

Attributional factors mediating female under achievement and low
career aspirations

Jacquelynne E. Parsons
University of Michigan

Paper presented at Symposium on Attributional Analysis of Problems in Women's
Lives at American Psychological Association Convention, San Francisco, 1977.

Attributional factors mediating female underachievement and career aspirations

Unequal participation of the sexes in the domain of employment has become increasingly difficult to ignore. Although increasing numbers of women are working, these women are still concentrated in the lower levels of the professional hierarchy in spite of attempts in recent years to decrease discrimination in hiring and salaries of women. For example, the percentage of women in professional and technical occupations decreased from 42 percent in 1950 to 39 percent in 1968 while during the same time period the percentage of women clerical workers increased from 59 percent to 73 percent (U.S. Department of Labor, 1969). The underemployment of women implied by these figures is widespread:

Although college-trained women are more likely than other women to become gainfully employed and although more women are college trained now than in the past, they are taking positions lower than in the past and lower than their potential, as measured in terms of education, would indicate. The problem is not, therefore, that the talented women are not in the labor force but rather that they are not contributing at the level their talents would justify.

(Bernard, 1971, p. 123)

Although highly important, institutional barriers and sex typing of jobs are not entirely responsible for this phenomenon. There is evidence that other factors might also contribute to the fact that women are underrepresented in professional careers. Psychological investigations have highlighted several such factors which could interfere with female professional accomplishments by influencing career aspirations in such a way as to predetermine the training young women seek and the skills they acquire. Society must be made aware of

these factors and their implications if it is to benefit from the unrealized career potential of women and if women are to enjoy new life style options.

The studies reported in this paper focus on one set of intrapsychic variables that might influence women's career aspirations; namely, those associated with the expectancy x value model of task choice (Weiner, 1975): expectations of and attributions for success and failure and perceived importance of success. Sex differences in various areas of achievement have been documented among subjects ranging in age from early elementary school through adulthood (Maccoby & Jacklin, 1974). In some areas girls excel (e.g., school grades and language development); while in others, boys excel (e.g., spatial abilities). However, differences in favor of boys seem to increase with age such that by college the proportion of female under-achievers and low aspirers exceeds that of males (Stein & Bailey, 1973). Lowered expectancies and greater response to failure provide possible explanations for this under-achievement among females. Females typically have lower expectations for success, are more likely to assume personal responsibility for failure and are more likely to evidence what has been called the low expectancy attributional pattern for their successes and failure than are male (Frieze, et al, 1975; Jackaway, 1975; Nichols, 1975; Parsons et al, 1976; Stein & Bailey, 1973). Furthermore, evidence indicates that self-perceptions related to expectancies influence achievement behaviors in a number of ways. For example, several studies report a relationship between expectancies for success and both persistence at a task and quality of performance (Crandall, 1969; Diggory, 1966; Feather, 1966). In addition, attributional patterns have been related to level of pride and shame following success or failure on a task (Parsons & Ruble, 1972; Weiner, 1974). Thus it is possible that sex difference on these cognitive-perceptual variables might be responsible, in part, for the under-achievement of females.

Children's Achievement Attribution.

To assess this possibility, children ranging in age from 3 1/2 - 12 were exposed to either repeated success or failure. Their expectancies were measured prior to and following the task. Sex differences in expectancies emerged by six years of age. In addition, the girls' expectancies in this age group dropped more in response to failure than did the boys'. (More details on this study are available in Parsons, 1974 and Parsons & Ruble, 1977, in press). Study 2 focused on the attributional variables that might be mediating these sex differences. Children ranging in age from 3 1/2 - 12 were asked to rate, on scales ranging from 1-9, the task difficulty, their own effort and ability of the task, and their relative ability as well as give their expectancies for future performance. Within the Weiner (1974) model of achievement behaviors, each of these variables is assumed to be an important mediator between past outcomes and future expectancies.

As was found in Study 1, females as early as 4-5 years of age lowered their expectancies more in response to failure than did the males. In terms of attributions, there were no significant sex or sex by age effects on ratings of task difficulty or absolute ability. But girls across all ages and both outcome conditions rated their efforts ($\bar{m}=7.85$) higher than the boys rated theirs ($\bar{m}=6.90$). Finally a sex by age interaction emerged on the children's ratings of relative ability ($F=4.72$; $df=2$; $p=.01$). With increasing age, the boys' rating of their relative ability rose ($\bar{m}_{4-5}=4.9$, $\bar{m}_{6-8}=6.1$, $\bar{m}_{9-12}=6.2$) while the girls' ratings declined ($\bar{m}_{4-5}=6.9$, $\bar{m}_{6-8}=4.4$, $\bar{m}_{9-12}=4.5$). Thus with increasing age the girls in this study are rating themselves as relatively less able than their male peers are rating themselves.

These findings are consistent with findings in other studies using a comparable methodology. For example, Ruble, Parsons and Ross, 1975, had children

ages 5-6, 7-8, 9-10 rate their ability and their outcome on 9 point scales after completing a concept-identification task. Girls across all ages rated both their ability and their outcome lower than did the males inspite of the fact that they, the girls, had actually performed better. Similarly, a series of studies have shown that girls are more likely than boys to exhibit what has been labeled the low expectancy attributional pattern; namely attributing their success to unstable factors and their failure to internal and/or stable factors (i.e., lack of ability) (Crandall, 1969, Jackaway, 1974, & Nichols, 1975, see Frieze, et al, 1977 for complete review).

Adult Attributional and Valuing Patterns for Careers

Study 1b. Thus, it appears that females are more likely than males to exhibit expectancies and related attributional patterns that underestimate their potential. To the extent that comparable attributional patterns exist for career success & failure as well, then this pattern might well prevent young women from considering a full range of careers especially if they felt high ability was a prerequisite for success. Perhaps the fact that so many highly qualified women do not select achievement-related careers is mediated by their attributional patterns. If a woman does not attribute success in these careers to stable, internal causes and failure to unstable or external causes, then she may choose a different life-career. To investigate this possibility 48 college women were asked to make attributions for their most preferred and least preferred occupations. It was predicted that a high expectancy attributional pattern, i.e., internal and stable for success and external or unstable for failure, would emerge for the most preferred but not the least preferred occupation.

In the first of two sessions, the subjects selected their most preferred and least preferred careers from a list of eleven possible roles. The choices were selected from a pilot study to represent a range of training, status

and sex-role appropriateness. All eleven were appropriate career goals for college students. The eleven were surgeon, pediatrician, interior decorator, trained artist, psychologist, elementary school teacher, high school teacher, mechanical engineer, accountant, nurse, and mother.

In the second session, subjects rated the importance of each of the following five causes (on a 10 point scale) for success and failure in their most and least preferred careers: effort, ability, specific help from others, stable help from others, and task ease. It is important to note that the specific careers varied across subjects but the magnitude of preference was held constant. Each subject rated her own most and least preferred occupation. Separate ANOVA were run for each of the five dependent measures. The results are summarized in Table 1 and 2.

INSERT TABLE 1 AND 2 HERE

In general the main effects for the outcome manipulation replicate previous attributional findings, see Frieze and Weiner, 1971. Internal factors were given higher ratings as causes for success than for failure and task difficulty was judged to be a more important cause of failure than of success. Similarly, inspection of the means associated with the various causes reveals a general trend toward higher ratings on the importance of the internal attributions (ability and effort). This trend is evident in all relevant comparisons with the one exception of the ratings associated with task difficulty in the failure condition. Furthermore, effort is rated as a more important cause of both success and failure than is ability. Again these findings replicate the patterns reported by Frieze and Weiner using a comparable, high achieving, college population consisting of both males and females. These attributional patterns suggest that the attributional model can be applied to such long range goals as careers.

With regard to the relationship between career preference and attributional patterns, the predictions were, for the most part, supported. Internal factors were seen as more important determinants of success in one's most preferred occupation. Conversely, relative to one's most preferred career, external factors were rated as more important determinants of success in one's least preferred occupation. As predicted, this differential patterning of the relative importance of internal versus external attributions suggests that the subjects will internalize their successes more and see themselves as more in control of success in their most preferred occupation. Consequently success should be seen as more rewarding in these occupations. In addition, the positive affective valence should be higher and thus the approach motive should be greater for one's preferred career.

Likewise, the predictions regarding failure attributions were supported. Internal factors were seen as more important determinants of failure in one's least preferred career while task difficulty and lack of supportive, external influence (both external causes) were seen as more important determinants of failure in one's most preferred occupation. Again, as predicted, this differential patterning suggests that subjects externalize their failures more in their most preferred occupations. As a consequence, the negative affective valence and the avoidance, or fear of failure, motive should be lower for one's most preferred occupation. Combined these two patterns suggest that subjects will approach their most preferred occupations, relative to their least preferred occupations, with higher expectation for success and with greater positive affect.

Study 1b. Having established the relevance of an attributional analysis for career choices, we next set out to investigate the link between attributional patterns, perceived importance, and sex-stereotyping of occupations. If

women perceive male stereotyped occupations differently than female stereotyped occupations of comparable status and required training, then they will respond differently to these career options. More specifically, if women think that male stereotyped occupations are more difficult and yet of no more importance to them than female stereotyped occupations, then they should be more likely to select the female stereotyped occupations.

To test for differential perception of occupational difficulty and importance, we had 48 college women rate 10 occupations on (a) the difficulty of the occupation, (b) the probability of success, (c) the importance of success, (d) the amount of effort they would be willing to put out to succeed, (e) how good they would feel if they succeeded and (f) how bad they would feel if they failed. They used a 7 point scale ranging from 1 = the low end of the scaled value to 7 = the high end of the scaled value for all ratings except probability of success. For probability of success, they estimated the probability from 0% to 100%.

Eight of the occupations represented four pairs of occupations matched on status and required professional training but varying on sex-role stereotyping: surgeon-pediatrician, trained artists - interior decorator, high school teacher - elementary school teacher, mechanical engineer (B.A. level) - nurse (B.A. level). Two other occupations were included because of their importance to women: psychologist because it was the single most commonly selected occupations in study 1b and mother because it is the occupation selected by most women in general.

Since specific apriori prediction were made, the data were submitted to a series of t tests. The means and summary of statistical analyses are presented in Table 3.

INSERT TABLE 3 HERE

In general, the results support the predictions. The male stereotyped occupation in the each status training level was rated as more difficult. In three of the pairs, the probability of success was rated as lower for the male stereotyped occupation. Success in the male stereotyped occupation was rated as more important relative to success in the female stereotyped occupation in one only of the pairs. No consistent stereotyping effect emerged for the other three dependent measures (the amount of effort the subject was willing to invest, and the two affective ratings). But the rank ordering of the occupations on each of these three measures correlated significantly with the rank ordering of the careers on the perceived importance of success and not with the

INSERT TABLE 4 HERE

rank orderings of the careers on either perceived difficulty or perceived probability of success. (of these six, only the rank order correlation between positive affect and probability was significant.) If we consider perceived difficulty, perceived probability of success and perceived importance as properties primarily of the occupation and anticipated effort and affect as intrapersonal responses to the occupations, then these data suggest that is the perceived importance of various occupations that determines one's intrapersonal response to these occupations. And, while the sex stereotyping within the various occupational pairs did not systematically affect the rated importance of the occupations, it is interesting to note that mother was given the highest rating for importance ($p < .01$) and that all of the helping professions (except nurse) were rated as more important than the three more individually-oriented careers ($p < .05$).

In conclusion, the data from Study 2b support the prediction that male stereotyped occupations are seen as relatively more difficult than comparable female stereotyped occupations but are not seen as of any more importance to the women subjects themselves. Further, these data indicate that success at mothering is rated as more important than success at any of the other occupations. In line with this finding, the women reported that they would be willing to exert the most effort to be "successful" mothers, would feel the best about this success, and the worst about failing to meet this goal. Finally, being a "successful" mother is seen as difficult but highly probable. Thus it seems that the mother role is extremely important to this group of college women and that they plan to put a large amount of effort into succeeding in this role. It seems likely, given this pattern, that any occupation that seriously threatens these women's ability to become "successful" mothers would not be seen as very appealing. Further data are needed to test this hypothesis.

Study 3b. Having shown that sex-role stereotyping does influence one's perception of the difficulty and value of various occupations, we were interested in whether sex-role stereotyping affects subjects' attributional patterns for success and failure at these occupations. If sex-roles are affecting attributional patterns in such a way as to affect career choice, then the high expectancy attributional pattern (attributing success to ability and effort and failure to task difficulty or lack of effort) ought to be more characteristic of female stereotyped occupations while the low expectancy attributional pattern (attributing success to task ease and luck and failure to lack of ability) ought to be more characteristic of the male stereotyped occupations.

To investigate this prediction, we had 78 undergraduate women rate the importance of the following six causes on a 10 point scale for success and failure

in either the four female stereotyped or the four male stereotyped occupations from the four paired occupations used in Study 2b: effort, ability, specific help from others, stable help from others, task ease, and interest. Success and failure was manipulated within subject and stereotyping was manipulated between subjects.

Separate three way ANOVA's (sex-stereotyping x status level x outcome) were run for each of the six causes. Unstable and stable external help yielded no significant effects and were seen as unimportant causes of either success or failure. The means associated with the three way interaction term for each of the other four causes are listed in Table 5. Appropriate simple effects were tested with Newman - Keuls at $p < .05$ and are summarized on Table 5. Significant effects for each of the four causes are summarized in Table 6.

INSERT TABLE 5 and 6 HERE

In general, whenever stereotyping effects emerged, the women rated the cause as a more important determinant of success or failure in the female occupations. Nevertheless, of the fourteen relevant significant differences, twelve supported our predictions and only two ran counter to them. But of the fourteen only three are relevant to the low expectancy predictions, (i.e., that failure in male stereotyped occupations would be attributed more to lack of ability than failure in female occupations while success in male occupations would be attributed to task ease rather than ability or effort more than success in female occupations) and only one (attributing failure to lack of ability) supported our prediction. Thus there is support for the prediction that women's attributions for success at female stereotyped occupations are more characteristic of the high expectancy pattern than are their

attributions for success in male stereotyped occupations. But a low expectancy attributional pattern is not characteristic of these women's attributions for either success or failure in any of the occupations sampled.

Discussion

While I'd like to conclude that both perceived causes of success and failure and perceived importance influence, in part, one's career choice, the causal direction of this relationship can not be specified from these data. It is possible that career choice determined attributions and importance or that career choice, attributional patterns and perceived importance are influenced by some third variable like sex-role stereotyping. However, past research indicates that attributional and valuing patterns do effect behavioral choices (see Weiner, 1974 for review of this literature). Thus, it seems reasonable that once established, the attributional and valuing patterns demonstrated in these studies can influence one's consideration of various occupations. And, as a result, some occupations may not be considered as possible career alternatives. In turn, without serious consideration and subsequent input of new information, it is unlikely that either the attributional patterns or the perceived importance of unions occupations will change or that new options will be investigated.

The implications of these results for an understanding of women's career choices are clear. If we assume that females acquire differential attributional patterns for success and different values for success at various occupations, and that these differential patterns are associated with the sex-role appropriateness of the career, then attributional and valuing patterns may help explain preference for sex-appropriate careers. Perhaps, more importantly, this approach provides a mechanism for increasing women's perceived career options. If one's approach-avoidance patterns can be changed by altering the attributional and

valuing patterns one has, then women's (and men's) perceived career options can be increased by value and attributional resocialization, i.e., by training them to associate different attributions with success and failure at and different importance and value-ratings for various occupations. Dweck, 1975, and Dweck & Reppucci, 1973, have demonstrated that attributional retraining can be successful with chronic underachievers, Erickson, 1975, has demonstrated that value retraining can also be accomplished. Both should be successful with career counseling as well.

Sex Bias in the Attributions of Observers/Employers

But, having once gotten women to consider various professional careers, counselors need to be aware of and to alert the women to the attributional biases that they may well confront. Several studies have documented the low expectancies for success people in general have for women (e.g., see Frieze et al for review). Further, Feather and Simon (1975) demonstrated that ability is used^{by college students} to explain male occupational success to a greater degree than female occupational success while lack of ability is used to explain female occupational failure to a greater extent than male occupational failure. In a similar study using college subjects (Heim, 1975), males' achievement successes were attributed more to ability than were females' while females' achievement failures were attributed more to lack of ability than were males'. In addition, both females' achievement successes and failures were attributed more to effort than were males. Thus a females' success was seen as unstably caused, leaving the observer in doubt as to whether her performance will continue. In contrast a male's success was seen as stably caused, allowing the observer to conclude that the man will continue to succeed. Further, when failing, women were seen as both less capable and less diligent than their male counterparts. Given the importance of both ability and effort in this culture, this

discrepancy puts women at a distinct disadvantage. Their successes do not necessarily lead to increased estimations of their ability while their failures do lead to decreased estimations of both their ability and their willingness to try.

In a major literature review, O'Leary (1974) concluded that employers in major career fields also exhibit this low expectancy pattern. In one of the few studies of attributional processes in simulated employment settings, Valle (reported in Frieze, et al, 1975) demonstrated the effect of low initial expectancies on employer's attributions of workers' successes and failures. She found that simulated employers make attributions which coincide with their initial expectancies such that unexpected success and unexpected failure are attributed to unstable factors. What this means for women is that, to the extent that employers have lower initial expectancies for them, these employers will discount the women's successes and over-weight their failures in making evaluative judgments of their performances.

Women need to be aware of this bias for at least two reasons. First, and most importantly, they need to know that the employers' attributions reflect a bias and not an accurate assessment of the situation. Because women have lower expectancies for themselves, they are in need of social support for newly emerging self images and attributional patterns. If they are confronted with disconfirming social feedback, their own self concepts may suffer. But if a woman is aware of the bias that may be operative in her employment setting, she can muster supports elsewhere to bolster her aspirations and self concept. Second, she can work in the setting to change the employer's bias. Unfortunately, this means that she may have to work harder than her male peers to gain recognition. But at least being forewarned, she can plan and anticipate what she'll have to

do to overcome the potential biases that may be operating against her.

As a final note, more research needs to be done in this area and society needs to be alerted to this bias. In this way, perhaps change can occur at a more societal level which will lessen the problem. But in the mean time, counselors and individual women need to be aware of this issue in order to maximize their own chances of surviving and succeeding on the individual level.

- Bernard, J. Women and the Public Interest. Chicago: Aldine-Atherton, 1971.
- 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 Foundation, 1969.
- Diggory, J. Self evaluation: Concepts and studies. New York: Wiley, 1966.
- Dweck, C.S. The role of expectations and attributions in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 1975, 31, 674-685.
- Dweck, C.S. & Reppucci, N.D. Learned helplessness and reinforcement responsibility in children. Journal of Personality & Social Psychology, 1973,
- Erickson, V.L. Deliberate psychological education for women. Counselor Education and Supervision, 1975, 297-309.
- Feather, N.T. Attribution 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. and Simon, J.G. Reactions to male and female success and failure in sex-linked occupations. Journal of Personality and Social Psychology, 1975, 31, 20-31.
- Frieze, I.H., McHugh, M.C., Fisher, J., & Valle, V.A. Attributing the causes of success and failure: internal and external barriers to achievement in women. Paper presented at the APA-NIMH Conference on New Directions for Research on Women, Madison, Wisconsin, 1975.
- Frieze, I. & Weiner, B. Cue utilization and attributional judgments for success and failure. Journal of Personality, 1971, 39, 591-605.
- Heim, M.M. Attributional patterns in achievement and social situations: task and sex effects. Unpublished Honor's Thesis, Smith College, 1975.

- Jackaway, R. Sex differences in achievement motivation, behavior and attributions about success and failure. Unpublished Ph.D. dissertation, SUNY at Albany, 1974.
- Maccoby, E.E. & Jacklin, C.N. The Psychology of Sex Differences. Stanford, California: Stanford University Press, 1974, 47-62.
- Nichols, J. Causal attributions and other achievement related cognitions: Effects of task, outcome, attainment value and sex. Journal of Personality and Social Psychology, 1975, 31, 379-389.
- O'Leary, V.E. Some attitudinal barriers to occupational aspirations in women. Psychological Bulletin, 1974, 81, 809-826.
- Parsons, J. The development of achievement expectancies in girls and boys. Paper presented at Eastern Psychological Association, 1974.
- Parsons, J.E. & Ruble, D.N. Attributional and cognitive processes underlying the development of achievement-related expectancies. Child Development, 1977, In Press.
- Parsons, J.E., Ruble, D.N., Hodges, K.L., Small, A. Cognitive-developmental factors in emerging sex differences in achievement-related expectancies, Journal of Social Issues, 1976, __,
- Ruble, D.N., Parsons, J.E., & Ross, J. Self-evaluative responses of children in an achievement setting. Child Development, 1975.
- Stein, A.H. & Bailey, M.M. The socialization of achievement orientation in women. Psychological Bulletin, 1973, 80, 345-364.
- Weiner, B. Achievement motivation as conceptualized by an attribution theorist. In B. Weiner (Ed.), Achievement motivation and attribution theory. Morristown, N.J.: General Learning Press, 1974.
- Weiner, B. Theories of Motivation. Chicago: Markham Publishing Co., 1972.
- U.S. Department of Labor (Women's Bureau). Handbook on Women Workers. Washington, D.C.: U.S. Government Printing Office, 1969.

Table 1

Summary of Results for Career Attribution Study 1b

Causal Attribute	Means			
	Most Preferred Career		Least Preferred Career	
	Success	Failure	Success	Failure
Effort	7.56	5.13	7.00	6.39
Ability	6.81	4.29	5.21	5.42
Specific help	2.92	3.58	3.27	2.83
Task difficulty	2.21	3.00	5.33	4.25

Table 2

Summary of ANOVA results for Career Aspiration Study 1b

Causal Attribute	<u>F</u> 's	
	Outcome	Outcome x Preference
	Main Effect	Interaction
Effort	19.41, $p < .0001$	15.66, $p < .001$
Ability	17.94, $p < .001$	15.12, $p < .001$
Specific help	$p > .01$	7.42, $p < .01$
Stable, external help	7.15, $p < .01$	$p > .05$
Task Difficulty	52.33, $p < .0001$	18.06, $p < .001$

Table 3

Mean Attribute Ratings for Career Attribution Study 2b

Attribute	Career									
	Surgeon	Pediatrician	Artist	Interior Decorator	High School Teacher	Elementary School Teacher	Mechanical Engineer	Nurse	Mother	Psychologist
Difficulty	6.65 ¹	6.00	5.06 ²	3.97	4.73	4.62	5.33 ¹	4.73	5.60	5.30
Probability of Success	52.68% ²	64.49%	45.74% ²	65.30%	76.20%	73.30%	42.51% ²	70.40%	82.84%	72.76%
Importance of Success	5.73	5.75	4.59 ²	4.16	5.30	5.20	7.07 ¹	4.82	6.73	5.32
Effort	5.29	5.27	4.47 ²	3.92	5.17	4.97	3.89 ¹	4.60	6.38	5.14
Positive Affect for Success	5.88	5.63	4.97 ²	4.16	5.23	5.15	4.25 ¹	4.81	6.49	5.41
Negative Affect for Failure	4.82	4.97	3.92 ²	3.53	4.88	4.67	3.39 ²	4.54	6.31	4.80

1 P .05

2 P .01

Table 4

Rank Order of Occupations on Each Dependent Measure

Occupation	Dependent Measure					
	Difficulty ¹	Probability ² of Success	Importance ³ of Success	Effort ^{3,4}	Positive ^{3,5} Affect	Negative ^{3,6} Affect
Mother	3	10	1	1	1	1
Pediatrician	2	4	2	3	3	2
Surgeon	1	3	3	2	2	3
Psychologist	5	7	4	4	4	5
High School Teacher	8	9	5	5	5	4
Elementary School Teacher	9	8	6	6	6	6
Nurse	7	6	7	7	8	7
Artist	6	2	8	8	7	8
Interior Decorator	10	5	9	9	10	9
Mechanical Engineer	4	1	10	10	9	10

¹1 = most difficult

²1 = lowest probability of success

³1 = most importance, most effort, most positive affect
for success, most negative affect for failure.

⁴ ρ (with Difficulty)=.60, $p > .05$; ρ (with Probability)=.50,
 $p > .05$; ρ (with Importance)=.89, $p < .001$.

⁵ ρ (with Difficulty)=.67, $p < .05$; ρ (with Probability)=-.40,
 $p > .05$; ρ (with Importance)=.97, $p < .001$.

⁶ ρ (with Difficulty)=.55, $p > .05$; ρ (with Probability)=.52,
 $p > .05$; ρ (with Importance)=.97, $p < .001$.

Table 5

Means for the Three-Way Interaction for Each Causal
Attribution in Study 3b.

Attribution	Outcome	Means					
		Pediatrician	Surgeon	Elementary School Teacher	High School Teacher	Nurse	Mechanical Engineer
Effort	Success	7.77 ¹ >	7.49	7.51 >	7.23	7.54 >	7.51
	Failure	6.44 >	5.23	6.54 >	5.46	5.97 >	5.72
Ability	Success	6.49 >	5.97	6.36	6.67	8.33 >	6.62
	Failure	4.38	4.66	4.51	4.08	4.08 <	4.90
Task Ease/Dif- ficulty	Success	3.46 >	2.77	3.13 >	2.59	3.28	3.10
	Failure	6.10	6.23	5.64	5.89	7.15 >	4.85
Interest	Success	6.69 >	3.95	6.87	7.56	8.02 >	6.62
	Failure	5.13	5.00	5.51	5.38	5.10	5.44

Appropriate simple effects tested with Newman - Keuls at $p < .05$.

> listed as marginally significant due to significant main effect.

21
Table 6

Significant Effects for Study 3b

	Significant effects	
Attribution		
Effort	Sex Stereotyping	$p < .064$
	Outcome	$p < .001$
Ability	Outcome	$p < .001$
	Three way Interaction	$p < .05$
Task Ease	Outcome	$p < .001$
	Three way Interaction	$p < .02$
Interest	Status of Occupation	$p < .01$
	Outcome	$p < .001$
	Status x Outcome	$p < .06$
	Three way Interaction	$p < .08$