

# It Had to Be You (Not Me)! Women's Attributional Rationalization of Their Contribution to Successful Joint Work Outcomes

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Michelle C. Haynes<sup>1</sup> and Madeline E. Heilman<sup>2</sup>

## Abstract

We investigated the tendency of women to undervalue their contributions in collaborative contexts. Participants, who believed they were working with another study participant on a male sex-typed task, received positive feedback about the team's performance. Results indicated that women and men allocated credit for the joint success very differently. Women gave more credit to their male teammates and took less credit themselves unless their role in bringing about the performance outcome was irrefutably clear (Studies 1 and 2) or they were given explicit information about their likely task competence (Study 4). However, women did not credit themselves less when their teammate was female (Study 3). Together these studies demonstrate that women devalue their contributions to collaborative work, and that they do so by engaging in *attributional rationalization*, a process sparked by women's negative performance expectations and facilitated by source ambiguity and a satisfactory "other" to whom to allocate credit.

## Keywords

gender stereotypes, teams, self-perceptions, self-attribution, attributional rationalization

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Much has been written about the ways in which gender stereotypes affect how others evaluate women in the work domain (e.g., Glick & Fiske, 2007; Heilman & Eagly, 2008). Indeed, they have been repeatedly implicated in trying to explain the dearth of women at the highest echelons of the organizational ladder (see Koenig, Eagly, Mitchell, & Ristikari, 2011, for meta-analysis). These stereotypes also have been shown to affect how women view themselves (Chatard, Guimond, & Selimbegovic, 2007; Hentschel, Heilman, & Peus, 2012). Given the often-demonstrated detrimental consequences of gender stereotypes for performance expectations and competence perceptions, these findings suggest that women may be deleteriously affected by their own self-views. The studies reported here explore one way in which a gender-stereotyped self-view might affect women in work settings. The focus of the research is on women's undervaluing their contributions in collaborative contexts, attributing joint success not to themselves but to someone else.

In addition to furthering our understanding of how gender stereotypes affect self-directed attitudes and behaviors, the question of whether and under what conditions women take less credit for successful joint outcomes is of particular importance given the prevalence of group work in virtually every industry (Wisner & Feist, 2001). The organizational

literature is replete with examples of the benefits of teams for both organizations (Cohen & Ledford, 1994; Goodman, Devadad, & Griffith-Hughson, 1988; Kirkman & Rosen, 1999) and individuals (Cohen & Ledford, 1994; Cordery, Mueller, & Smith, 1991; Kirkman & Rosen, 1999). Yet, women's tendency to devalue their role in team successes is a potential unintended consequence of group work that may hinder women's ascent up the organizational ladder.

## Stereotypes and Performance Expectations

Key to understanding women's devaluation of their contributions to successful outcomes are negative performance expectations of the self. At the root of these expectations are gender stereotypes combined with conceptualizations of what is required to perform successfully in traditionally male domains. Men are thought to possess more agentic

<sup>1</sup>University of Massachusetts Lowell, USA

<sup>2</sup>New York University, USA

### Corresponding Author:

Michelle C. Haynes, Department of Psychology, University of Massachusetts Lowell, 113 Wilder Street, Lowell, MA 01854-3059, USA.  
Email: Michelle\_Haynes@uml.edu

characteristics, such as being forceful, decisive, and achievement oriented; women are thought to possess more communal characteristics, such as being understanding, caring, and relationship oriented (Bakan, 1966; Deaux & Lewis, 1984; Eagly & Karau, 2002; Eagly & Steffen, 1984; Heilman, 2001). These stereotypes are widely shared in our culture, by men and women alike (e.g., Banaji & Greenwald, 1994; Banaji, Hardin, & Rothman, 1993) and, as we have already noted, men and women subscribe to gender stereotype consistent views of themselves (e.g., Chatard et al., 2007).

There is reason to believe gender stereotypes have persisted despite societal changes. While individuals have become increasingly likely to ascribe more agentic characteristics to women over time, stereotypes of women and men do not yet reflect parity on this dimension (Diekmann & Eagly, 2000; Diekmann & Goodfriend, 2006). Moreover, although some findings have suggested a narrowing of the gap in women and men's self-views of agency (e.g., Abele, 2003; Twenge, 1997, 2001), others raise questions about the extent and nature of this tendency. For example, research suggests this convergence is only evident on some dimensions of agency (Spence & Buckner, 2000) and depends on how the measures are obtained (e.g., Biernat, Crandall, Young, Kobrynowicz, & Halpin, 1998; Greenwald & Farnham, 2000). Therefore, the current state of the literature suggests that gender stereotypes continue to influence perceptions of self.

Various theorists have argued that gender stereotypes together with conceptions about what is required to effectively handle particular types of tasks give rise to negative performance expectations for women (Eagly & Karau, 2002; Heilman, 1983, 2012; Heilman & Eagly, 2008). Most high status, high power, professional positions are thought to require agentic characteristics for success, characteristics that are congruent with the male stereotype but incongruent with the female stereotype (Eagly & Chin, 2010; Latu et al., 2011). As a result of this perceived "lack of fit," men are generally expected to perform successfully in these types of roles; women are expected to be less likely to do so.

These "fit models" (Eagly & Karau, 2002; Heilman, 1983, 2001) have been used primarily as a framework for understanding how and why *others* hold negative performance expectations of women working in male sex-typed jobs. However, there are research findings consistent with the idea that women derive performance expectations for *themselves* in the same way. Indeed, it has been documented that women hold lower performance expectations for themselves in areas that are traditionally considered to be male (Betz & Hackett, 1983; Beyer, 1990; Bridges, 1988; Deaux & Farris, 1977; Erkut, 1983; Feather & Simon, 1973; Mura, 1987; Sleeper & Nigro, 1987). Furthermore, there is evidence that women's negative performance expectations in male domains are a function of perceived "lack of fit," rather than global self-esteem (Dickerson & Taylor, 2000; Lenney, 1977; Vancouver & Ilgen, 1989). Importantly, these lowered

expectations have often been shown to occur despite actual performance level (Beyer, 1990).

### Consequences of Stereotype-Based Expectations and the Role of Ambiguity

Expectations have great impact because they tend to perpetuate themselves by inducing cognitive distortions that color perceptions (see Olson, Roese, & Zanna, 1996, for review). Stereotype-based performance expectations of women are no exception. They have consistently been shown to have detrimental effects on how women and their accomplishments are perceived by others, particularly when there is a lack of clarity about performance quality. Findings repeatedly indicate that identical work products are evaluated less favorably when they are said to have been completed by a woman rather than a man (see Davison & Burke, 2000, for a meta-analysis), and that women are viewed as less competent than men unless stellar performance quality is unequivocal and explicit (e.g., Heilman, Wallen, Fuchs, & Tamkins, 2004). These results have been found whether the evaluator is female or male.

While much less plentiful, there also is some evidence that stereotype-based expectations about the self can bias women's views of themselves and their accomplishments (e.g., Ehrlinger & Dunning, 2003). For example, it has been demonstrated that in the absence of performance feedback on a male sex-typed task, women working individually rated their task ability as poorly as if they had received negative feedback (Foschi, 1996). Therefore, it appears that women not only subscribe to the same gender stereotypes as do men, but the performance expectations these stereotypes induce may also have detrimental consequences for women's self-evaluations.

Ambiguity facilitates the perpetuation of stereotypes because it provides room for expectations to influence judgments. Thus, many have argued that the provision of clear, objective, and irrefutable information about performance excellence is the solution to quelling their insidious influence (see Heilman & Haynes, 2008, for review). However, establishing performance quality does not necessarily dispel all possible ambiguity. In earlier work, we explored another form of ambiguity that enables stereotype-based expectations to flourish, which we termed *source ambiguity*, that is, ambiguity about *who* is responsible for a particular performance outcome (Heilman & Haynes, 2005). In a series of studies it was demonstrated that even when it was patently clear that the outcome was successful, women's evaluations were negatively affected when it was unclear who was responsible for it.

In our 2005 paper, we examined whether source ambiguity affects how evaluators assign credit for successful outcomes of mixed-sex dyads working on male sex-typed tasks. We reasoned that collaborative work is likely to produce source ambiguity because group outcomes are often evaluated as a whole, thereby obscuring individual

contribution. We argued that the presence of source ambiguity provides evaluators with the opportunity to rationalize a woman's unexpected success—thereby maintaining stereotype-based expectations of her incompetence on such tasks—by attributing the success to her male teammate, a process we termed *attributional rationalization*. The data supported these ideas. It was also demonstrated that women were just as likely as men to act on the basis of gender stereotypic expectations when evaluating other women.

## Overview of the Current Research

The research presented here also uses a teamwork paradigm to investigate whether women engage in the process of attributional rationalization with respect to self-evaluations. More specifically, we were interested in the conditions under which women give their teammates more credit than they give themselves for successful joint outcomes. Given that women subscribe to gender stereotypes in how they see themselves thereby holding lower performance expectations in male sex-typed domains, and that they also have been shown to use attributional rationalization to explain away other women's work success, we propose that women will engage in attributional rationalization with respect to themselves. Specifically, we expected that women would attributionally rationalize their own involvement in successful joint outcomes unless the source ambiguity typically inherent in group situations is undercut, there is no reasonable attributional alternative, or their negative stereotype-based expectations of themselves are disconfirmed. These ideas were tested in a series of four studies.

## Study I

The purpose of the first study was to demonstrate that women engage in attributional rationalization when working with men on male sex-typed tasks. We furthermore sought to demonstrate that this is a result of negative stereotype-based expectations of the self and the source ambiguity that characterizes group work situations.

Male and female participants were led to believe they were working with another study participant of the opposite sex on a male sex-typed task. All participants received feedback that the joint outcome was successful. In addition, participants received positive feedback about specific performance dimensions, with half of them getting feedback about the performance of the team as a whole (high source ambiguity), and half of them getting feedback about their own individual performance (low source ambiguity).

According to our ideas, attributional rationalization of one's own success is prompted by negative self-expectations about performance and is facilitated by the presence of source ambiguity. If negative stereotype-based self-expectations result from the perceived lack of fit between one's attributes and the task requirements, when the task is male sex-typed,

only women should hold negative expectations for their performance. Therefore, women should be more likely to engage in attributional rationalization than men. But whether it actually occurs should be affected by the degree of source ambiguity, occurring only when it is high—in this case, only when group rather than individual feedback is provided. Taken together, we hypothesized that when working in a mixed-sex dyad on a male sex-typed task whose outcome has been successful:

*Hypothesis 1a:* Women will engage in attributional rationalization more than men when group feedback is provided but not when individual feedback is provided.

In addition, we expected type of feedback to affect women more than men because the degree of source ambiguity affects the occurrence of attributional rationalization only when negative performance expectations exist:

*Hypothesis 1b:* Women, but not men, will engage in attributional rationalization more when provided with group feedback than when provided with individual feedback.

## Method

*Participants and Study Design.* Thirty-four male and 36 female participants were recruited from an introductory psychology class to participate in this experiment for partial course credit. Participants ranged in age from 18 to 28,  $M = 19.30$ ,  $SD = 1.59$ . The study design was  $2 \times 2$  between-subjects factorial, with sex of participant (male, female) and type of feedback (individual, group) as the two independent variables. Participants were randomly assigned to one of two feedback conditions.

*Procedure.* Participants were told that the study was part of a program of research designed to explore the merits of sharing work responsibilities in situations where people work remotely. Participants were led to believe that they were randomly assigned to work with another study participant on a task for which they were jointly responsible for the outcome. They were told that although they would not be actively discussing the task with their teammates, they would be working on the same task and the best of each of their work would be compiled into an overall rating for their team's performance. They also were told that on the basis of their joint work they would be assigned a number of lottery tickets to win US\$25; the better the team outcome, the more tickets they would receive. In reality, all participants had an equal chance of winning the lottery.

Before participants began working on the task, they completed a "participant background information sheet," which asked for information such as the participant's first name, age, and year in school. We then collected these forms and

ostensibly exchanged them between teammates so that participants could “get an idea of who [they were] paired with.” In actuality, there was no other teammate; rather, participants received a standardized, prewritten information sheet completed by a person of the opposite sex.

Participants were then assigned to a male sex-typed role (managing supervisor at an investment company), which required them to prioritize and make decisions regarding how to handle a series of memos, emails, and so on. The task they worked on was described as a component of the *Manager Performance Predictor* (MPP) test, “one of the most established measures on the market to assess managerial potential by measuring traits critical to a manager’s success.” In addition to the task itself, participants received a job description for managing supervisor, including a section that provided information regarding the job’s demographic characteristics. Embedded in this section was that 86% of individuals occupying this position were men.

Participants worked on the task for 20 min, after which their work was collected and presumably scored. Participants then received a task feedback form. In all cases, the form indicated an excellent overall team outcome using a numeric rating—71/75. The feedback form also included ratings of four discrete tasks associated with successful task completion (e.g., quality of proposed action) as well as an aggregate of the ratings on these discrete tasks, all done on a 5-point rating scale ranging from “poor” to “excellent.” The discrete tasks always had two “very good” ratings and two “excellent” ratings (there were two different configurations of ratings used), but the aggregate rating was in all cases “excellent.” Once the feedback had been distributed, participants were asked to complete a questionnaire. They were then thoroughly debriefed, the study explained, and their questions answered.

**Type of Performance Feedback Manipulation.** The designated target on the task feedback form determined whether the information about the performance on the discrete tasks was about the individual participant or about the team. The form was labeled either as Individual Assessment Form, with only the participant’s name listed, or as Group Assessment Form, listing the names of the participant and the supposed teammate. The feedback factors and ratings were identical in both versions.

#### Dependent Variables

**Perceived relative task contribution.** Given our central interest in the amount of credit individuals gave themselves relative to their teammate, we used discrepancy scores as our dependent measure. A composite scale was created by averaging discrepancy scores on three questions. Each discrepancy score was created by subtracting the rating of the teammate from the rating of self. The questions were as follows: (a) “How would you rate your individual (your teammate’s) performance in this task?” (*very poor* = 1 and *excellent* = 9), (b) “To what extent

do you think the final joint outcome has been influenced by the quality of your (your teammate’s) work?” (*very poor* = 1 and *excellent* = 9), and (c) “To what extent do you think your individual (your teammate’s) performance contributed to the team’s joint performance outcome?” (*very poor* = 1 and *excellent* = 9). The three difference scores were averaged to create a relative task contribution scale. The coefficient alpha for this scale was .81.

Importantly, the valence of this measure is meaningful: A positive discrepancy score indicates a score favoring self, a score of zero indicates no difference in rating between self and other, and a negative score indicates a score favoring teammate. In other words, a negative score is indicative of attributional rationalization, giving one’s teammate more credit than oneself.

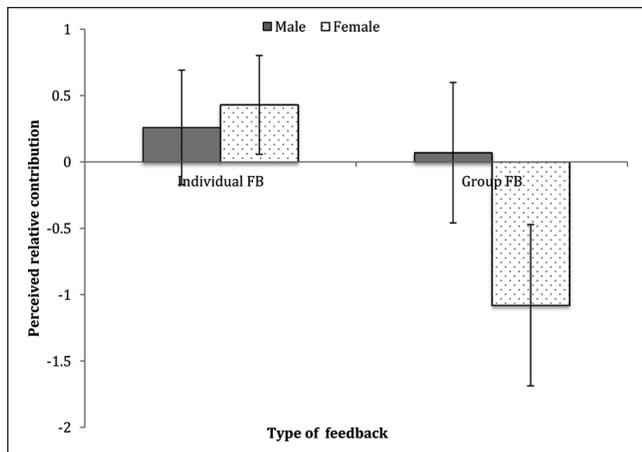
**Choice of better performer.** Due to the nature of the task and its scoring, the participant who performed better was also the one who made the larger contribution to the successful outcome. We therefore asked a direct question about who the participant thought had been the better performer: “If you had to choose, who do you think performed better on this task?” (*me, my teammate*).<sup>1</sup>

## Results

**Initial Analyses.** Responses to a series of questions indicated that the manipulations were successful. All but two participants correctly identified the feedback they had received as “Individual Feedback” or “Group Feedback,” and all participants correctly reported their teammate’s name, indicating that they were aware of his or her sex. Also, participants’ ratings of “How positive (or negative) was [the] feedback?” (*negative* = 1 and *positive* = 9) suggested that participants correctly interpreted the feedback about the team outcome as being highly positive,  $M = 8.26$ ,  $SD = 0.58$ ; this interpretation did not differ by condition, all  $F(1, 66) < 0.2$ .

**Analysis Strategy.** We conducted two sets of analyses on the perceived relative contribution measure. We used a traditional ANOVA framework, followed by least significant difference (LSD) intercell comparisons ( $p < .05$ ) to test our specific hypotheses about the pattern of means across experimental conditions. In addition, we conducted a series of one-sample  $t$  tests to determine whether the discrepancy score (rating of self minus rating of teammate) in each condition significantly differed from zero. To test our hypotheses with respect to the choice of better performer measure, we used a series of chi-square analyses. The analysis strategy was the same for each of the four studies.

**Perceived Relative Contribution.** Results of the ANOVA revealed a significant main effect for type of feedback,  $F(1, 66) = 11.26$ ,  $p < .01$  and a marginally significant main effect



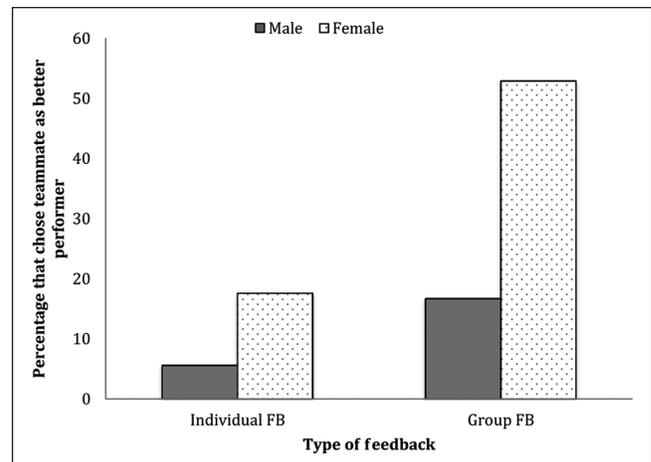
**Figure 1.** Study 1: Perceived relative contribution.

Note: A positive discrepancy score indicates a score favoring self, a score of zero indicates no difference in rating between self and other, and a negative score indicates a score favoring teammate. Error bars represent 95% CIs ( $1.96 \times SE$ ).

for sex of participant  $F(1, 66) = 3.77, p = .06$ . In addition, the Sex of Participant  $\times$  Type of Feedback interaction was significant,  $F(1, 66) = 6.87, p = .01$ . Subsequent intercell comparisons revealed that, consistent with our first hypothesis, women devalued their relative contribution more than men when provided with group feedback but not when provided with individual feedback. Consistent with our second hypothesis, type of performance information affected only women's perceived relative contribution, not men's. The pattern of means is depicted in Figure 1.

Results from the individual  $t$  tests further elaborated these findings. As expected, it was only women in the group feedback condition whose discrepancy scores were significantly less than zero, indicating that they engaged in attributional rationalization, rating their own contribution significantly less favorably than their teammates,  $t(16) = -3.48, p < .01$ . Individuals in the three other conditions did not undervalue their contributions relative to their teammate; indeed, the discrepancy score of women in the individual feedback condition was significantly higher than zero, indicating that they rated their contribution more favorably than their teammates',  $t(16) = 2.26, p = .04$ . The discrepancy scores of men in the group and individual feedback conditions did not differ from zero,  $t(17) = 0.27, p = .79$ , and  $t(17) = 1.16, p = .26$ , respectively.

**Choice of Better Performer.** Results of the chi-square analyses yielded additional support for our hypotheses. Figure 2 displays the percentage of participants that chose their teammate as the better performer. Consistent with our first hypothesis, women were significantly more likely to choose their teammate as the better performer than were men in the group feedback conditions,  $\chi^2(1) = 5.28, p = .02$ . This, however, was not the case in the individual feedback conditions,



**Figure 2.** Study 1: Choice of the better performer.

Percentage of participants that chose their teammate (rather than self).

where women and men did not differ in their choices—they were both unlikely to choose their teammate as the better performer,  $\chi^2(1) = 1.31, p = .25$ . In addition, as predicted by our second hypothesis, women who received group feedback chose their teammate significantly more often as the better performer than women who received individual feedback,  $\chi^2(1) = 4.80, p = .03$ , whereas men were always less likely to choose their teammate as the better performer, irrespective of type of feedback,  $\chi^2(1) = 1.17, p = .28$ .

## Discussion

The data support the idea that despite a successful outcome, when women have worked with men on a male sex-typed task, they engage in attributional rationalization when there is ambiguity about who is responsible for the final product. Unless feedback about individual performance was provided, women were more likely than men to devalue their relative contribution and to choose their teammate as the better performer. Moreover, this difference was clearly due to women devaluing their relative task contribution when there was source ambiguity and not due to men overvaluing theirs.

Not only was the pattern of differences in ratings and choices across conditions consistent with our predictions, but the most direct indicator of attributional rationalization—the negative discrepancy between credit given to self compared with teammate—was statistically significant only in the one condition in which we expected it. Specifically, it was only women who received group feedback who gave their teammate more credit for the outcome than they gave themselves. Individuals in each of the other three conditions valued their own contribution just as highly as their teammates', if not more highly.

These results also provide support for our reasoning regarding the process of attributional rationalization. When the outcome on a male sex-typed task is successful, only

women should experience a discrepancy between self-expectations and successful outcomes leading to attempts to rationalize the unexpected outcome. Moreover, finding that women took less credit than they gave men for the joint outcome only when there was ambiguity about the source of the successful outcome lends support to the notion that attributional rationalization is enabled by lack of information about individual contribution.

In Study 1, individual feedback was shown to work against the source ambiguity typically inherent in group work. However, the nature of the task itself may also provide information about individual contribution. Study 2 was designed to further clarify the source ambiguity construct. Given that Study 1 established that it is only women, not men, in a mixed-sex dyad who are likely to engage in attributional rationalization when having succeeded on a male sex-typed task, Study 2 involved only female participants.

## Study 2

The purpose of Study 2 was to demonstrate that it is indeed source ambiguity—lack of information about individual contribution to a joint success—that facilitates women's engagement in attributional rationalization and not group feedback per se. Just as individual performance feedback can provide information about individual task accomplishment in a group situation, so can the task structure. When this is the case, and source ambiguity is precluded, women should be unlikely to devalue their contribution to the task.

To test this idea, we manipulated how the task was presumably divided and scored. Half of the participants were led to believe that, as in Study 1, both teammates would work on the full task and that the best of each person's work would be taken to produce an overall score. The other half of the participants were led to believe that the task had been divided into two different parts, that each teammate would work on one part, and their work would be added together to produce the final joint outcome. Again, the task outcome was always said to be successful. When both participants worked on the full task, source ambiguity was high as either participant alone could have conceivably been responsible for the successful joint outcome. However, when participants worked on different parts of the task, source ambiguity was low because the task could not have been completed successfully without excellent work from each of them. As in Study 1, half received group feedback and half received individual feedback.

We expected that attributional rationalization would be restricted to the one condition in which source ambiguity was high: women working on the full task who received group feedback. We did not expect women to rate their teammates more favorably than they rated themselves when individual feedback was provided nor when group feedback was provided and participants had worked on the divided task. As such, we hypothesized that when working in a mixed-sex dyad that has been successful:

*Hypothesis 2:* Women will engage in attributional rationalization only when they receive group rather than individual feedback and work on the full rather than the divided task.

## Method

*Participants and Study Design.* Sixty-four female participants, ranging in age from 18 to 25,  $M = 19.45$ ,  $SD = 1.18$ , were recruited from an introductory psychology class to participate in this experiment for partial course credit. All female participants were led to believe they were paired with a male study participant. The study design was a  $2 \times 2$  between-subjects factorial, with the structure of task (full, divided) and type of feedback (individual, group) as the independent variables. Participants were randomly assigned to one of four conditions.

*Procedure.* The procedure was identical to that used in Study 1 except for the task type manipulation.

### Independent Variables

*Structure of task.* Structure of task was manipulated in the instruction sheet that accompanied the task. The instructions were the same for both task conditions except for the section detailing how the task had been distributed between teammates and how it would be scored.

In the full task condition, participants read

You and your teammate will each get to work on the complete task; that is, you will work on 10 items and your teammate will work on the same 10 items . . . The best of your work on the task and the best of your teammates' work will be compiled into an overall rating of your team's performance.

In the divided task condition, participants read

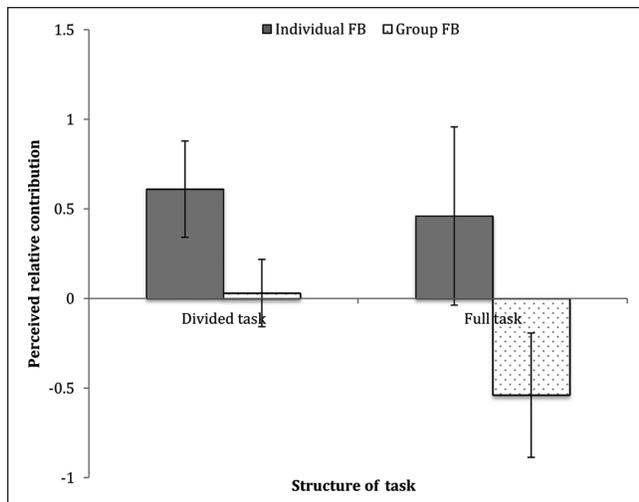
The task has been divided into two parts, each designed to be equivalent in length and difficulty. So, you and your teammate will each get to work on half of the task; that is you will work on 10 items and your teammate will work on the other 10 items . . . Your work on half of the task will be added to your teammate's work on the other half of the task and together they will be combined into an overall rating of your team's performance.

*Type of performance feedback.* We used the same feedback manipulation as in Study 1. Half of the participants got individual feedback and the other half got group feedback.

*Dependent Variables.* The dependent measures were once again perceived relative contribution (coefficient  $\alpha = .51$ ) and choice of better performer.

## Results

*Initial Analyses.* All but one participant correctly indicated whether the feedback information they had received was



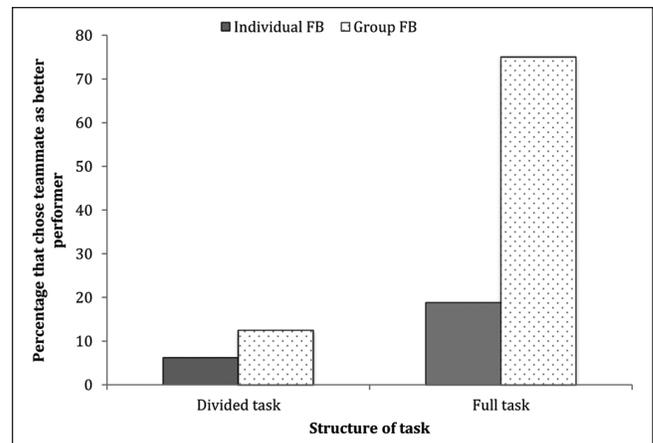
**Figure 3.** Study 2: Perceived relative contribution.

Note: A positive discrepancy score indicates a score favoring self, a score of zero indicates no difference in rating between self and other, and a negative score indicates a score favoring teammate. Error bars represent 95% CIs ( $1.96 \times SE$ ).

“Individual Feedback” or “Group Feedback.” All participants correctly identified how the task was distributed between themselves and their teammates, checking that they either “both worked on the same, complete task” or “each worked on different halves of the task.” Finally, participants’ reports of their teammates’ names indicated they all were aware they were paired with a male teammate and their ratings of the feedback (*negative* = 1 and *positive* = 9) indicated they correctly interpreted it as being highly positive,  $M = 8.27$ ,  $SD = 0.80$ ; this interpretation did not differ by condition, all  $F_s(1, 64) < 2.13$ .

**Perceived Relative Contribution.** The ANOVA yielded a significant main effect for type of feedback,  $F(1, 60) = 20.75$ ,  $p < .01$ , and a marginally significant main effect for structure of task,  $F(1, 60) = 3.81$ ,  $p = .06$ . The Type of Feedback  $\times$  Structure of Task interaction was not significant,  $F(1, 60) = 1.26$ ,  $p = .27$ . Figure 3 displays the means. Given our specific prediction about the pattern of data, we conducted intercell comparisons to test our hypotheses. As expected, women were significantly more likely to devalue their relative task contribution when group feedback was provided and they were working on the full task compared with when they were working on the divided task, or when they received individual feedback.

Results from the individual  $t$  tests testing whether each discrepancy score (self minus teammate) significantly differed from zero provided further support for our hypothesis. It was only women working on the full task who received group feedback who perceived their contribution significantly less favorably than their teammates’,  $t(15) = -3.06$ ,  $p < .01$ . Women in the three other conditions did not undervalue their contribution relative to their teammate. Women who received group feedback but worked on the divided task



**Figure 4.** Study 2: Choice of the better performer.

Note: Percentage of participants that chose their teammate (rather than self).

rated their contribution and their teammates’ contribution equally,  $t(15) = 0$ ,  $p = 1$ , as did women who worked on the full task and received individual feedback,  $t(15) = 1.80$ ,  $p = .09$ . Women who worked on the divided task and received individual feedback rated their contribution more favorably than their teammates’  $t(15) = 4.42$ ,  $p < .01$ .

**Choice of the Better Performer.** Results of the chi-square analyses demonstrated that women provided with group feedback were significantly more likely to choose their teammate as the better performer only when they worked on the full task, but not when they worked on the divided task,  $\chi^2(1) = 8.54$ ,  $p = .01$ . When women were provided with individual feedback, they did not differ in their assessments of who performed better, irrespective of the structure of task,  $\chi^2(1) = 1.19$ ,  $p = .28$ ; they were always less likely to choose their teammate as the better performer. Figure 4 displays the percentage of participants that chose their teammate across conditions.

## Discussion

The data provided support for our hypothesis. It was only when source ambiguity was high that women engaged in attributional rationalization. When given individual feedback, or a task that made individual contribution to success apparent, attributional rationalization was not evident in any of our measures. This makes clear that source ambiguity is a contextual event and, while typically present, not necessarily inherent in collaborative work.

Thus far, we have demonstrated that when women work with men, women devalue their contribution unless there is explicit information about individual contribution that precludes them from doing so. We have argued that source ambiguity provides women with the opportunity to rationalize their unexpected successes on male sex-typed tasks by attributing the credit to someone for whom the success is expected—their

male teammate. However, what if a woman is working with another person to whom it is not reasonable to attribute the success? Study 3 was designed to address this question.

### Study 3

Study 3 sought to test the proposition that a woman will only rationalize her unexpected involvement in a successful joint outcome if there is someone to whom it can be reasonably attributed. Specifically, even if other conditions are ripe for it—negative self-performance expectations and source ambiguity—a woman will only engage in attributional rationalization if the outcome is consistent with her expectations of her teammate.

We tested this idea by manipulating the sex of the participants' teammate. Female participants were led to believe they were working on a joint task and received feedback indicating performance success, with half receiving group feedback and half receiving individual feedback. However, half of the participants were led to believe they were paired with a male teammate; half were led to believe they were paired with a female teammate.

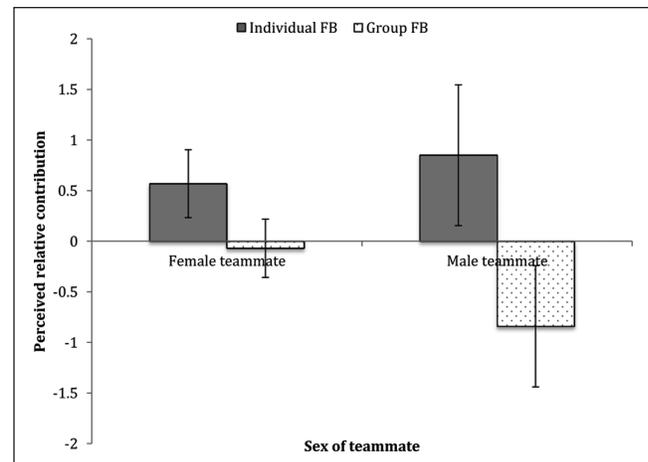
We expected attributional rationalization would only occur in the one condition in which there was source ambiguity and another person to whom it made sense to attribute the success. If performance expectations are indeed stereotype-driven, a successful outcome on a male sex-typed task is likely to be expected only for a male teammate, not for a female teammate. As such, a female teammate should not provide a plausible alternative explanation for the successful outcome. Therefore, even in the presence of source ambiguity, working with a female teammate should preclude women from giving more credit to their teammates than to themselves. As such, we hypothesized:

*Hypothesis 3:* When women receive group feedback as opposed to individual feedback, they will engage in attributional rationalization when they work with men but not when they work with women.

### Method

**Participants and Study Design.** One hundred female participants were recruited from an introductory psychology class to participate in this experiment for partial course credit. Participants ranged in age in from 17 to 22,  $M = 19.08$ ,  $SD = 0.87$ . The study design was a  $2 \times 2$  between-subjects factorial, with sex of teammate (male, female) and type of feedback (individual, group) as the two independent variables. Participants were randomly assigned to one of four conditions.

**Procedure.** The procedure was similar to that used in Study 1 but the sex of teammate was varied such that half of the women were led to believe they were working with a man;



**Figure 5.** Study 3: Perceived relative contribution.

Note: A positive discrepancy score indicates a score favoring self, a score of zero indicates no difference in rating between self and other, and a negative score indicates a score favoring teammate. Error bars represent 95% CIs ( $1.96 \times SE$ ).

half of the women were led to believe they were working with another woman.

### Independent Variables

**Sex of teammate.** Sex of teammate was manipulated via the first name on the background information sheet participants received about their teammate when they exchanged information at the beginning of the task.

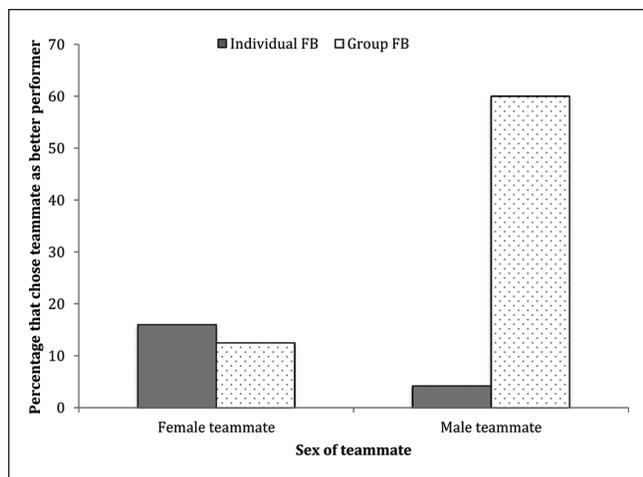
**Type of performance feedback.** Feedback manipulation was the same as that used in Studies 1 and 2.

**Dependent Variables.** As in Studies 1 and 2, the dependent variables were perceived relative contribution, coefficient alpha = .82, and the choice of better performer.

### Results

**Initial Analyses.** Participants' reports of the name of their teammates indicated that all of them were aware of the sex of their teammate and all participants correctly indicated whether the feedback information they had received was "Individual Feedback" or "Group Feedback." In addition, participants' ratings of the feedback (*negative* = 1 and *positive* = 9) indicated that participants correctly interpreted the feedback as being positive,  $M = 8.34$ ,  $SD = 1.56$ , and this interpretation did not differ by condition, all  $F_s(1, 95) < 0.43$ .

**Perceived Relative Contribution.** The ANOVA results revealed a significant main effect for type of feedback,  $F(1, 95) = 19.65$ ,  $p < .01$ . In addition, the Sex of Participant  $\times$  Type of Feedback interaction was significant,  $F(1, 95) = 4.12$ ,  $p = .05$ . Figure 5 displays the pattern of means. Subsequent intercell contrasts revealed that, as expected, women



**Figure 6.** Study 3: Choice of the better performer. Percentage of participants that chose their teammate (rather than self).

devalued their relative contribution more when they received group feedback than when they received individual feedback only when they worked with men but not when they worked with women.

Individual  $t$  tests testing whether each discrepancy score (self minus teammate) significantly differed from zero confirmed that it was only women working with men who received group feedback who rated their own contribution significantly less favorably than that of their teammate,  $t(24) = -2.75, p = .01$ . Individuals in the three other conditions did not undervalue their contributions relative to their teammate. Women working with women who received group feedback did not rate their performance and their teammates' performance significantly differently,  $t(23) = -0.47, p = .64$ . Moreover, women in the individual feedback conditions rated their performance better than their teammates, when working with a female teammate,  $t(24) = 2.40, p = .02$  and when working with a male teammate,  $t(24) = 3.28, p < .01$ .

**Choice of the Better Performer.** A similar pattern of results emerged for choice of better performer. Chi-square analyses indicated that women working with men chose their teammates significantly more often as the better performer when they received group feedback but not when they received individual feedback,  $\chi^2(1) = 17.36, p < .01$ . However, when women worked with women, they were similarly unlikely to choose their teammate as the better performer, regardless of feedback type,  $\chi^2(1) = 0.12, p = .73$ . Figure 6 displays the percentage of participants that chose their teammate as the better performer.

## Discussion

The results provide support for our hypothesis. Even when there was source ambiguity, women engaged in attributional rationalization only when they worked with men; when

paired with a woman, it was not evident in any of our measures. These results provide further evidence for the process we posited. While the presence of source ambiguity creates the opportunity for women to rationalize their own unexpected success, it only occurs when there is another person to whom the success can be reasonably attributed. The results demonstrate that women do not always derogate their unexpected accomplishments when their individual contribution is unclear; rather, they only do so when they are working with someone for whom they have higher expectations on the task than they have for themselves. This finding underscores the importance of expectations. Inconsistency between the successful outcome and expectations of self is necessary but not sufficient to produce attributional rationalization; there also has to be consistency between the successful outcome and one's expectations of the other. Furthermore, because women were found to engage in attributional rationalization only when they worked with men, the data lend additional support to the notion that gender stereotypes give rise to differential performance expectations of self and other.

## Study 4

Throughout this series of studies, we have argued that negative self-expectations are key to the undervaluation of task contribution. As such, we have predicted that in male sex-typed tasks, only women will engage in attributional rationalization because they, not men, hold negative performance expectations of the self. Indeed, this was the basis of our reasoning in Study 1. In Study 4, we sought to examine the role of self-expectations directly by explicitly manipulating them.

We once again brought male and female participants into the lab and led them to believe they were working with another study participant of the opposite sex on a joint task. However, unlike Study 1, they completed a pretest at the beginning of the research session. Participants were told that their performance on the pretest would be a good predictor of their performance on a subsequent group task. Half of the participants received positive feedback regarding their pretest performance; the other half did not receive any pretest feedback. Participants then worked on the group task and all received successful group performance feedback.

We reasoned that if men and women were given cause to have similar performance expectations for the joint task, they would no longer differ with respect to how they perceived their relative contribution to a successful group outcome. As such, we expected that, when working in a mixed-sex dyad that has been successful:

*Hypothesis 4:* Women will engage in attributional rationalization more than men in the absence of pretest feedback but not when positive pretest feedback is provided.

## Method

**Participants and Study Design.** Forty-four males and 52 females, ages 18 to 22, ( $M = 19.29$ ,  $SD = 1.09$ ), were recruited from an introductory psychology class to participate in this experiment for partial course credit. The study design was a  $2 \times 2$  between-subjects factorial, with sex of participant (male, female) and pretest feedback (positive, none) as the two independent variables. Participants were randomly assigned to one of two pretest feedback conditions.

**Procedure.** After providing consent, participants were asked to complete the *Managerial Effectiveness Skills Inventory* (MESI-II), a one-page questionnaire that was ostensibly a measure of managerial skills. We told participants it was part of an ongoing study to establish the scale as a reliable measure of managerial aptitude, and thus far, it was a very good indicator of performance on managerial tasks, including the one they would be working on shortly. In reality, the MESI-II was a bogus, one-page measure consisting of 19 true/false items, designed to have high face validity. Once participants were done, the MESI-II was collected and presumably scored. Half of the participants received positive feedback on the MESI-II pretest along with the packet of materials for the joint task; the other half did not receive any feedback on their MESI-II performance, and only received the materials for the joint task.

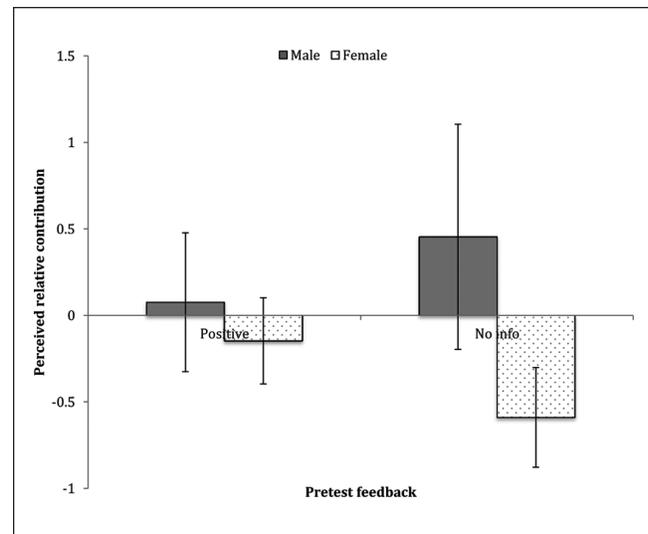
**Pretest Feedback Manipulation.** Participants who received positive feedback were provided with a MESI-II feedback form that included the participant's name, the percentage correct on the MESI-II (89.4%), and an indication of having scored in the 95th population percentile. Participants in the control condition (no pretest feedback) did not receive a MESI-II feedback form.

**Dependent Variables.** The dependent variables were perceived relative contribution, coefficient alpha = .83, and choice of the better performer.

## Results

**Initial Analyses.** Participants in the positive pretest feedback condition rated their performance on the MESI-II "the scale you completed at the beginning of this experimental session?" (*very poor* = 1 and *excellent* = 9) positively,  $M = 7.54$ ,  $SD = 1.05$ . All participants correctly indicated that the feedback they had received about the joint task was "Group Feedback" and reported the correct name of their teammate suggesting they were aware of the sex of their teammate. Finally, participants correctly interpreted the group feedback on the task as being positive,  $M = 8.32$ ,  $SD = 0.76$ , and this did not differ by the condition, all  $F(1, 92) < 0.98$ .

**Perceived Relative Contribution.** The ANOVA results on perceived relative contribution revealed a significant main effect



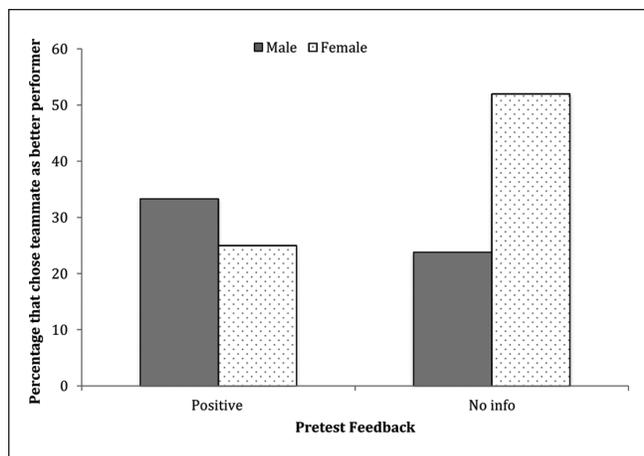
**Figure 7.** Study 4: Perceived relative contribution.

Note: CI = confidence interval. A positive discrepancy score indicates a score favoring self, a score of zero indicates no difference in rating between self and other, and a negative score indicates a score favoring teammate. Error bars represent 95% CIs ( $1.96 \times SE$ ).

for sex of participant,  $F(1, 92) = 9.57$ ,  $p = .002$ . In addition, the Sex of Participant  $\times$  Pretest Feedback interaction was significant,  $F(1, 92) = 4.02$ ,  $p = .05$ . Figure 7 displays the pattern of means. Results of intercell contrasts were consistent with our hypothesis: Women were significantly more likely than men to devalue their relative contribution in the absence of pretest feedback, but men and women did not differ in their perceived relative contribution when provided with positive pretest feedback.

Analyses testing whether the discrepancy scores (self minus teammate) significantly differed from zero provided additional support for our hypothesis. It was only women in the absence of pretest feedback who rated their contribution significantly less favorably than their teammates',  $t(25) = -4.14$ ,  $p < .01$ . Individuals in the three other conditions did not undervalue their contributions relative to their teammate. Rather, participants in each of the other conditions rated their teammates' contribution no differently than their own; none of the condition means were significantly different from zero,  $t(21) = 1.43$ ,  $p = .17$ ;  $t(25) = -1.13$ ,  $p = .27$ ;  $t(21) = 0.38$ ,  $p = .71$  for male/no pretest feedback, female/positive pretest feedback, male/positive pretest feedback, respectively.

**Choice of Better Performer.** Chi-square analyses indicated that, as predicted, women chose their teammate as the better performer significantly more often than men when there was no pretest feedback,  $\chi^2(1) = 3.88$ ,  $p = .05$ , but not when positive test feedback was provided,  $\chi^2(1) = 0.86$ ,  $p = .36$ . Figure 8 displays the percentage of participants that chose their teammate as the better performer.



**Figure 8.** Study 4: Choice of the better performer. Percentage of participants that chose their teammate (rather than self).

## Discussion

The results of Study 4 provide support for our hypothesis. Whereas in the absence of pretest feedback women were significantly more likely than men to take less credit for the joint outcome, when provided with positive pretest feedback women and men no longer differed in their tendency to self-derogate relative to their teammate. These results are consistent with our ideas about the importance of self-expectations. We have argued that men and women's differential proclivity to engage in attributional rationalization in the presence of source ambiguity demonstrated in Study 1, and again here in Study 4, is a function of the different baseline expectations that men and women have about their ability to perform on male sex-typed tasks. Finding that leveling of self-expectations eliminated the difference in the way men and women distributed credit for the successful joint outcome lends strong support to our ideas. If women's negative self-expectations are undercut, then there should no longer be a discrepancy between expectations and success, and therefore no need to resolve this discrepancy by attributing the success to someone else.

## General Discussion

Taken together, these results suggest that working together with men in traditionally male domains can prompt women to engage in attributional rationalization, even when a work outcome is highly favorable. When working jointly with men, unless there was clarity about their individual contribution thereby eliminating source ambiguity (Studies 1 and 2), or unless their negative performance expectations of themselves were superseded (Study 4), women gave more credit to their teammates than themselves for successful work outcomes. Moreover, it was only when women worked with men, not women (Study 3), that this undervaluation of their contribution occurred.

## Theoretical Implications and Future Research

Our findings suggest that the reach of stereotype-based expectations is far. Not only do they have the power to influence the evaluations of others, but they also appear to influence women's evaluations of themselves. These results are especially noteworthy given recent findings suggesting that women may be increasingly likely to characterize themselves in agentic terms; evidently changes in women's tendency to self-stereotype have not been decisive enough to preclude them from forming negative performance expectations when working on male sex-typed tasks. Our findings additionally suggest that attributional rationalization is a broader construct than originally conceptualized (Heilman & Haynes, 2005). Evidently, attributional rationalization is used as a way to resolve inconsistencies between expectations and unexpected outcomes whether those expectations are held of others or of oneself.

Our findings seem to contradict the often documented self-enhancement biases individuals display when evaluating the self (e.g., Brown, 1986, see Gaertner, Sedikides, Vevea, & Iuzzini, 2002, for meta-analysis). It appears that in this case, the tendency to maintain stereotype-based expectations may trump the ego-enhancing tendency to evaluate one's self more favorably than one's teammate when involved in successful group outcomes (Sedikides, Campbell, Reeder, & Elliot, 1998). But it should be noted that women did not always defer credit to their teammate. On the contrary, when attributional rationalization was blocked because individual contribution was clear or because women were working with a female teammate, women repeatedly evaluated themselves *more* favorably than their teammates. This suggests that the tendency to view the self favorably, far from being absent, is strong in women when gender stereotype-based expectations are prevented from shaping self-perceptions.

There are many avenues for future research. The present findings underscore the importance of women's performance expectations in whether they will engage in attributional rationalization. They therefore imply that conditions that affect the self-expectations women form, such as task sex-type, will moderate this behavior. If women's performance expectations are a function of the degree of fit between their internalization of gender stereotypes and the attributes required for success on specific tasks, we would not expect women to attributionally rationalize their successes when the task is female sex-typed. Moreover, to the extent that men may hold less favorable performance expectations for themselves on female sex-typed tasks, we would expect men to attributionally rationalize these successes when working collaboratively with women.

Moreover, it is important to determine whether individuals who subscribe to and internalize stereotypes other than gender that result in negative performance expectations in the work domain, such as some racial and ethnic stereotypes, will also engage in attributional rationalization. Finally,

while this series of studies focused on the distribution of credit for successful group outcomes, it is not clear how blame is distributed for failed outcomes. While there is evidence that individuals engage in attributional rationalization for failed outcomes when evaluating others (Haynes & Lawrence, 2012), it is not clear whether this finding would extend to evaluations of the self. These are all empirical questions that remain to be answered.

### Organizational Implications

While these studies demonstrate the potential dangers of teamwork for women, we also have repeatedly demonstrated that these dangers are not always realized. Rather, it is ambiguity about individual contribution together with negative performance expectations of self that catalyze attributional rationalization, and the presence of another person to whom the success can be attributed that facilitates its expression. However, the reality of organizational life for women is that the conditions that foster attributional rationalization are likely to be prevalent in the workplace, particularly in traditionally male domains. Because men are likely to outnumber women when the work in question is male sex-typed, women aspiring to nontraditional roles are likely to be working together with men rather than other women. Moreover, given the widespread implementation of teams in the workplace, people tend to work in collaboration with others on tasks and projects, often obscuring individual contribution. Finally, given the nature of the work setting and the presence of stereotype-based expectations, women are unlikely to receive the type of competence affirmation that encourages revision of their existing expectations.

We have provided evidence that attributional rationalization is not a ubiquitous consequence of teamwork in general, but rather a consequence of the source ambiguity often inherent in group work. Yet, source ambiguity is not exclusive to teamwork. There are other organizational contexts, such as mentoring programs and support groups, which may create source ambiguity such that women may question the strength of their contribution to even the most successful of outcomes. These organizational situations that create ambiguity about individual contribution also are potential contributors to the occurrence of attributional rationalization.

### Study Limitations

Participants in this series of studies did not interact face to face with their teammates on the group task. Clearly, in the context of group work, there are likely to be additional variables that influence the overall process. Future work is required to explore how factors such as the amount of information available about one's teammate, the length of time individuals have been working together, and the interpersonal style of each person, affects the process of attributional rationalization. In addition, although our student participants

often work collaboratively on projects likely to be high in source ambiguity and so are no strangers to the situations we created, it would also be useful to replicate our results in a work settings in which collaborations may be more permanent and ongoing. Finally, this series of studies focused only on collaborative work in dyads; it is unclear how the size of a workgroup, as well as its demographic composition, would affect the occurrence of attributional rationalization.

### Conclusion

The research presented here suggests that unless individual contribution is clear and unambiguous, women do not credit themselves for their accomplishments when working with men. This denial of responsibility for successful outcomes is likely to compound the many obstacles women face in the workplace. Not only must women contend with the negative views others hold of their competence in traditionally male domains, but they also have to contend with their own negative self-views. This is apt to have widespread implications for women's career trajectories. The lack of credit women take for successful joint outcomes is likely to affect their sense of confidence and self-esteem, which, in turn, can influence the degree to which they actively seek out opportunities for advancement, such as requesting challenging work projects and applying for promotions. These results thus suggest that the tendency of women to attributionally rationalize their own successes may be an additional obstacle women have to overcome as they strive to move up the organizational ladder.

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### Note

1. We also included a more indirect measure of who participants thought to be the better performer: "If you had to pick one person's performance to represent your team for the lottery, whose performance would you choose?" (*my performance, my teammate's performance*). Results of this measure in each of the four studies were virtually identical to the choice of better performer measure; they therefore are not presented throughout.

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