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Social Anxiety, Self-Presentation, and the Self-Serving Bias in Causal Attribution

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Two experiments were conducted to provide evidence concerning the contribution of self-presentation concerns to the self-serving bias in causal attribution (individuals' tendency to assume more personal responsibility for a success than for a failure outcome) and its occasional, but systematic, reversal. In Experiment 1 high- but not low-social-anxiety participants presented themselves in a far more modest light when a committee of high prestige others was to join the experimenter in evaluating their behavior than when the committee evaluation was canceled. In Experiment 2 this reversal of the self-serving bias among high-social-anxiety subjects (in the evaluative context) was replicated, and it was also found that both high- and low-social-anxiety participants portrayed the causes of their behavior in a more modest fashion when they responded via the "bogus pipeline," a measurement technique designed to reduce distortion and dissimulation in verbal responses, than when they responded in the traditional paper-and-pencil format (although the influence of the bogus pipeline above and beyond the committee evaluation in eliciting "honest" responses from subjects only reached significance for low-social-anxiety subjects). These findings are discussed in terms of the varying self-presentation strategies and differing self-concepts of individuals high and low in social anxiety, as well as the self-presentation component to apparently self-enhancing and self-effacing causal attributions for performance.

The term *self-presentation* refers to the manner in which individuals plan, adopt, and carry out strategies for managing the impressions they make on others. There is a growing interest in this approach to the analysis of interpersonal relations. Self-presentation interpretations of such traditional social psychological topics as group decision making (e.g., Janis & Mann, 1977, pp. 129–133; Jellison & Arkin, 1977), attitude change (e.g., Hass & Mann, 1976; Tedeschi, Schlenker, & Bonoma, 1971), obesity (Krantz, 1978), and equity research (Reis & Gruzen, 1976) have appeared recently. The basic premise of the self-presentation conceptual perspective is that individuals are highly concerned about winning the approval and avoiding the disapproval of others. To achieve these ends, individuals are said to spend considerable time and effort discerning what factors will influence the impression they make on others and then behaving in the most positive manner possible so as to create a favorable impression.

Research has shown repeatedly that individuals tend to attribute their successes to their own efforts, abilities, or other dispositions, whereas they attribute their failures to bad luck, task difficulty, or a variety of other extenuating circumstances (cf. Bradley, 1978; Miller & Ross, 1975; Snyder, Stephan, & Rosenfield, 1978). Because this attributional pattern stems so plausibly from a motive to maintain or enhance esteem (e.g., Heider, 1958), it has been termed the "self-serving bias" in causal attribution. Bradley (1978) has argued recently that the so-called self-serving bias in causal attribution may reflect

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self-presentational concerns. By taking personal responsibility for praiseworthy acts and denying personal responsibility for blameworthy acts, individuals can maximize the esteem in which they are held by others and, as a consequence, maximize their own self-esteem (Bradley, 1978).

There are some notable exceptions to the general finding that individuals assume greater responsibility for successful than for unsuccessful outcomes, however. Some researchers have taken these exceptions as evidence against the notion of self-serving biases in the attribution process (e.g., Ross, 1977). However, Gifford Weary Bradley (1978) has incorporated these exceptions within her general self-presentation framework. As she has noted, "the potential for present or future invalidation of individuals' self-presentation tends to make them more modest about their own abilities and attributes" (p. 66), sometimes even reversing the typical self-serving bias effect. Seemingly, the individual attributor is aware that others may make judgments about how causally related the individual and his or her performance outcome really are; if others are likely to be unpersuaded by—or even challenge—the individual's flattering interpretation of his or her own behavior, modesty becomes the best self-presentation strategy (Jones & Wortman, 1973). Thus, individuals may often, for self-presentational reasons, assume more responsibility for failure than for success.

The two experiments reported here were designed to provide further evidence concerning the contribution of self-presentation concerns to individuals' attributions for success and failure. Experiment 1 was designed to provide evidence concerning the hypothesis that individuals become "more modest about their abilities and attributes" when others are perceived as likely to be unpersuaded by, or perhaps even challenge publicly, an overly flattering interpretation of events. In addition, Experiment 1 was designed to provide some initial evidence concerning individual differences in self-presentation style, or strategy.

Not surprisingly, some research and theory concerning individual differences in self-presentation has already been reported. However, these approaches have primarily emphasized general individual differences in the predisposition or tendency to manage one's impression (Krantz, 1978; Snyder, in press). Although there is a growing interest in attributional styles generally (Ickes & Layden, 1978), there is to date no solid evidence concerning individual difference factors that might distinguish among styles of strategies used by individuals who engage in self-presentation.

However, Lepper (1970) and Carlsmith, Lepper, and Landauer (1974) found that under conditions of situationally induced anxiety, children were far more responsive (compliant) to a threatening than to a warm and positive adult, whereas nonanxious children were more responsive to the warm and positive than to the threatening adult. Lepper (1970) took these data concerning compliance to mean that "when the child is anxious . . . , he will be motivated largely to avoid aversive events; but when he is not anxious, he will be motivated to seek positive events" (p. 705). Similarly, several authors have speculated that this "cost orientation" among anxious children exists among adults who are (situationally or chronically) high in social anxiety; individuals high in social anxiety often prefer to leave potentially embarrassing social situations as quickly as possible and may frequently fulfill this need instead of responding to other, perhaps more positive, social motives (Freedman, Wallington, & Bless, 1967; McPeek & Cialdini, 1977). Fenigstein, Scheier, and Buss (1975) have simply defined social anxiety as "discomfort in the presence of others" (p. 523) and have argued that individuals high in social anxiety (who describe themselves as shy, easily embarrassed, and nervous in group situations) may have a more intense reaction to situations that are potentially embarrassing than do individuals low in social anxiety. Thus, social anxiety seems to be a likely candidate for distinguishing among individuals in terms of self-presentational style.

Specifically, individuals high in social anxiety should be particularly sensitive to public scrutiny of their behavior and might therefore be particularly likely to report modest causal interpretations of their behavior if

their behavior and attributions are subjected to close public scrutiny (thus reversing the typical self-serving attribution bias, as Bradley, 1978, would anticipate). Being less sensitive to the embarrassment that could ensue from a public invalidation of a positive self-appraisal, individuals low in social anxiety should be much less likely to interpret intense scrutiny of their behavior as threatening. Thus individuals low in social anxiety would not necessarily be expected to adopt a "cost orientation" and portray themselves modestly when their behavior and attribution are subjected to close public scrutiny. (Indeed, the behavior of individuals low in social anxiety might even be expected to reflect a "reward orientation," with more personally flattering attributions about the causes of their behavior reported when their behavior is subjected to evaluation than when it is not.)

To test the prediction that high-social anxiety individuals would become "more modest about their abilities and attributes" when an embarrassing public challenge to a flattering interpretation of events was likely, individuals scoring high and low on a measure of social anxiety (Fenigstein, Scheier, & Buss, 1975) performed a task for which (false) feedback about successful versus unsuccessful performance has reliably produced the "self-serving" pattern of performance attributions (e.g., Arkin, Gleason, & Johnston, 1976; Federoff & Harvey, 1976; Harvey, Arkin, Gleason, & Johnston, 1974; Weary, in press). Subjects were informed that their performance and questionnaire responses would either be evaluated (with the subject present) during the remaining half of the experimental hour by a committee of prestigious individuals (immediate evaluation) or at some time in the distant future with the subject absent (delayed evaluation). It was predicted that both high- and low-social-anxiety subjects would assume somewhat more responsibility for success than for failure in the delayed evaluation conditions but that in the immediate evaluation conditions high-social-anxiety subjects would assume greater responsibility for failure than for success, whereas low-social-anxiety individuals would assume greater responsibility for success than for failure, resulting in a significant interaction of outcome, social anxiety, and level of evaluation.

Experiment 1

Method

Subjects. Subjects were recruited from the pretested introductory psychology pool if they had scores on the Social Anxiety subscale of the Fenigstein et al. (1975) Self-Consciousness Scale in the highest or lowest third of the distribution. A total of 40 high- and 40 low-social-anxiety individuals were randomly assigned to the experimental conditions. Thirty-five female and 45 male students participated; men and women were assigned to conditions in a manner that maintained an equivalent proportion across conditions.[1] Subjects were contacted by phone and were scheduled to participate by an experimental assistant, assuring that the experimenter was kept blind to the subject's level of social anxiety.

Procedure. Each subject reported to the "therapeutic testing laboratory," where he or she was met by the experimenter. The confederate arrived soon thereafter, and the experimenter consulted his records, apparently to identify the participants and their roles in the study. He then escorted both individuals into the laboratory and conducted a tour of the facility.

While conducting his tour, the experimenter described the supposed purpose of the study and how the equipment would be used. He explained that the study was designed to investigate the effects of a new, shortened form of desensitization instructions and that the present session was a follow-up to an earlier study in which a number of individuals suffering from test anxiety had been identified. He then casually indicated to the actor that the patient had been identified as test anxious and had agreed to return for the therapeutic session. The experimenter then pointed out two electrodes draped over a comfortable lounge chair and "reminded" the patient that an instrument designed to measure muscular relaxation would be recording his or her responses throughout the session. The experimenter then applied electrode cream and the two electrodes to the left hand and arm of the patient, and the patient was seated in the lounge chair.

The subject was then escorted to the other side of a partition, was seated in a chair at a table, and was shown that the effect of the therapy could be viewed on an oscilloscope, the endpoints of which were labeled "relaxed" and "not relaxed." The experimenter then supposedly activated and calibrated the equipment while the subject reviewed a one-page summary of instructions. Of course, the electrodes

[1] Since inclusion of sex of subjects as a factor in the analyses of variance did not reveal any significant main effects or interactions involving this factor, there will be no further discussion of this variable in this article.

Table 1
Means for Subjects' Ratings of the Success of Therapy, Experiment 1

Level of evaluation	Success outcome		Failure outcome	
	Social anxiety		Social anxiety	
	High	Low	High	Low
Immediate	7.55_a	8.00_a	1.44_b	2.18_b
Delayed	8.44_a	8.40_a	2.08_b	1.37_b

Note. The higher the score, the more successful subjects perceived the therapy to be. Means with different subscripts are significantly different ($p < .05$) by Newman–Keuls procedure.

attached to the patient were not operative. The vertical position of a signal on the oscilloscope was controlled by a potentiometer operated surreptitiously by the patient.

After the actor finished reading the summary, the experimenter explained that the therapist's performance was always videotaped during the session so that a campus-wide committee of psychologists and counselors could evaluate the session more effectively. Subjects were told that a group of three professionals were available to evaluate the session and would arrive shortly after it was completed. It was explained that the researchers had found it most efficient to evaluate the session with the therapist present to answer questions or assist in any way but that it had proved too distracting to conduct the evaluation during the therapeutic session. Following these instructions, a Sony videotape recording apparatus was activated and adjusted by the experimenter.

The actor was then given a therapeutic outline to peruse and deliver. The therapeutic outline consisted of six short paragraphs that asked the patient to imagine a series of events involving studying for and eventually taking a college exam.[2]

Outcome manipulation. During the therapeutic session, the confederate manipulated the signal on the oscilloscope so that it wavered slightly around the midpoint of the scale and then crept progressively toward either the "relaxed" end (success outcome) or the "not relaxed" end (failure outcome) as the therapy continued. The experimenter was kept blind to this outcome manipulation until it was actually delivered. Following the therapeutic session, the experimenter stopped the videotape recorder, removed the electrodes from the patient's hand and arm, and escorted the patient to an adjoining room, supposedly to complete a questionnaire.

Personal evaluation manipulation. When the experimenter returned, he gave the subject either one (delayed evaluation) or three (immediate evaluation) copies of a questionnaire that appeared very formal. Subjects in the immediate evaluation conditions were asked to complete one form of the questionnaire and then transfer their responses to the other copies so that each committee member would have his own form. In the delayed evaluation conditions, the experimenter explained that he had found a note left for him in the adjoining room indicating that due to a scheduling problem, the committee could not convene during the remaining half of the experimental hour. After apologizing for this unexpected change in plans, the experimenter indicated that the evaluation session would be rescheduled for a later date and that the subject would not be required to attend the session. To ensure that subjects would not be overly interested in attending the session, a date during an extended university holiday season was scheduled. The experimenter was kept blind to this personal evaluation manipulation until just prior to its delivery.

The questionnaire was composed of several items, each anchored on 9-point scales (1 = not very much, 9 = very much). The dependent measures were the extent to which the outcome of the therapy was perceived as attributable to the manner in which the therapist delivered it, to the therapist's ability (lack of ability), and to his or her effort (lack of effort).

Upon completion of the questionnaire, subjects were thoroughly debriefed, thanked, and dismissed. The comments of one subject indicated some awareness of the experimental purposes, and his data were excluded from the final analysis.

Results

Manipulation checks. The outcome manipulation clearly produced the desired effects. Subjects in the success outcome condition rated the therapeutic session much more successful ($M = 8.09$) than did subjects in the failure outcome conditions ($M = 1.77$), $F(1, 71) = 782.86$, $p < .0001$. A triple interaction, interesting in light of the results to be reported below, also reached significance, $F(1, 71) = 4.36$, $p < .05$. The means for this measure are presented in Table 1. Seemingly, high-social-anxiety subjects in the immediate evaluation conditions who were successful were somewhat less willing than other successful subjects to acknowledge the magnitude of the positive outcome. Among unsuccessful subjects, low-social-anxiety subjects in the immediate evaluation condition and high-social-anxiety subjects in the delayed evaluation condition were somewhat more reluctant

[2] A more complete description of the procedures can be found in Harvey, Arkin, Gleason, and Johnston (1974). The therapeutic outline used in the present study is available from the authors.

than the other unsuccessful subjects to acknowledge how unsuccessful the therapy had been. Nevertheless, the manipulation was clearly effective. No other main effects or interactions emerged.

To check on the effectiveness of the evaluation manipulation, subjects were asked to indicate the "session evaluation date" assigned to them. All subjects in the immediate evaluation conditions correctly filled in the date of their participation in the therapeutic session as the session evaluation date. All but two subjects in the delayed evaluation conditions correctly identified the future date supplied them. Thus, at least in terms of subjects' understanding of the type of evaluation to which they would be subjected, the evaluation manipulation was highly successful.

Attribution of responsibility. For ease of presentation and because the three dependent measures were highly correlated, the three items were summed to form a single index of dispositional attribution. Analysis of variance of subjects' scores on this dispositional attribution index revealed the predicted interaction of outcome, social anxiety, and level of evaluation, $F(1, 70) = 5.76$, $p < .02$. No other main effects or interactions in this analysis even approached significance ($p > .15$).

To provide more specific tests of the predictions, separate analyses of variance were conducted within the immediate and the delayed evaluation conditions. Within the immediate evaluation conditions, analysis of variance revealed only the predicted Social Anxiety × Outcome interaction, $F(1, 36) = 4.60$, $p < .04$. As can be seen from the means displayed in Table 2, high-social-anxiety subjects attributed more responsibility to themselves when they were unsuccessful than when they were successful ($p = .05$),[3] whereas low-social-anxiety subjects attributed somewhat more responsibility to themselves when they were successful than when they were unsuccessful (*ns*). High-social-anxiety subjects assumed significantly more personal responsibility for the failure outcome than did low-social-anxiety subjects ($p < .04$), but there were no significant differences between the attributions of high- and low-social-anxiety subjects within the success outcome conditions.

Table 2
Means for the Composite Index of Subjects' Attribution to Self, Experiment 1

	Immediate evaluation		Delayed evaluation	
	Social anxiety		Social anxiety	
	High	Low	High	Low
Success	5.33	6.15	5.44	5.75
Failure	6.83	5.24	4.75	5.96

Note. The higher the score, the greater subjects' self-attribution for the outcome of the therapy.

There was no hint of the predicted outcome main effect within the delayed evaluation conditions ($p > .30$). Although high-social-anxiety subjects assumed slightly more personal responsibility for success than for failure across the three measures of personal responsibility, low-social-anxiety subjects did not. However, this interaction of social anxiety and outcome within the delayed evaluation conditions did not approach significance ($p > .30$). The social anxiety main effect was also nonsignificant ($p > .10$).

Not surprisingly, given the analyses reported above, separate analyses of variance within levels of social anxiety revealed the expected Outcome × Level of Evaluation interaction among high-social-anxiety subjects, $F(1, 36) = 6.29$, $p < .02$, but no significant effects whatsoever among low-social-anxiety subjects ($ps > .20$). As a result of the pattern of the interaction among high-social-anxiety subjects, a main effect of level of evaluation also emerged in the analysis of these subjects' responses, $F(1, 36) = 4.22$, $p < .05$.

Discussion

The results of this study offer strong support for Bradley's (1978) self-presentation framework for explaining some reversals of the self-serving attribution bias. As Bradley

[3] For individual planned comparisons, two-tailed t tests were used.

noted, although individuals typically assume greater personal responsibility for successful than for failing outcomes at tasks, there exist several reversals of this trend. In the present study, high-social-anxiety subjects presented themselves in a favorable light, assuming slightly more personal responsibility for success than for failure, when only the experimenter was to evaluate their behavior, but presented themselves in a more modest manner, assuming far more personal responsibility for failure than for success, when several high prestige others were to join the experimenter in evaluating their behavior (in their presence). This finding supports Bradley's (1978) contention that intense social evaluation could induce a reversal in the typical self-serving attribution bias. As anticipated, low-social-anxiety subjects, who were not expected to view the immediate evaluation as so threatening, were much less affected by the manipulation of intensity of evaluation.

Although the present reversal of the self-serving attribution bias supports Bradley's (1978) general self-presentation framework, this finding taken alone provides little to aid in an understanding of the processes underlying such reversals in attribution of responsibility for success and failure. In particular, it is not clear whether high-social-anxiety subjects reported their privately accepted perceptions of causality in the immediate evaluation conditions, despite their unflattering nature, but reported a more flattering portrayal of their personal responsibility under conditions of less intense evaluation, or vice versa. Both interpretations seem reasonable.

Jones and Wortman (1973) have argued that a modest presentation of self can be an effective self-presentational strategy. High-social-anxiety subjects presented themselves as far more responsible for the blameworthy event in the immediate than in the delayed evaluation conditions, perhaps as a strategy for fostering an impression of their own modesty and even for receiving vindication from the prestigious others when the videotape was analyzed later. This analysis would argue that high-social-anxiety subjects were presenting themselves favorably, albeit modestly, in the immediate evaluation conditions and that their attributions in the delayed evaluation conditions could reflect anything from self-presentation concerns to an unbiased processing of the available information (cf. Miller & Ross, 1975).

Alternatively, the desire to avoid aversive events, such as embarrassment, among individuals high in social anxiety (a "cost orientation") might lead these individuals to endorse attributions that matched as closely as possible the true nature of events. By endorsing attributions that would match others' perception of the true nature of events, subjects could expedite the discomfiting interaction with the others by ensuring a conflict-free, issue-free interaction. Perhaps just as test-anxious persons attribute their worry and inability to focus attention on a task (and subsequent failure) to themselves (e.g., Weiner & Sierad, 1975), high-social-anxiety individuals may actually view their uncontrollable anxious reactions in social situations (and consequent ineptitude) as due to themselves. If so, high-social-anxiety subjects may have been portraying themselves honestly in the immediate evaluation conditions but presenting themselves favorably in the delayed evaluation conditions.

Experiment 2 was conducted to shed further light on the exact nature of high- and low-social-anxiety individuals' attributional behavior. A second purpose of Experiment 2 was to determine more precisely the contribution of self-presentation to the self-serving attribution bias generally.

Experiment 2

The bogus-pipeline technique was proposed by Jones and Sigall (1971) as a strategy for reducing distortion and dissimulation in verbal responses. The technique involves convincing subjects that the experimenter is capable of detecting whether they are telling the truth, thus leading subjects to be more frank in revealing socially undesirable information. As Gaes, Quigley-Fernandez, and Tedeschi (1978) argue, it is presumably better from the subject's point of view to be perceived as having some undesirable characteristic or as holding some undesirable cognition than to be perceived as a liar. Because it appears that the bogus-pipeline tech-

nique actually reduces the tendency of subjects to present themselves in a socially desirable way, the measurement technique provides a straightforward way to differentiate between the two interpretations (discussed above) of the attributions reported by subjects in Experiment 1.

Specifically, assuming that subjects would prefer to appear honest than to present a contrived presentation of self when their judgments are taken via the bogus pipeline, it could be determined whether high-social-anxiety subjects privately accepted the attributions they reported in the delayed evaluation context (greater personal attribution for success than for failure) and were intentionally portraying themselves in a "modest" way in the immediate evaluation conditions (assuming greater personal responsibility for failure than for success) or privately accepted the attributions they reported in the immediate evaluation context but were portraying themselves in a more flattering, positive light in the delayed evaluation conditions. To provide a test between these two interpretations, it would only be necessary to replicate either the findings in the delayed evaluation *or* immediate evaluation conditions of Experiment 1 and include another set of conditions identical in every respect, save the techniques used for collecting the dependent measures (i.e., the bogus pipeline).

The decision to replicate the immediate evaluation conditions was recommended by the fact that the significant effects in Experiment 1 derived largely from the immediate evaluation conditions [4] and because the procedures in these conditions were slightly less complex to carry out. Assuming that the findings in the immediate evaluation conditions of Experiment 1 were essentially replicated in the no-bogus-pipeline conditions of Experiment 2, an interaction of outcome, social anxiety, and measurement technique (with the pattern of the means in the bogus-pipeline condition of Experiment 2 appearing similar to the pattern in the delayed evaluation conditions of Experiment 1) would suggest that subjects privately accepted the more flattering portrayal of their responsibility but had been overly modest when their behavior was closely scrutinized, presumably for self-presentational advantage. However, if the responses of subjects in the bogus-pipeline conditions mirrored the responses of subjects responding conventionally, this finding would suggest that high-social-anxiety subjects privately accepted their unflattering, modest attributions but would present themselves more favorably if given the opportunity. A different experimental context or paradigm, as successful in producing the typical "self-serving" pattern of performance attributions as the paradigm employed in Study 1 (Wells, Petty, Harkins, Kagehiro, & Harvey, 1977; Arkin, Petty, Burger, Pummill, & Reaves, Note 1), was used in Experiment 2 in order to provide some evidence for the generality of the attributional findings across tasks and contexts.

Method

Subjects and procedure. A total of 40 high- (uppermost third of the distribution) and 40 low- (lowest third) social-anxiety female undergraduates were recruited by phone and were randomly assigned to the experimental conditions by an experimental assistant. Thus, the experimenter was kept blind to the subject's level of social anxiety.

Immediately after the subject arrived at the laboratory, she was joined by a female confederate posing as another subject. The experimenter gave them each a short questionnaire to complete, indicating that another researcher had asked him to obtain responses from as many individuals as possible. The questionnaire consisted of several items anchored on 9-point scales concerning current social and political issues and personal matters (e.g., how nervous she felt). While completing the questionnaire, the confederate surreptitiously observed and then memorized the subject's responses. Completed questionnaires were collected and placed in a folder that was set aside later.

The participants were then escorted into the experimental room and were seated at a table. It was explained that the study concerned "the interaction processes involved with a cooperative visual perception and manual dexterity task" and that the specific task involved placing map pins of six different colors on a corkboard so as to correspond to a geometric design (see Wells et al., 1977). The experimenter then conducted a (rigged) drawing that assigned the confederate the role of "worker" and the subject the role of "assistant." The worker was told that she would have 2 minutes to replicate the geometric design in terms of its size, shape, and

[4] If the delayed evaluation conditions were replicated and the "mirror image" hypothesis (described below) were supported, the data would be exceedingly difficult to interpret.

color pattern. The assistant was told that her task was to aid the worker in any way possible, such as handing the worker pins or providing suggestions, without actually placing pins on the corkboard work surface herself.

Just prior to beginning the task, the experimenter explained that each session was videotaped so that a group of PhD candidates in clinical psychology could evaluate the session more effectively. It was explained that the researchers had found it most efficient to evaluate the session with the subjects present to answer questions and assist in any way but that it had proved too distracting to try to evaluate the session while subjects were actually performing the task. Subjects were then told that a team of three graduate students was available to evaluate the session during the second half of the experimental hour and that they would be arriving soon. Following these instructions, the Sony videotape apparatus was activated and the camera was focused on the work surface.

After allowing the participants a few seconds to view the geometric design, the experimenter began the timed task. The worker performed the task at a predetermined pace and only partially completed the design.

Following the Wells et al. (1977) and Arkin et al. (Note 1) procedures, the participants were informed after the 2-minute period that the primary interest of the study actually concerned the helping behavior of the assistant, and the experimenter asked the assistant whether she would be interested in knowing how she performed in comparison with earlier participants. Every assistant expressed a desire to view the data.[5]

Outcome manipulation. After consulting his records, the experimenter pointed out on a chart that the assistant's performance was actually quite poor (15th percentile) or quite good (85th percentile) relative to the performance of prior participants. The experimenter was kept blind to this outcome manipulation until it was actually delivered.

Measurement technique manipulation. In every condition the confederate was then given a set of questionnaires and was escorted to a nearby room. During this time the experimenter checked his notes to determine whether the subject was assigned to the bogus-pipeline or to the conventional response format (paper-and-pencil) conditions. In the bogus-pipeline conditions, the subject was seated in front of an impressive array of electronic gadgetry, including dials, meters, and switches, which the experimenter identified as an electromyograph (EMG). Following the procedures of Jones and Sigall (1971) and Quigley-Fernandez and Tedeschi (1978) closely, the use of the EMG was introduced as part of a second research program concerning the degree to which individuals possessed good or poor contact with their inner feeling states. Subjects were told that the EMG was a superior form of lie detector and that the equipment measured both the direction and intensity of attitudes, feelings, or judgments. The experimenter then applied electrode paste and attached electrodes to the hand and wrist of the subject. It was explained that the information analyzed by the EMG was recorded on tape output by a computer located next door and would also appear in a somewhat more raw form on the EMG OUTPUT screen (an oscilloscope adapted for use in the present study).

It was pointed out that the EMG sometimes required adjustments due to individual differences in baseline responses. "In order to calibrate the equipment," subjects were asked to respond again to some of the same items they had been administered earlier in the attitude survey. The subject was given a blank copy of the "attitude survey" and was asked to select any three of the items for the test that she wished. After the subject had indicated three items, the experimenter read the first aloud and waited until the subject had dialed in her response before flipping a prominently labeled switch that supposedly "activated the analyzing process" of the EMG. The confederate, who was listening over a concealed intercom to hear the question selected and the click of the "activator" switch, manipulated the oscilloscope reading to be about one-half point from the subject's actual earlier response. The experimenter then retrieved the subject's attitude questionnaire from its folder, both to demonstrate to the subject that her earlier responses had not been tampered with and to demonstrate the accuracy of the EMG. After the experimenter feigned adjusting the equipment, the EMG readings for the next two questions were near-exact copies of the subject's earlier responses.

After establishing the supposed validity of the EMG, the experimenter turned the output screen away from the subject's view, gave the subject the dependent measures questionnaire, and instructed her to record her response on the questionnaire first, then dial in her response (using the 9-point or 100-point register, as appropriate) for analysis by the EMG, and finally throw the activator switch. The experimenter watched the output screen and wrote some comments while the subject responded to the items.

In the no-bogus-pipeline conditions, the experimenter arranged for two brief delays in order to equate the time elapsed from completing the task to answering the questionnaire in the no-pipeline and bogus-pipeline conditions. Subjects then completed their questionnaires in the conventional paper-and-pencil format.

Dependent measures. The first measure asked subjects to divide 100 points between the following two explanations of their behavior:

> I chose to help as much or as little as I did because of SOME CHARACTERISTIC THAT I POSSESS.
>
> I chose to help as much or as little as I did because of SOME ASPECT OF THE SITUATION IN WHICH I FOUND MYSELF.

[5] A more complete description of the procedures can be found in Wells et al. (1977) or in Arkin et al. (Note 1).

Subjects were also asked to report (on 9-point scales) the extent to which they felt three specific dispositional factors (her friendliness, her apathy, her sense of responsibility) affected her level of helpfulness. The difference between the dispositional and situational score on the 100-point index and the sum of each subject's scores on the three specific attribution items constituted the two dependent measures. Finally, subjects were asked to respond to several manipulation check items (as described in the results), each anchored on a 9-point scale. After completing the questionnaire, subjects were thoroughly debriefed, thanked, and dismissed.

Table 3
Means for the Standardized Index of Attribution to Self, Experiment 2

	Bogus pipeline		No bogus pipeline	
	Social anxiety		Social anxiety	
Outcome	High	Low	High	Low
Success	−.08	.97	.29	1.40
Failure	.32	−.62	.14	−2.33

Note. The greater the score, the greater the subjects' self-attribution for their performance at the task.

Results

Manipulation checks. The outcome manipulation was highly successful. Subjects in the success outcome conditions indicated that they were more helpful than most previous subjects ($M = 7.60$), whereas subjects in the failure outcome conditions indicated that they were less helpful ($M = 1.78$), $F(1, 72) = 807.60$, $p < .0001$.

Successful subjects also rated their performance on the pin-placing task much higher ($M = 6.88$) than did unsuccessful subjects ($M = 2.85$), $F(1, 72) = 243.26$, $p < .0001$. Both high- and low-social-anxiety subjects also rated their performance better in the no-bogus-pipeline conditions ($M = 5.23$) than in the bogus-pipeline conditions ($M = 4.90$), $F(1, 72) = 7.89$, $p < .007$, a finding that is entirely consistent with the attribution data to be reported below. This tendency was stronger for high- (Ms = 5.55, 4.25) than for low-social-anxiety subjects (Ms = 4.90, 4.75), leading to a significant interaction of social anxiety and measurement technique, $F(1, 72) = 4.96$, $p < .03$.

Subjects in the bogus-pipeline conditions rated the EMG as highly accurate in evaluating their judgments ($M = 7.55$) and relatively error free ($M = 2.83$), and there were no significant differences between the ratings of high- and low-social-anxiety respondents or successful and unsuccessful subjects on these items. Subjects in the bogus-pipeline conditions reported feeling less comfortable in their assigned roles ($M = 5.78$) than did subjects in the no-pipeline conditions ($M = 6.83$), $F(1, 72) = 6.38$, $p < .02$, as expected. Not surprisingly, subjects in the success outcome conditions ($M = 7.28$) reported feeling more comfortable than did subjects in the failure outcome conditions ($M = 5.33$), $F(1, 72) = 21.99$, $p < .001$. And fittingly, given the attribution data to be reported below, there also emerged an interaction of outcome and measurement technique, $F(1, 72) = 8.33$, $p < .006$. Subjects who failed and then made judgments on the bogus pipeline were far less comfortable ($M = 4.20$) than either subjects who succeeded and reported judgments on the bogus pipeline ($M = 7.35$) or subjects in the no-bogus-pipeline conditions who succeeded ($M = 7.20$) or failed ($M = 6.45$).

Finally, high-social-anxiety subjects rated themselves on the initial questionnaire as feeling more nervous (1 = very nervous; 9 = not at all nervous) as the experiment began ($M = 5.63$) than did low-social-anxiety subjects ($M = 6.57$), $F(1, 72) = 5.33$, $p < .03$.

Attribution of responsibility. For ease of presentation and because the two dependent measures were highly correlated, the two measures were converted to standard scores and were summed, creating a single index of dispositional attribution. Analysis of variance of subjects' scores on this attribution index revealed a significant interaction of social anxiety and outcome, $F(1, 72) = 16.63$, $p < .001$, and no hint of a Social Anxiety × Outcome × Measurement Technique interaction, $F(1, 72) = 1.42$, $p > .20$. As can be seen from the means displayed in Table 3 and Figure 1, high-social-anxiety subjects assumed slightly more personal responsibility for failure than for success (ns), whereas low-social-anxiety subjects assumed far more responsibility for success than for failure ($p < .002$). High-social-anxiety subjects assumed significantly

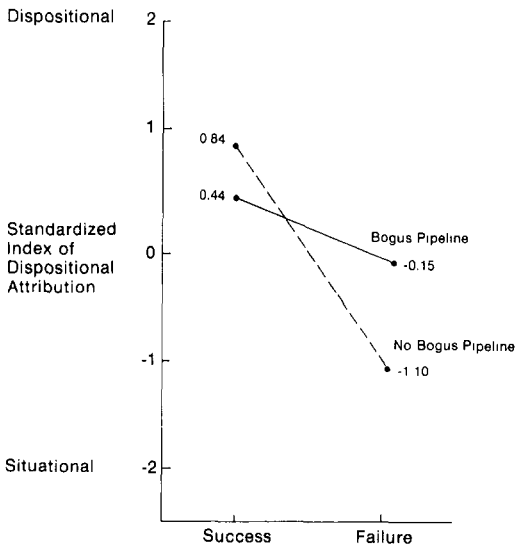

Figure 1. Mean dispositional attribution as a function of social anxiety and outcome.

more responsibility for the failure outcome than did low-social-anxiety subjects ($p < .04$), whereas low-social-anxiety subjects assumed somewhat more responsibility for the success outcome than did high-social-anxiety subjects (*ns*).

An interaction of outcome and measurement technique also emerged in the analysis of variance, $F(1, 72) = 4.12$, $p < .05$. As can be seen in Figure 2, high- and low-social-anxiety subjects collectively assumed more personal responsibility for success than for failure only in the no-bogus-pipeline conditions ($p < .02$), assuming only slightly more responsibility for success than for failure when their judgments were taken via the bogus-pipeline (*ns*). Within success and within failure the differences between the bogus-pipeline and no-pipeline conditions were not significant. However, an inspection of the means in Table 3 reveals that the effect of the measurement technique manipulation was much greater for low- than for high-social-anxiety subjects. The interaction of outcome and measurement technique was significant among low-, $F(1, 36) = 5.77$, $p < .03$, but not among high-social-anxiety subjects ($F < 1$). Low-social-anxiety subjects assumed significantly less personal responsibility for the failure outcome in the no-bogus-pipeline than in the bogus-pipeline conditions ($p < .03$), whereas they assumed slightly more personal responsibility for the success outcome in the no-bogus-pipeline conditions than in the bogus-pipeline conditions (*ns*). Although an outcome main effect emerged in the overall $2 \times 2 \times 2$ analysis of variance, $F(1, 72) = 13.55$, $p < .0004$, this effect was also entirely attributable to the low-, $F(1, 36) = 33.31$, $p < .0001$, rather than the high-social-anxiety subjects ($F < 1$).

General Discussion

The results of Experiment 2 clarify the findings of Experiment 1 considerably. The tendency of high-social-anxiety subjects to assume more personal responsibility for failure than for success was essentially replicated (most prominently when subjects' attributions were recorded via the bogus pipeline rather than the traditional paper-and-pencil technique). These data argue that high-social-anxiety subjects privately accepted the "unflattering, modest" attributions they reported and suggest that subjects in the immediate evaluation conditions of Experiment 1 had been responding honestly rather than self-presenting when they assumed

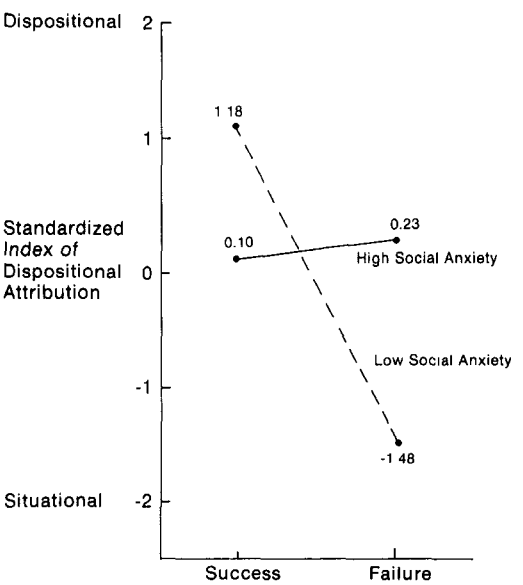

Figure 2. Mean dispositional attribution as a function of measurement technique and outcome.

greater personal responsibility for failure than for success.

High-social-anxiety subjects' perception of themselves as more personally responsible for failure than for success may derive from their severely debilitating reactions to evaluative social situations.[6] Brockner (1979) recently found that high-social-anxiety individuals were overly self-preoccupied when they were confronted with an evaluative context and were therefore unable to devote sufficient attention to the task to perform as well as subjects low in social anxiety (who would not experience such a debilitating reaction to social evaluation). It therefore seems reasonable to assume that high-social-anxiety subjects in the present experiments, like Brockner's subjects, were overly anxious or self-preoccupied and that they would have performed less well than their low-social-anxiety counterparts, had the experimental task been a real one. (High-social-anxiety subjects did report feeling more nervous at the outset of the experiment than did low-social-anxiety subjects.)

There was also considerable evidence of self-presentation uncovered in the two experiments reported here, however. High- and low-social-anxiety subjects alike rated their performance better in the no-bogus-pipeline than in the bogus-pipeline conditions of Experiment 2 and reported a much more flattering causal interpretation of events in the no-pipeline than in the pipeline conditions. However, this attenuation of the self-serving attribution bias in the bogus-pipeline conditions was due primarily to low-social-anxiety participants, who assumed significantly less personal responsibility for the failure and slightly more responsibility for the success outcome in the no-bogus-pipeline than in the bogus-pipeline conditions. High-social-anxiety participants were much less affected by the measurement technique manipulation.

This failure to uncover effects of the measurement technique among high-social-anxiety participants could reflect a ceiling effect. That is, the evaluation by the committee of experts may have been sufficient to cause high-social-anxiety participants to endorse publicly their private conception of the true nature of events. High-social-anxiety participants may have been highly sensitive and responsive to the ability of the experts to distinguish honest from dishonest responses and perhaps challenge publicly ratings that did not appear to match reality. Thus, because subjects in every condition of Experiment 2 expected to interact with the committee of experts, it makes sense that high-social-anxiety participants' attributions should have been affected little, if at all, by the measurement technique manipulation. In contrast, low-social-anxiety participants, who were not expected to be as sensitive to the threat of embarrassment posed by the committee of experts, may have been less inclined to be accurate rather than personally flattering in the face of the impending evaluation than were high-social-anxiety subjects. In sum, less "cost orientation" among low- than among high-social-anxiety individuals could account for the greater impact of the measurement technique manipulation on them.

Alternatively, it may be that low-social-anxiety participants were not merely less "cost oriented" than high-social-anxiety subjects, but were actually more actively "reward oriented" when they expected to interact with the committee. In Experiment 1, low-social-anxiety subjects presented themselves in a somewhat more favorable light when the evaluation was scheduled to take place than when it was canceled, suggesting that their self-presentation concerns may have been aroused by the social evaluation. A reward orientation toward the committee evaluation could have led low-social-anxiety participants to present themselves favorably when it was both possible *and* useful to do so (immediate evaluation conditions of Experiment 1; no-bogus-pipeline conditions of

[6] Brockner and Hulton (1978) found no significant attributional differences between individuals high and low in self-esteem, a construct that Brockner (1979) has argued is comparable to, if not isomorphic with, social anxiety. However, because the procedures in the Brockner and Hulton study were most comparable to the delayed evaluation conditions of Experiment 1 reported here, their findings are entirely consistent with the present findings. Moreover, Ickes and Layden (1978), Fitch (1970), and others have found such effects.

Experiment 2) but not when it was not possible (bogus-pipeline conditions of Experiment 2) or not useful (delayed evaluation conditions of Experiment 1) to do so.

In fairness, however, the self-serving bias (i.e., individuals assuming more responsibility for success than for failure) was evident in the responses of low-social-anxiety subjects in the bogus-pipeline conditions. If it is assumed that the bogus-pipeline measurement technique does substantially reduce, if not entirely eliminate, distortion and dissimulation in verbal responses, then it must be concluded that low-social-anxiety individuals were portraying themselves honestly in assuming somewhat greater responsibility for the success than for the failure outcome (and that high-social-anxiety subjects were portraying themselves honestly in assuming somewhat greater responsibility for the failure than for the success outcome). Of course, low-social-anxiety individuals' (honest) ratings of themselves as more personally responsible for success than for failure could reflect any number of processes (see Arkin & Maruyama, 1979, p. 92; Ickes & Layden, 1978). But the present data argue minimally that whatever the exact process responsible, these subjects' attributions reflect their privately accepted perceptions. Thus, among low-social-anxiety subjects it is only the sizable exaggeration of the self-serving bias in the no-bogus-pipeline conditions that seems to be due unambiguously to self-presentation.

Conclusions

The present studies generally confirm the hypothesis that the self-serving bias in causal attribution and its occasional but systematic reversal are in part a reflection of self-presentation, or a desire to maintain or create a favorable impression. Specifically, whether individuals privately believed that they were more personally responsible for success than for failure (low-social-anxiety individuals) or more personally responsible for failure than for success (high-social-anxiety individuals) in the present context, they portrayed themselves in a far more personally flattering way when it was possible to do so (no-bogus-pipeline conditions; delayed evaluation conditions) than when they were precluded from doing so (bogus-pipeline conditions; immediate evaluation conditions). In short, participants portrayed themselves in a far more modest fashion, apparently reporting their private and personal view of events, when an overly positive portrayal of events was likely to be quite embarrassing (because it would be revealed to be untrue) than when this likelihood was small. Finally, complementing earlier research (e.g., Lepper, 1970), there was evidence that high-social-anxiety subjects were "cost oriented" and some hints that low-social-anxiety subjects were "reward oriented" in their attempts to win the approval and avoid the disapproval of others (i.e., self-present). Specifically, high-social-anxiety participants responded to social evaluation with a modest presentation of self, reflecting an attempt to avoid embarrassment rather than win approval, whereas low-social-anxiety participants tended to respond to social evaluation with a favorable presentation of self, perhaps reflecting an attempt to win approval rather than avoid embarrassment.

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