations for women, only one was found: subjects said women were more likely to win a door prize.<sup>4</sup>

Reality also affects women's expectations for their own performance. Since prior success rates are obvious to everyone, women's expectations for themselves ought to reflect real-world data in the same way that observers' expectations are affected. The experimental literature fully documents that women do expect less success for themselves than men do (Bar-Tal, Frieze & Greenberg, 1973; Battle, 1966; Benton, 1973; Brim, Goslin, Glass, & Goldberg, 1969; Crandall, 1969; Deaux & Emswiller, 1974; Deaux & Farris, 1974; Feather, 1969; Feldman-Summers & Kiesler, 1974; McMahon, 1972; Montanelli & Hill, 1969; Ryckman & Sherman, 1972; Stein, 1971; Strickland, 1971).

Two studies reported no differences in expectations for the self by females as compared with males; in both, the subjects performed unfamiliar tasks (Feather & Simon, 1971; Parsons & Ruble, 1972). Also, labeling a task "feminine," or giving false feedback to the effect that females have performed better than males, in some studies increased the likelihood that females expected success (Deaux & Emswiller, 1974; Hoffman & Maier, 1966; Milton, 1959; Stein, Pohly, & Mueller, 1971); but even so, males tested within the same study generally had higher expectations (e.g., Deaux & Emswiller, 1974).

The data appear to confirm the hypothesis that expectations of success for women are lower than for men, particularly in instances where there is an analog to real life. That is, the greatest differences occur for expectations of occupational success and of success on traditionally masculine academic tasks

<sup>4</sup>The belief that "luck is a lady" may also be based on a post hoc analysis of reality. Probably more women enter contests and, therefore, win more often; but only the latter information is public.

(e.g., mathematics). However, people sometimes estimate lower success for females, and females, lower success for themselves, even on contrived tasks for which there is little analogy to real life. There may be at least two reasons for this bias. First, such estimates may reflect generalizations from the observation that men are successful in many fields, or the wording of the question a person is asked may be important. It is possible that linguistic symbols such as "success", "achievement," and "ambition" are associated with masculinity, so that questions using these words are more likely to be answered with biased expectations than are more specific questions pertaining to performance on the task. To test the hypothesis that success-related concepts are associated with masculinity and result in biased expectations, one would have to experimentally vary measures of expectations as well as tasks. In addition, if generalizations from real life affect expectations, then estimates of consistent success and long-term performance would be more likely to favor men than would expectations for immediate success.

A test of these hypotheses by researchers might clear up previously conflicting reports on expectations for women in unfamiliar or feminine tasks and careers. The issue is also of practical importance to those who advocate linguistic changes such as changes in job titles, job descriptions, and descriptions of performance criteria. For example, to what extent might expectations for a female chairperson differ from those for a female chairman?

#### IMPLICATIONS OF ACTUARIAL PREJUDICE

##### *Evaluations of Women's Performance*

Actuarial prejudice against women is a stereotypical response to an ambiguous situation. Unless there is information that changes the probabilities for an individual, judgments of performance will favor a man. The Goldberg study mentioned earlier supports that hypothesis, as does a study by Miller and McReynolds (1973). Females also rate their own performance as less good (Deaux & Farris, 1974; Smith & Clifton, 1962).

The tendency to evaluate women more poorly than men occurs less frequently in circumstances where salient information about the person's performance suggests that actuarially biased estimates are incorrect. Pheterson, Kiesler, and Goldberg (1971) asked college women to evaluate modern paintings; the artist was identified as either male or female. When the work of art was described as an entry in an art competition, it was judged as more competent and the artist to have greater potential if that artist was male. But when the painting was described as already having won a prize, it was judged equally well whether the artist was male or female. Three studies reporting similar effects have been performed in the field. Walster, Cleary, and Clifford (1970) sent

applications for admission to 240 colleges and universities which factorially varied the sex, race, and ability of the applicant. At low levels of ability, men were accepted significantly more often than were women, but at higher levels of ability both sexes were accepted equally often. Clifford and Looft (1971) varied sex, race, and qualifications when they submitted applications for assistant professorship positions at an American Psychological Association annual convention. Women were less likely to be asked for an interview than were men when the applications had average credentials, but not when they had extremely impressive credentials. Fidell (1970) sent job applications to 155 psychology departments and found that men were more frequently offered associate and full professorships but not assistant professor or instructor level jobs. The latter finding suggests that employers are more willing to take chances at lower levels. One might hypothesize that stronger, more explicit evidence of high performance will be more likely to increase hiring, the greater the importance of the job.

In all of the studies, so far, where evaluations of women were bettered by increases in information about them, that information was relevant to the person's performance on the task in question. Not just any sort of information should be effective, however. On the contrary, increases in information about an individual that are irrelevant to task performance might exaggerate the tendency to predict on the basis of actuarial estimates because the evaluator believes he understands the person. The hypothesis that relevant information indicating a woman's actual success will decrease biased evaluations ought to be tested with reference to the effect of other kinds of information about her.

If actuarial estimates are altered by increasing relevant information available about a person, then they also ought to be altered if there is information that success on a particular task does not conform to the general case of male superiority or if there are changes in the success rate of women in society. In a recent replication of the Goldberg study done in Israel by Mischel (1973), there were no differences in evaluation of male and female authors. Though it is impossible to draw conclusions from such data, the relationship of sex to success in Israel is probably much less strong than in the United States since a woman has recently been head of government and women are also more visible in such masculine fields as the armed forces.

The hypothesis that changes in female success rates will decrease negative evaluations of individual females needs to be explicitly tested, however. How much information will be necessary? Some have suggested that interaction with or observation of a successful female role model ought to alter expectations and evaluations (e.g., Keniston & Keniston, 1964), but the data are spotty. Long interaction with a competent model, such as the mother, seems to have a positive effect on attitudes (e.g., Baruch, 1972), but there is no evidence that the same effect results from interaction with competent female teachers or from

knowing about a successful female. For example, Neath-Gelvin and Kiesler (1975) have recently collected data on the impact of a successful female role model. In this study, college students who were about to take the Law School Aptitude Test for the study were asked to estimate their performance after examining the credentials and scores of another student, who had applied to law school a year earlier. Expectations were apparently based on comparisons with the model rather than imitation, as is seen in Table 1.

Table 1 shows that both males and females expected to do better if the other student had scored poorly on the test ( $F = 3.82$ ;  $df = 1/192$ ;  $p < .06$ ) and that males expected to do better if the other student was female ( $F = 4.60$ ;  $df = 1/192$ ;  $p < .05$ ). Thus, female expectations, considerably lower than men's ( $F = 20.60$ ), were not raised by information that another female student had been successful, whereas men seemed to feel that they would do better if a female had done well. One might conclude from such data that a single instance cannot alter female expectations. One reason for this may be that role models are used for comparison purposes; that is, to feel competent in his or her potential, a person may have to feel that he or she can compete with those who have been successful. This might require that one perceive similar or more competence than the model in at least some respects. One might hypothesize that a successful female role model will increase other females' expectations if she gives the impression that she is equal to or less competent in some aspects of her performance. Another possibility is that a personal relationship based on equal social attributes might increase the chances for positive comparisons. Either of these factors might be shortcuts to changing individual female expectations because they change probabilities for oneself even though the majority of females are not so successful.

TABLE 1  
ESTIMATES OF PERFORMANCE ON THE LAW SCHOOL  
APTITUDE TEST AFTER EXPOSURE TO A MALE OR  
FEMALE "MODEL" WHO WAS SUCCESSFUL OR  
NOT SUCCESSFUL ON THE TEST

Sex of subject	Sex of model	Performance of model	
		Successful	Unsuccessful
Male	Male	14.73	17.85
	Female	19.23	18.81
Female	Male	12.81	14.27
	Female	12.15	15.04

Note.-- $N$ 's per cell = 26.

*Aspirations and Striving*

According to some data, expectations are positively related to aspirations and achievement striving. Experimental subjects assigned to high expectancy of success conditions perform better than those assigned to low expectancy conditions (Tyler, 1958). Young children whose teachers are told to expect them to perform well tend to do so (Rosenthal & Jacobson, 1968). Adolescents and college students who expect less success in school also achieve less (Crandall, 1969) and persist less (Battle, 1966). But in comparing women to men, one ought to find lower goal setting and achievement striving by women because they and others expect less achievement of women. Most studies verify this prediction (Benton, 1973; Crowley, Levitin & Quinn, 1972; Veroff, 1969).

The explanation for any particular situation in which expectations and aspirations or striving are related is not clear, however. As argued earlier, low aspirations could result in low future expectations by creating actual low rates of success; and social conditions still exist that may depress both expectations and aspirations, such as antifemale discrimination and expected family responsibilities. But undoubtedly, low expectations are a cause of low aspirations, too. A relatively low perceived probability of success for a woman would discourage her from high ambition and at the same time decrease pressure on her from others to succeed at a high level. Given relatively low standards of comparison for women, she who unambiguously achieves a little may congratulate herself and be rewarded by others for doing better than was expected of her; a man must achieve more to exceed expectations. Therefore, she triumphs by appointment as an administrative assistant, and he as a vice-president. This hypothesized difference in standards may explain why Taynor and Deaux (1973) found that females were relatively overrewarded for success in an experimental task (and why men die earlier). However, the hypothesis should be more explicitly tested by varying task importance or difficulty. Women might be overrewarded more, the more demanding the task.

Once a woman's performance goes too far beyond what is expected, rewards from others may drop considerably. This result may occur because strong expectations often evolve into social norms which are enforced by implicit and explicit social pressure. Psychological costs are associated with achieving success to the extent that women are actually or potentially rejected for doing so, not prepared to deal with deviant status, or do not encounter social incentives for trying. Further, low achievement expectations as norms limit the goals to which women may aspire with approval from others and narrow the list of alternative occupations or behaviors in task situations thought to be most appropriate.

Norms specifying what is preferable behavior for a woman may exist at the same time that individuals value equality. Komarovskiy (1973) conducted a program of intensive interviewing and testing with 62 college males. Although

70% said that they wanted their dates or wives to be intellectually equal to themselves, only 55% intended to marry a woman who worked, and only 7% of the total intended to marry a woman who worked while her children were young.

In the experimental laboratory, those who violate social norms can expect disapproval, rejection, or disregard by others (e.g., Kiesler, Kiesler & Pallak, 1967; Raven & French, 1958; Schachter, 1951). It should not be surprising that in real life, women act out their expected feminine role even when other behaviors potentially incur more prestige, financial reward, power, or personal freedom. Horner's (1970) finding that women predict anxiety, guilt, or life setbacks to follow success by a female can be readily interpreted as recognition by them that success brings deviant status. Monahan, Kuhn, and Shaver (1974) demonstrated that when a complete experimental design is employed in testing Horner's hypothesis, males as well as females predict that negative consequences will result from a woman's success (but these data are based on the responses of subjects 11-16 years old). Morgan and Mousner (1973) found that women, but not men, reduced their level of performance on a test taken alone when they later worked on the same test with a man (but they did not test whether men increased their level of performance in the presence of women).

Thus, previous data are consistent with the hypothesis that there do exist expectations that female success will have some negative outcomes not associated with male success. But there are no data as yet that have demonstrated an actual decrease in interpersonal attraction toward a successful woman. In fact, the reverse may be true (Spence & Helmreich, 1972). In a survey of 864 women (Kiesler, 1974), those asked to recollect advice or social pressure concerning achievement were more likely to remember being encouraged. How, then, do social norms negatively affect women? One possibility is that female achievement striving is under-reinforced (but not punished) in situations where others can reward alternative behaviors. For example, in informal social situations people may show more interest in a man's work, but a woman's children. This possibility has not yet been empirically tested.

A third reason why low expectations for women may reduce achievement behavior is that both the anticipation of failure and social rejection following achievement striving causes anxiety (Horner's hypothesis). Achievement anxiety may cause one to avoid seeking success, or may distract from efforts to succeed. There is some evidence, reviewed by Stein and Bailey (1973), that females are more test anxious than males and that anxiety is negatively related to achievement. Not previously mentioned in connection with female achievement is the possibility that "worry about worry" may additionally interfere with achievement behavior. This exacerbation process has been noted by attribution theorists interested in therapeutic change. Storms and Nisbett (1970), for

example, maintain that insomnia, while initially caused by worry about one's problems, is worsened by anxiety about the state of insomnia itself.

What happens when women experience success? It has been hypothesized that success information ought to change actuarial estimates, the implication of which is that actual success or passing over early hurdles not overcome by other females ought to disinhibit aspirations. A female who does so may then try even harder because she has done well in spite of actuarial predictions. Nevertheless, consideration must be made of her inferences concerning why she has been successful.

### *Attributions of Causality for Achievement*

The recent development of attribution theory (e.g., Jones, Kanouse, Kelley, Nisbett, Valins, & Weiner, 1972) has included an examination of how inferences about success or failure may affect a person's emotional response to his performance and his subsequent attempts to achieve in the future. Weiner (1972) classified attributions of cause for performance along two factorial dimensions, internality-externality and stability-variability. Success or failure may be caused by stable, internal attributes of the person such as ability, or by variable, internal attributes such as effort or intent. External causes may also vary in stability. Success or failure may be caused by a stable aspect of the situation, such as the difficulty of the task or the work environment, or by something quite variable, such as luck.

Weiner contends that attributions of causality for success or failure have implications for future performance. People who have been found to be high in achievement motivation attribute their successes to ability (a stable internal attribute) and to their motivation (a variable internal attribute), whereas their failures are attributed to a lack of effort (Kukla, 1972). This pattern of attributions may explain why highly motivated males try again when they fail. In contrast, persons who score low in achievement motivation are less likely to attribute success to their ability or motivation but more likely to attribute failure to a lack of ability (Weiner & Kukla, 1970; Weiner & Potepan, 1970).

A number of experiments have examined the effect of expectations on attributions, some of them with special attention to expectations about women. Attribution theorists have hypothesized that unexpected levels of performance are attributed to external causes (Rotter, 1966) or to unstable causes (Weiner, 1972), the implication being that an ability attribution is the least likely explanation of unexpected success. An experimental extension to women has been made in this regard. Assuming that success by a woman would be unexpected, Deaux and Emswiler (1974) asked men and women to make attributions of causality for a man and woman who had succeeded on an experimental perception task. When given a choice of attributing luck or ability

to success, their subjects attributed more ability to a male who succeeded and more luck to a female who succeeded. Feldman-Summers and Kiesler (1974) gave their subjects an opportunity to make differential attributions among ability, effort, task difficulty, and luck. Shown an experimental task on which women had performed as well as men, the subjects perceived women as having been more motivated on the task. In a second experiment, subjects who read about a successful physician were more likely to attribute that success to motivation when the physician was female rather than male. Although male and female subjects differed somewhat, other perceptions were that the female physician was less able, had had less environmental support in general, but greater help from a father (in those conditions when the physician was described as having had a physician father). In sum, expectations that women will not succeed, when they are generalized to a single case, make it less likely that their success will be attributed to their ability. Where good luck seems to be a plausible explanation (such as when the person is momentarily successful on an experimental task), that explanation may be used instead. Success in a career, however, cannot be attributed to good luck; rather, that sort of success requires high performance over time. Successful career women apparently will be seen as having been especially motivated or having put forth a great deal of effort.

Do successful women attribute causality to their own performance in the same way? Two studies indicate that they do attribute success less to their ability than to their motivation (Bar-Tal et al., 1973; Frieze, 1973). Moreover, high "need for achievement" (*n Ach*) women may attribute their failures, not to lack of effort (as high *n Ach* men do), but rather to bad luck, to a difficult task, or even to lack of ability (Crandall, Katkovsky, & Crandall, 1956; McMahan, 1972). These attributions have been said to negatively affect achievement behavior by women, just as they do for men who are low in *n Ach* or high in fear of failure.

But the data in this area are as yet incomplete and do not resolve the issue as to whether success in the real world by females will have fewer positive implications for them than does success by men. For instance, the classification of ability as internal and stable is probably inaccurate. Ability clearly has external components, and its stability depends on whether one is speaking of general intelligence or recently learned skills. Do attributions of ability for men mean the same thing as attributions of ability for women? Possibly not. One reasonable hypothesis may be that more skill is attributed to men after success (because of better chances to learn) but not more intelligence. An unequal attribution of skills may not have important implications for one's further performance if the future job or situation is perceived to be equal for men and women.

The same sort of problem is found in research on attributions of motivation following success. An attribution that a person has succeeded because of hard work and effort may be more or less positive depending upon

whether an achievement or ambition is seen as the cause of the effort. Women who know they succeeded because of effort may perceive this as a positive sign of long-term motivation.

One implication of the actuarial process is that success that has resulted from an overcoming of barriers that are perceived to cause lower female achievement in general will have positive implications for an individual's future success, but that success which appears to have resulted from temporary avoidance of those barriers will not. Thus, it is hypothesized that the longer and more consistent the success, the greater the environmental or normative barriers, and the lower the advantages of an individual, the more likely it is that attributions of ability and motivation will be perceived as positive predictors of future success.

Probably, differential attributions for men and women, as they are now measured in experiments, are not important. The hypothesis that they mean different things should be tested. On the other hand, differential attributions of motivation and ability for men and women, if they were equally internal and stable, might be. Employers select "ambitious" people for some jobs, "intelligent" people for others, and their selection criteria probably are determined by stereotypical, actuarial estimates.

#### UNRAVELLING THE SELF-FULFILLING PROPHECY

It has been argued that relatively low probability estimates for female success are likely a reasonable, human response to reality, rather than a blind emotional reaction we have come to associate with bigots and the uneducated. To change an entire society's expectations will require not simply the education persuasion, or castigation of a small minority of chauvinists, but rather, changing the achievement of women themselves and the behavior of people who affect them. Several hypotheses have been proposed that might lead to proposals for changing the actuarial estimates and their negative, self-fulfilling implications. These include hypotheses regarding the effect of less masculine linguistic forms, of role models with which one compares favorably, and of information leading to favorable causal attributions. One might also add that legal solutions that force equal treatment and equal responsibility are consistent with the discussion herein. If individuals must act as if group differences do not exist, a climate more conducive to female achievement might be created and women might be induced to take responsibility for their own achievement behavior as individuals. Possibly, though, there would also be less sympathy for their efforts, and less applause for mediocre performance.

#### REFERENCES

Allport, G. W. *The nature of prejudice*. Garden City, N.Y.: Anchor, 1958.

- Bar-Tal, D., Frieze, T., & Greenberg, M. Achievement motivation and sex as determinants of attributions for success and failure. Unpublished manuscript, University of Pittsburgh, 1973.
- Baruch, G. K. Maternal influences upon college women's attitudes toward women and work. *Development Psychology*, 1972, 6, 32-37.
- Battle, E. S. Motivational determinants of academic competence. *Journal of Personality and Social Psychology*, 1966, 4, 634-642.
- Bem, D. J. *Beliefs, attitudes and human affairs*. Belmont, Calif.: Wadsworth, 1970.
- Benton, A. A. Reactions to demands to win from an opposite sex opponent. *Journal of Personality*, 1973, 41, 430-442.
- Brim, O. G., Jr., Goslin, D. A., Glass, D. C., & Goldberg, T. *American beliefs and attitudes about intelligence*. New York: Russell Sage, 1969.
- Clifford, M. M., & Looft, W. R. Academic employment interviews: Effect of sex and race. *Educational Research*, 1971, 22, 6-8.
- Crandall, V. C. Sex differences in expectancy of intellectual and academic reinforcement. In C. P. Smith (Ed.), *Achievement-related motives in children*. New York: Russell Sage, 1969.
- Crandall, V. C., Katkovsky, W., & Crandall, V. J. Children's belief in their own control of reinforcement in intellectual-academic achievement situations. *Child Development*, 1956, 36, 91-109.
- Crowley, J. E., Levitin, T. E., & Quinn, R. P. Facts and fictions about the American working woman. *Newsletter*, Institute for Social Research, University of Michigan, 1972.
- Deaux, K., & Emswiller, T. Explanation of successful performance in sex-linked tasks: What's skill for the male is luck for the female. *Journal of Personality and Social Psychology*, 1974, 29, 80-85.
- Deaux, K., & Farris, E. Attributing causes for one's own performance: The effects of sex, norms and outcome. Unpublished manuscript, Purdue University, 1974.
- Feather, N. T. Attributions of responsibility and valence of success and failure in relation to initial confidence and perceived locus of control. *Journal of Personality and Social Psychology*, 1969, 13, 129-144.
- Feather, N. T., & Simon, J. G. Attribution of responsibility and valence of outcome in relation to initial confidence and success and failure of self and others. *Journal of Personality and Social Psychology*, 1971, 18, 173-188.
- Feldman-Summers, S., & Kiesler, S. B. Those who are number two try harder: The effect of sex on attributions of causality. *Journal of Personality and Social Psychology*, 1974, 30, 846-855.
- Festinger, L. A theory of social comparison processes. *Human Relations*, 1954, 7, 117-140.
- Fidell, L. S. Empirical verification of sex discrimination in hiring practices in psychology. *American Psychologist*, 1970, 25, 1094-1098.
- Frieze, I. Sex differences in perceiving the causes of success and failure. Unpublished manuscript, University of Pittsburgh, 1973.
- Goldberg, P. A. Are women prejudiced against women? *Trans-Action*, April 1968, 28-30.

- Gross, E. The sexual structure of occupations over time. Paper presented at the meeting of the American Sociological Association, San Francisco, Aug. 1967.
- Hoffman, L. R., & Maier, N. R. F. Social factors influencing problem solving in women. *Journal of Personality and Social Psychology*, 1966, **4**, 382-390.
- Horner, M. S. Femininity and successful achievement: A basic inconsistency. In J. Bardwick, E. M. Donovan, M. S. Horner, & D. Gutmann (Eds.), *Feminine personality and conflict*. Belmont, Calif.: Brooks-Cole, 1970.
- Jones, E. E., Kanouse, D. E., Kelley, H. H., Nisbett, R. E., Valins, S., & Weiner, B. (Eds.) *Attribution: Perceiving the causes of behavior*. Morristown, N.J.: General Learning Press, 1972.
- Keniston, E., & Keniston, K. An American anachronism: The image of women and work. *American Scholar*, 1964, **33**, 355-375.
- Kiesler, C. A., Kiesler, S. B., & Pallak, M. S. The effect of commitment to future interaction on reactions to norm violations. *Journal of Personality*, 1967, **35**, 585-599.
- Komarovsky, M. Cultural contradictions and sex roles: The masculine case. *American Journal of Sociology*, 1973, **78**, 873-884.
- Kukla, A. Cognitive determinants of achieving behavior. *Journal of Personality and Social Psychology*, 1972, **21**, 166-174.
- McMahon, I. D. Six differences in expectancy of success as a function of task. Paper presented at the meeting of the Eastern Psychological Association, Apr. 1972.
- Miller, G. R., & McReynolds, M. Male chauvinism and source competence: A research note. *Speech Monographs*, 1973, **40**, 154-156.
- Milton, G. A. Sex differences in problem solving as a function of role appropriateness of the problem content. *Psychological Reports*, 1959, **5**, 705-708.
- Mischel, H. N. Sex bias in the evaluation of professional achievements. *Journal of Educational Psychology*, in press.
- Monahan, L., Kuhn, D., & Shaver, P. Intrapsychic versus cultural explorations of the "fear of success" motive. *Journal of Personality and Social Psychology*, 1974, **29**, 60-64.
- Montanelli, D. S., & Hill, K. T. Children's achievement expectations and performances as a function of two consecutive reinforcement expectancies, sex of subject, and sex of experimenter. *Journal of Personality and Social Psychology*, 1969, **13**, 115-128.
- Morgan, S. W., & Mausner, B. Behavioral and fantasied indicators of avoidance of success in men and women. *Journal of Personality*, 1973, **41**, 456-470.
- Neath-Gelvin, J. & Kiesler, S. B. Personal communication, 1975.
- Parsons, J. E., & Ruble, D. N. Attributional processes related to the development of achievement related affect and expectancy. Paper presented at the meeting of the American Psychological Association, Aug. 1972.
- Pheterson, G. T., Kiesler, S. B., & Goldberg, P. A. Evaluation of the performance of women as a function of their sex, achievement, and personal history. *Journal of Personality and Social Psychology*, 1971, **19**, 110-114.

- Raven, B. H., & French, J. R. P. Group support, legitimate power, and social influence. *Journal of Personality*, 1958, 26, 400-409.
- Rosenthal, R., & Jacobson, L. R. Teacher expectations for the disadvantaged. *Scientific American*, 1968, 218, 19-23.
- Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 1966, 80, 1-28.
- Rubin, Z. *Liking and loving*. New York: Holt, Rinehart, & Winston, 1973.
- Ryckman, R. M., & Sherman, M. F. Interaction effects of locus of control and sex of subject on confidence ratings and performance in achievement related situations. Paper presented at the meeting of the American Psychological Association, Aug. 1972.
- Schachter, S. Deviation, rejection, and communication. *Journal of Abnormal and Social Psychology*, 1951, 46, 190-207.
- Smith, H. M., & Clifton, M. A. Sex differences in expressed self-concepts concerning the performance of selected motor skills. *Perceptual and Motor Skills*, 1962, 14, 71-73.
- Spence, J. T., & Helmreich, R. Who likes competent women? Competence, sex-role congruence of interests, and subjects' attitudes toward women as determinants of interpersonal attraction. *Journal of Applied Social Psychology*, 1972, 2, 197-213.
- Stein, A. H. The effects of sex-role standards for achievement and sex-role preference on three determinants of achievement motivation. *Developmental Psychology*, 1971, 4, 219-231.
- Stein, A. H., & Bailey, M. M. The socialization of achievement orientation in females. *Psychological Bulletin*, 1973, 80, 345-366.
- Stein, A. H., Pohly, S. R., & Mueller, E. The influence of masculine, feminine, and neutral tasks on children's achievement behavior, expectancies of success, and attainment values. *Child Development*, 1971, 42, 195-207.
- Storms, M. D., & Nisbett, R. E. Insomnia and the attribution process. *Journal of Personality and Social Psychology*, 1970, 16, 319-328.
- Strickland, F. R. Aspiration responses among negro and white adolescents. *Journal of Personality and Social Psychology*, 1971, 19, 315-320.
- Suter, L. E., & Miller, H. P. Income differences between men and women. In J. Huber (Ed.), *Changing women in a changing society*. Chicago: University of Chicago Press, 1973.
- Taynor, J., & Deaux, K. When women are more deserving than men: Equity, attribution, and perceived sex differences. *Journal of Personality and Social Psychology*, 1973, 28, 360-367.
- Touhey, J. C. Effects of additional women professionals in ratings of occupational prestige and desirability. *Journal of Personality and Social Psychology*, 1974, 29, 86-89.
- Tyler, B. B. Expectancy for eventual success as a factor in problem solving behavior. *Journal of Educational Psychology*, 1959, 49, 166-172.
- Veroff, J. Social comparison and the development of achievement motivation. In C. P. Smith (Ed.), *Achievement-related motives in children*. New York: Russell Sage, 1969.

- Walster, E., Cleary, T. A., & Clifford, M. M. The effects of race and sex on college admission. *Sociology of Education*, 1970, **44**, 237-244.
- Weiner, B. *Theories of motivation: From mechanism to cognitive*. Chicago: Markham, 1972.
- Weiner, B., & Kukla, A. An attributional analysis of achievement motivation. *Journal of Personality and Social Psychology*, 1970, **15**, 1-20.
- Weiner, B., & Potepan, P. A. Personality correlates and affective reactions towards exams of succeeding and failing students. *Journal of Educational Psychology*, 1970, **61**, 144-151.