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Assessing the Theoretical Models for Sex Differences in Causal Attributions for Success and Failure

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Three basic models of attributional sex differences are reviewed: General Externality, Self-Derogation, and Low Expectancy. Although all of the models predict that women are unlikely to attribute their successes to ability, the models were quite different in other predictions. A meta-analysis of 21 studies examining sex differences in success-failure attributions was done to determine which of these three models had the most empirical support. Wording of attribution questions was also assessed. Results indicated only two consistent sex differences: Men make stronger ability attributions than women regardless of the outcome when informational attributional wording is used; and men attribute their successes and failures less to luck. Empirically, none of the models was well suppported.

In the early 1970s, Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971) proposed an attributional theory of achievement motivation which has become the basis for much of the subsequent research on achievement attributions. The original theory viewed the individual's affective and cognitive reactions to an achievement-oriented successs or failure as partially determined by the causal attributions used by the person to explain the cause of the outcome. Causal attributions were hypothesized to relate in systematic ways to feelings of pride and shame, to expectancies for one's future performance level, and to one's subsequent achievement behavior. Although the basic model has been modified somewhat as research has called into question some of the components of the model (e.g., Frieze, 1980; Weiner, 1979), the basic framework has remained, and is based on much empirical research.

Since this attributional model of achievement behavior was proposed many researchers have utilized it as a means for explaining sex differences in achievement behavior. It was thought that perhaps women and men might make systematically different attributions for their successes and failures, and that these

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differences might explain why women do not tend to achieve at the same levels as men in the work force, politics, or other fields traditionally associated with achievement in our society (Frieze, Parsons, Johnson, Ruble, & Zellman, 1978b).

The original Weiner et al. (1971) theory proposed four basic causes of achievement successses and failures: ability, effort, luck, and the ease or difficulty of the task. In spite of later reasearch which indicated that these are only a few of the many causal explanations people make when given an opportunity to state their causal explanations in their own words (e.g., Frieze, 1976; Weiner, 1979), much of the research has continued to utilize the original four causal categories. Perhaps one reason for this continued used of these four categories is that they are easily classifiable into a convenient 2 X 2 system. Within this framework, ability and effort can be viewed as causes within the person, or internal attributions, while luck and task difficulty are outside of the person, or external attributions. Additionally, these four causes can be classified as stable (continuing over time) or unstable, with ability and the task being relatively stable influences, and luck and effort being changeable or unstable.

As other causes were added to the theoretical model, the dimensional analysis was extended to three dimensions. In addition to the first dimensions of internality and stablity, a third dimension of controllability is often included in the causal analysis (Weiner, 1979). Controllability has to do with how much the person who is seen as the primary actor in the situation can control the causal factor operating. Thus, one has little control over ability (or mood or fatigue, other internal causes), but a good deal of control over effort.

These dimensions are important because the theory predicts certain consequences of making an attribution which derive from the underlying dimensional analysis of the causal explanation given. Theoretically, internal causes are expected to generate more affect, as do controllable causes. The model also predicts that stable attributions will lead one to expect the same outcomes in the future, while unstable attributions should lead one to expect changes in the future. These theoretical predictions have been supported to a large degree by empirical data (e.g., Weiner, Heckhausen, Meyer, & Cook, 1972; Weiner, 1979).

Attribution research assumes that a success or failure is attributed to one or more causes on the basis of available information about the situation and the personal characteristics of the individual. An important source of information is how well the person expected to do. On the basis of both theory and empirical data, it has been found that expected outcomes are attributed more to stable factors; unexpected outcomes are attributed more to unstable causes. Thus, initial expectancies are highly important to the attribution process (see Frieze, Fisher, Hanusa, McHugh, & Valle, 1978a, for more discussion of this issue).

THEORIES ABOUT SEX DIFFERENCES IN ATTRIBUTIONS

Researchers have proposed several models of sex differences in patterns of causal attributions. The three most cited models are outlined here in terms of

Table I. Assumptions About Women's Causal Attributions According to Three Theoretical Perspectives

	Theoretical perspective		
	Externality	Self-Derogation	Low Expectancy
Success			
Ability	Low	Low	Low
Effort	Low	Low	High
Task[a]	High	High	Low?
Luck	High	High	High
Failure			
Ability	Low	High	High
Effort	Low	High	Low
Task[a]	High	Low	High?
Luck	High	Low	Low

[a] Assuming stability of the task.

their predictions and the degree of empirical support each has received. In order to clarify the distinctions made by the three models, their major predictions are outlined in Table I.

General Externality

One of the first models proposed to explain female achievement suggested that women tend to be generally external in the attributions they make for success and failure (Feather, 1969; Simon & Feather, 1973). One of the explanations for this externality is that because women are higher in both fear of success and fear of failure, they withdraw from achievement situations all together. Given this withdrawal, it makes sense for women to see their outcomes as being caused by external factors. Such external attributions in turn serve to maintain lack of involvement in future tasks. Task ease or luck attributions for success also protect against fears of success by taking away any responsibility for the success and decreasing possible feelings of shame for failure (Frieze et al., 1978a; Simon & Feather, 1973).

Wiley, Crittenden, and Birg (1979) have also proposed an externality model from a sociological perspective. They argue that women, and other low status groups, tend to have less control over their destinies than those of higher status, and that this lack of control causes them to attribute the outcomes they receive more to external factors.

Self-Derogation

A second model takes a somewhat different perspective. In the Self-Derogation model, women are seen as attributing their successes to external factors, but they are believed to attribute their failures more to internal factors (e.g.,

Nicholls, 1975). This model of sex differences in attributions is based on the assumption that people attempt to maintain a set of consistent beliefs about themselves (e.g., Aronson & Mettee, 1968). If they have low self-esteem, they are willing to believe only negative information about themselves; if they have high self-esteem, they are willing to believe only positive information about themselves. (e.g., Fitch, 1970). Since women typically have low self-esteem in achievement settings (Frieze et al., 1978a), this need for consistency means that women accept negative information about themselves but discount positive information. Ickes and Layden (1978) and Heilman and Kram (1978) and others use this type of explanation for assumed sex differences in attributions.

Low Expectancy

The third major viewpoint about sex differences in attributional patterns is related to the idea that women have generally low expectations about achievement situations. Women generally do not expect to do as well as men when performing a large variety of academic, sports, motor skill, and other achievement-related tasks (see empirical work on this issue by Crandall, Note 1). According to the Low Expectancy theory, low expectations lead to unstable attributions for success and stable attributions for failure. These low expectancies are perpetuated, since successes are discounted and therefore do not lead to increased expectancies for future tasks even in cases where the woman did succeed. Given initially low expectations, failures are attributed more to stable factors, such as ability, and serve to further lower expectations (Deaux, 1976; Frieze et al., 1978a, 1978b; Jackaway, Note 2).

In a revision of this model, McHugh (Note 3) suggested that low expectancies are true for women only for tasks in which they have little direct experience. In general, if we have experience on the task, we tend to know how well we will do. However, if we have little experience, we will rely upon our generalized expectancies or stereotypic assumptions. Thus, it is predicted that the low expectancy will be greatest for women who are doing unfamiliar tasks (McHugh, Note 3). Deaux (1976) makes a similar prediction by pointing out that women will tend to have especially low expectations for tasks defined as "masculine."

ASSESSING THEORIES ABOUT SEX DIFFERENCES IN ATTRIBUTIONS

As the above overview suggests, the three major theories make quite different predictions about what the sex differences in attributions will be. All three models predict that women will tend not to attribute their successes to their high ability. Other than this one similarity, however, the predictions of the models differ.

In order to assess which, if any, of these theories is best supported by the literature, a meta-analysis (e.g., Glass, 1977; Rosenthal, 1978) was conducted of 21 published studies which addressed sex differences in ratings for causal attributions for success and failure situations using adult or adolescent subjects. Meta-analysis is a method of statistically combining the results of independent studies of a hypothesis to obtain an overall test of the hypothesis across all the studies. The studies are combined on the basis of a common metric; for our meta-analysis we chose the effect size index *d* (cf. Cohen, 1977). The *d* index describes, in standard deviation units, the distance between two experimental groups on the dependent variable. The studies included in the meta-analysis and their *d* indices for the hypotheses tested are listed in Tables II and III. When the results of a study were reported as nonsignificant and no test statistic was reported, *d* could not be calculated, and was assigned a value of zero (cf. Rosenthal, 1978).

In deciding how to empirically translate the theoretical positions listed in Table I into specific mathematical comparisons, we realized that each of the theories is somewhat ambiguous. Does saying that women make low attributions to ability for success and high attributions to ability for failure mean that a comparison should be made within one sex group across success and failure? Or is the hypothesis really that women make less use of ability attributions for success than men do, and more use of attributions to ability than men for failure? Either comparison would fit the outlines of the theory. Since this ambiguity has not to our knowledge been dealt with or even acknowledged in other research, we decided to make both types of comparisons.

Before doing the meta-analyses, we decided to consider one other variable. In other research, we (Whitley & Frieze, Note 4) have found that attributional findings depend upon the way in which the questions used to assess attributions are worded. Some studies directly ask how much each of the various attributional factors was a cause of the event. These are labeled as "causal wording" studies. Other research asks instead how much ability, effort, and luck the person had and how difficult the task was. Since this wording is asking for information about the situation and is only indirectly an assessment of the underlying cause of the performance, it is labeled as "informational wording" (see Frieze, Francis, & Hanusa, in press). Whitley and Frieze found that the strength of attributions for success and failure varied as a function of the attribution wording used. Since wording has been found to be important in other analyses, the sex difference analyses reported here were blocked on question wording to control for this additional source of effect size variance.

The effects of sex differences and question wording on causal attributions were assessed using two sets of 2 × 2 ANOVAs. In the first set, the *d* values for the effects of outcome on attributions to ability, effort, the task, and luck were analyzed with the sex of subject and question wording as independent variables. In the second set, the *d* values for the effects of sex of subject on the attributions

Table II. Effect Sizes (*d*) of Attributions for Success Compared to Attributions for Failure, by Sex of Subject

Study	Females					Males				
	N	Ability	Effort	Task	Luck	*N*	Ability	Effort	Task	Luck
Informational wording										
Bar-Tal & Frieze, 1977	60	+1.69	+.39	−2.07	+.80	60	+1.69	+.39	−2.07	+.80
Croke, Note 5	80	+.79	+.62	.00	+.79	80	+.79	+.62	.00	+.79
Deaux & Farris, 1977 (Study 1)	69	+1.25	.00	−1.31	−1.55	64	+1.25	.00	−1.31	−1.55
(Study 2)	113	+1.60	.00	−1.84	−1.52	96	+1.60	.00	−1.84	−1.52
Forsyth & Schlenker, 1977	18	+.69	+.66	−.41	+.93	104	+.69	+.66	−.41	.00
McHugh, Fisher, and Frieze, this issue	64	+3.63	+.28	−.64	+1.89	64	+3.27	+.23	+.36	+2.15
Miller, 1976	26	+2.36	+.91	−.69	−1.32	26	+2.36	+.91	−.69	−1.32
Pasquella, Mednick, & Murray, Note 6	133	+.56	+.44	−.12	.00	133	+.56	.00	.00	+.61
Causal wording										
Berg & Hyde, 1976	171	+.23	.00	.00	−.23	201	+.23	.00	.00	−.23
Feather & Simon, 1972	91	+.46	.00	.00	.00	109	+.46	.00	.00	.00
Feather & Simon, 1973	124	+.14	+.48	−.09	+.36	141	+.14	+.48	−.09	+.36
Goldberg & Evenbeck, 1976	48	+.42	.00	.00	.00	48	+.42	.00	.00	.00
Griffen, Combs, Land, & Combs, Note 7	74	+.38	+.46	−.23	+.02	40	+.38	+.46	−.23	+.02
Levine, Gillman, and Reis, this issue	97	.00	+.38	.00	.00	77	.00	+.38	.00	.00
McMahan, Note 8	63	+1.67	+.53	−.14	+.59	44	+1.51	+.35	+.61	+.87
Simon & Feather, 1973	77	+1.04	−.12	−.33	−.31	109	+1.04	−.12	.00	.00
Stephan, Rosenfield, & Stephan, 1976	72	+.44	+.44	.00	−.44	72	+.44	+.44	.00	−.44
Sweeney, Moreland, and Gruber, this issue	78	+1.11	+.85	−1.10	−.65	88	+.51	+.34	−.61	+.08
Teglasi, 1977	144	+1.13	+1.41	−.74	+.08	74	+.67	+1.08	.00	−.54
Viaene, Note 9	172	+.32	+.81	−.34	−.02	194	+.44	+.72	+.09	+.05
Wiegers & Frieze, 1977	44	+.57	−.13	−.14	−.55	47	+.54	−1.65	−.56	−.07
Wong, this issue	20	.00	+.69	−1.07	+1.24	20	.00	+.69	−1.07	+1.24

[a] "+" indicates stronger attributions to success, "−" stronger attributions to failure.

Table III. Effect Sizes (*d*) of Attributions by Men Compared to Attributions by Women, by Outcome

Study	Success					Failure				
	N	Ability	Effort	Task	Luck	*N*	Ability	Effort	Task	Luck
Informational wording										
Bar-Tal & Frieze, 1977	60	−.02	+.09	−.02	−.42	60	−.02	+.09	−.02	−.42
Croke, Note 5	80	.00	.00	.00	.00	80	.00	.00	.00	.00
Deaux & Farris, 1977 (Study 1)	67	+.34	.00	.00	−.61	67	+.34	.00	.00	−.61
(Study 2)	104	+.29	.00	.00	−.38	104	+.29	.00	.00	−.38
Forsyth & Schlenker, 1977	65	+.44	.00	.00	.00	57	+.44	.00	.00	.00
McHugh, Fisher, and Frieze, this issue	64	+.02	−.04	+.21	+.26	64	+.28	.00	.00	+.08
Miller, 1976	26	.00	.00	.00	.00	26	.00	.00	.00	.00
Pasquella et al., Note 6	172	+.42	.00	+.20	.00	94	+.42	+.31	+.20	.00
Causal wording										
Berg & Hyde, 1977	223	.00	.00	.00	.00	149	.00	.00	.00	.00
Feather & Simon, 1972	143	.00	.00	.00	.00	59	.00	.00	.00	.00
Feather & Simon, 1973	186	+.12	−.10	−.25	+.04	79	+.12	−.10	+.24	+.04
Goldberg & Evenbeck, 1976	48	.00	.00	.00	.00	48	.00	.00	.00	.00
Griffen, Combs, Land, & Combs, Note 7	53	.00	.00	.00	.00	62	.00	.00	.00	.00
Levine, Gillman, and Reis, this issue	87	+.53	−.33	.00	−.32	87	+.53	−.33	.00	−.32
McMahan, Note 8	41	+.87	+.05	+.47	+.05	66	+.50	+.25	−.31	−.30
Simon & Feather, 1973	130	.00	.00	.00	.00	56	.00	.00	.00	.00
Stephan et al., 1976	72	.00	.00	.00	.00	72	.00	.00	.00	.00
Sweeney, Moreland, and Gruber, this issue	109	−.19	−.17	+.03	+.01	57	+.37	+.48	−.08	−.80
Teglasi, 1977	109	−.05	−.05	−.52	−.13	108	−.38	+.26	+.16	−.31
Viaene, Note 9	179	+.08	−.15	−.18	−.39	180	.00	+.01	+.27	−.36
Wiegers & Frieze, 1977	45	−.12	−.35	+.08	−.60	46	−.14	+1.02	−.32	−.15
Wong, this issue	20	.00	.00	.00	−.85	20	.00	.00	.00	−.85

a "+" indicates stronger attributions by men, "−" stronger attributions by women.

Table IV. Mean Effect Sizes (d) for Success vs. Failure Outcomes by Sex of Subject and Question Wording Categories[a]

	Women		Men	
	Informational	Causal	Informational	Causal
Ability	+1.57	+.56	+1.53	+.48
Effort	+.41	+.41	+.35	+.23
Task	−.89	−.30	−.74	−.13
Luck	.00	+.01	.00	+.10

[a] "+" indicates stronger attributions to success, "−" stronger attributions to failure.

were analyzed with outcome and question wording as independent variables. All F tests had 1 and 40 degrees of freedom.

Table IV shows mean effect size estimates (d) for success compared to failure attributions within sex and question wording categories. In evaluating effect size estimates, Cohen (1977) suggests that $d = .2$ be considered the threshold of significance, indicating that the independent variable accounted for 1% of the variance in the dependent variable. He further suggests that $d = .2$ to .5 (6% of the variance) be considered a small effect size; $d = .5$ to .8 (14% of the variance), a moderate effect size; and $d > .8$, a large effect size.

As can be seen in Table IV, both men and women made strong informational attributions and moderate-to-small causal attributions to ability for success as opposed to failure. Effort attributions were somewhat stronger for success as compared to failure for both sexes. Failure was attributed to the task much more for causally worded attributions as compared to success. All mean d values for luck attributions approached zero. Informational attributions were stronger than causal attributions for ability ($F = 23.13$, $p < .001$) and for task attributions ($F = 10.64$, $p < .005$); there were no overall sex differences, other wording effects, or sex by question wording interactions which reached significance (all Fs < 1).

Table V outlines another procedure for testing for sex differences in causal attributions. Here the comparisons are made across the sexes within success and failure and question wording categories. As indicated in Table V, the only sex differences accounting for even 1% of attribution variance were that women had a slight tendency (mean $d = -.22$) to make stronger causally worded attributions for failure to luck than did men, and that men had a similar tendency (mean $d = .22$) to make stronger informational attributions for failure to ability. There was a marginal outcome effect ($F = 3.74$, $p < .10$) for effort attributions, indicating a slight tendency for men to make stronger effort attributions for failure than women (mean $d = .11$); but there was essentially no sex difference for success (mean $d = -.04$). There was also a marginal wording effect ($F = 2.77$, $p = .12$)

Table V. Mean Effect Sizes (*d*) for Male vs. Female Subjects by Outcome and Question Wording Categories

	Success		Failure	
	Informational	Causal	Informational	Causal
Ability	+.19	+.09	+.22	+.07
Effort	+.01	−.07	+.05	+.14
Task	+.05	−.03	+.02	.00
Luck	−.14	−.16	−.16	−.22

[a] "+" indicates stronger attributions by men, "−" stronger attributions by women.

for attributions to ability, indicating that informational attributions were somewhat more likely to result in sex differences than causally worded attributions (mean d = .20 and .08, respectively). There were no other significant main effects or interactions.

To summarize, although it does appear that women have a very slight tendency to attribute failure to luck more than do men, and men make somewhat stronger informational attributions to ability, there are no strongly supported sex differences in attributions, and none of the models described above were supported. It should also be noted that many of the studies surveyed did not find strong sex differences and those which did often contradicted one another. Sohn's article in this issue deals with this matter from another perspective, demonstrating that even in studies which do find sex differences, these "differences" may not account for much of the variance.

All this suggests that the search for general differences between men and women in the causal attributions they make may not be a fruitful one. Perhaps causal attributions are not as important as many have believed in explaining differences in male and female achievement behavior. Or, as discussed in the last article of this issue by McHugh, Fireze, and Hanusa, perhaps attributional research has failed to find significant results because important questions are still being ignored in explaining differences in male and female achievement behavior.

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