Affect as a Mediator of Attributional Egotism

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A three-stage model of the relationships among achievement outcomes, outcome-related affect, attribution, and emotion is tested in two studies. It is suggested that success and failure elicit positive and negative affective states due to prior conditioning. These affective states then lead to an attribution process that serves to defend and enhance self-esteem. Next, emotional labels are chosen that are consistent with the affective states and the attributions. Two studies were designed to test the proposed relationships among achievement outcomes, affective states, and attributions. In the first study, subjects received information indicating that they were strongly or mildly aroused as a result of receiving outcome feedback on an achievement task. The results indicated that low arousal reduced egotistical attributions to internal factors. In the second study, subjects either succeeded or failed on an achievement task. Half of the subjects were provided with an opportunity to misattribute the arousal elicited by their outcomes to an irrelevant source. Subjects in the misattribution condition made less egotistical attributions to external factors than subjects who were given no opportunity to misattribute their arousal. The results of both studies suggest that outcome-related affect mediates the relationship between outcomes and attributions in achievement situations.

For some time, controversy has surrounded the interpretation of the common finding that success in achievement situations is attributed to

internal factors while failure is attributed to external factors (Bradley, 1978; Miller & Ross, 1975; Ross, 1977; Snyder, Stephan, & Rosenfield, 1978). The most recent studies favor an egotistical explanation of this pattern. In studies comparing egotism with an alternative approach based on expectancies, the evidence suggests that egotism is the more powerful explanation of this pattern of results (Arkin, Gleason, & Johnston, 1976; Davis & Stephan, 1980; Federoff & Harvey, 1976; Stephan, Bernstein, Stephan, & Davis, 1979; Weary, 1980). Additional support for the egotism approach comes from studies indicating that ego involvement is a crucial determinant of the internal attributions that are made for success and the external attributions that are made for failure (Miller, 1976; Rosenfield & Stephan, 1978). This finding suggests that the desire to maintain and enhance a positive self-image is greatest when the outcome in an achievement situation is relevant to an important dimension of an individual's self-concept and when the outcome is potentially attributable to the individual. While egotism typically leads to internal attributions for success and external ones for failure, under some circumstances, such as the anticipation of future performance and situations that demand modesty, this attribution pattern may not hold.

In a review of some of these and other recent studies on attributions for achievement outcomes, Bradley (1978) observed that, while the evidence strongly supports egotism as an explanation of attributions for success and failure, there is little evidence concerning how this process works. She suggested that researchers in this area have "implied that the positive and negative affective states produced by success and failure, respectively, mediate individuals' casual attributions." It appears that the negative affective state elicited by failure (e.g., feeling anxious and upset) motivates a defensive attribution process which serves the need to maintain a positive self-image. Because external attributions for failure enable the individual to deny responsibility for a negative outcome, the individual can disassociate him/herself from the aroused negative feelings and terminate them quickly. Correspondingly, the positive affective state elicited by success sets in motion an egotistical attribution process that enhances self-esteem. Internal attributions for success link the positive feelings elicited by success with valued personal qualities such as intellectual competence. The positive affective state can thus be prolonged and subsequently recalled, enabling people to feel positively about themselves.

Although it appears to be the case that no experimental studies have fully tested this conceptualization of the processes underlying attributional egotism, there are several studies that have examined the relationship between causal attributions and emotions. Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971) suggested that attributions determine the emotional labels people employ in achievement situations.

According to Weiner et al., internal attributions are associated with stronger feelings of pride and shame than external attributions. Subsequently, Weiner (1972, 1974) elaborated on this notion. He suggested that it is primarily attributions to effort—not to ability—that are related to the emotions of pride or shame. This hypothesis was supported by Sohn (1977, experiment II), who found that effort attributions were more important than ability attributions in determining pride and shame. Recently, Weiner, Russell, and Lerman (1978, 1979) have further refined Weiner's model. They considered a wide range of emotions and suggested that the outcome alone may cause such general emotions as feeling happy or upset, whereas for more specific emotions, such as feeling pride and shame, it is the outcome combined with the subsequent attributions that determines emotional labeling.

Weiner's approach to the relationship between affect and attribution differs substantially from the approach proposed by Bradley (1978). From Bradley's perspective, affect mediates attributions, but from the perspective of Weiner et al. (1978, 1979), outcomes and attributions mediate affect. Even when Weiner et al. suggest that some general emotions are experienced after success and failure, they do not furnish these outcome-related affective responses with a motivating function concerning egotistical attributions. However, the two approaches do not necessarily conflict with one another because the affect–attribution relationship with which Bradley is concerned is temporally antecedent to the attribution–affect relationship discussed by Weiner et al.

The relationship of outcome, outcome-related affect, attribution, and the labeling of specific emotional reactions can be characterized as a three-stage process. It seems likely that on the basis of prior conditioning, achievement outcomes elicit a general positive or negative affective response. Thus, stage 1 consists of the relationship between outcome feedback and its immediate affective consequences, i.e., a positive or negative affective state. In stage 2 this affective state sets in motion attributional processes that function to maintain or enhance self-esteem. Stage 3 builds on both of the preceding stages. The outcome-related positive or negative affect and attributions are translated into specific emotions through a cognitive labeling process. The attributions that are made and the affect that is experienced determine the specific emotional labels that are employed. For example, the positive affect produced by success is likely to be labeled as pride when internal attributions are made, but when external attributions are made this positive affect is more likely to be labeled as relief or thankfulness.

This three-stage model relating outcome, outcome-related affect, attribution, and labeled emotion bears some similarity to Schachter's theory of emotion (Schachter & Singer, 1962). Schachter proposed that people label ambiguous arousal states in accordance with their perception

of situational cues that provide an explanation for their arousal. In the case of achievement situations, the outcome elicits an arousal state to which the individual responds by seeking the causes of the arousal. The individual then uses these causal attributions for the achievement outcome to aid him/her in labeling the arousal in emotional terms. The proposed model is dissimilar to Schachter's theory in that it suggests that the affect elicited by success or failure is either positive or negative, not undifferentiated.

The three-stage model is also related to Zajonc's (1980) analysis of the affect–cognition relationship. Zajonc argues that global affective reactions, like preferences, take primacy over cognitive information processing. Consistent with this, outcome-related, general affective states are presented as preceding and determining cognitive reactions (i.e., causal attributions) in the three-stage model adopted in the present study. In addition, the three-stage model postulates that cognitions are then used as a basis for differentiating and labeling this affect in emotional terms. A similar emphasis on cognitions related to causal attributions as determinants of specific emotional reactions is found in the revised version of Seligman's learned helplessness model of depression (Abramson, Seligman, & Teasdale, 1978).

EXPERIMENT I

The present set of two studies focuses on the link between outcomes, affect, and causal attributions. In the first study a false feedback paradigm was used to influence outcome-related affect and the subjects' subsequent causal attributions were examined. The subjects were given either success or failure feedback on an achievement task while their arousal level was supposedly being monitored. Half of the subjects received arousal feedback indicating that they were experiencing strong affective reactions in response to their outcomes on the task. The other half of the subjects were given feedback that led them to believe that their affective reactions to their outcomes had been minimal. It was predicted that subjects in the Low-Arousal Condition would make less egotistical attributions for their outcomes (i.e., fewer internal attributions for success and fewer external attributions for failure) than subjects in the High-Arousal Condition. Thus, the first experiment examines the relationship between stages one and two of our three-stage model. By reducing the arousal experienced as a consequence of receiving outcome feedback, the link between outcomes and affect should be attenuated (stage 1) and it should then be possible to assess the effects of this lowered level of affect on attributions (stage 2). If the outcomes on the task are perceived as having produced minimal affect, performance on the task should be regarded as unimportant and, for this reason, there should be a diminished desire to make egotistical attributions.

Method

Subjects. The subjects were 84 male undergraduates at the University of Texas who were enrolled in introductory psychology.[1] They participated in the study for course credit. Nine subjects reported suspicions concerning the performance (5) or arousal feedback (4). They were eliminated from the data analysis.

Apparatus. The experimental room was equipped with a bogus galvanic skin monitor that was wired to a two-channel tape recorder. The needle on the GSR monitor was driven by electrical current from the speaker outlet of the first channel. Variations in the tone recorded on the first channel were used to control the level of arousal indicated by the needle on the GSR monitor. The task instructions and performance feedback were recorded on the second channel. The GSR display meter had a 50-point scale. The experimental room also had a pair of electrodes wired to the bogus GSR monitor. Four tapes with different recordings had been prepared. While all of them included the same task instructions, two of them provided failure feedback and two provided success feedback. One of the success tapes and one of the failure tapes provided high-arousal feedback; the others provided low-arousal feedback.

Procedure. Before the subject arrived, the second experimenter randomly selected one of the four prepared tapes, put it on the tape recorder and adjusted the GSR display. The first experimenter, blind to the condition to be run, seated the subject in the experimental cubicle. The task, a perceptual matching test, was described as a valid and reliable measure of a person's ability to make judgments of similarity. The experimenter said that she was concerned with whether performance on the task was accompanied by physiological arousal, which might be experienced as strong positive or negative feelings. To answer this question, the subject's galvanic skin response would be measured while the subject was working on the task and after performance feedback had been given. The galvanic skin response was described as a well-established index of the amount of positive or negative affect experienced. It was also explained that in order to allow the subject to keep track of his physiological reactions, a visual display had been mounted in the experimental room.

After the subject had agreed to participate (all subjects did so), electrodes were fixed to the subject's dominant hand. The experimenter then explained that the task called for the identification of simple patterns embedded in complex figures called spirograms. The subject was to scan three spirograms and select the one that was most similar to a target figure. The test was constructed in such a way that there were no right or wrong answers. Next, the experimenter turned on the tape recorder.

[1] The subjects were selected from a broader sample of 320 students to maximize individual differences in achievement motivation.

All recordings started with instructions on how to work through the task. For each match the subject was given 20 sec to find the "right" answer. Fourteen similarity judgments were called for.

Manipulation of the performance outcome. When the subject finished working on the last match, he was told to wait for the test to be scored. After a short while the experimenter's voice came on giving performance feedback. In the Success Condition, the subjects were told that they had done very well, actually getting a percentile rank of 92, a remarkable performance. In the Failure Condition, subjects were told that they had done poorly, actually reaching only a percentile rank of 32, a relatively weak performance. Subjects in both conditions were asked to remain seated to provide additional physiological data.

Manipulation of the perceived level of arousal. Up to this point in time, all subjects had been confronted with the same physiological arousal feedback. Before the subjects started to work on the test, the needle on the display showed an arousal score of 10; during the test it fluctuated between 15 and 22; and while the subjects waited for the performance feedback it returned to 10–15. In the High-Arousal Condition, the needle started to move up to 30–35 shortly after the performance feedback was given. In the Low-Arousal Condition, the needle continued fluctuating between 10 and 15. After 90 sec, the experimenter stopped the tape recorder, which caused the needle of the GSR display to drop to 0.

Dependent measures. At this point, the experimenter administered a causal attribution questionnaire and several manipulation checks. On the attribution questionnaire subjects were asked to indicate the degree to which ability, effort, task difficulty, and luck influenced their outcomes (Weiner et al., 1971). Each causal factor was presented with an 11-point scale running from "hindered greatly" through "had no effect" to "helped greatly" (Snyder, Stephan, & Rosenfield, 1976). The manipulation checks[2] inquired about subjects' opinions concerning how well they had done on the test, how aroused they felt after they found out how they had done, and how accurately they thought the GSR monitor measured the level of arousal they had experienced. The experimenter then probed for suspicions concerning the performance and the arousal feedback. Finally, a thorough debriefing was given.

Results

The manipulation check items were analyzed by means of a 2 (success vs failure) × 2 (high vs low arousal) analysis of variance. The question concerning perceived performance outcome (employing a 100-point scale) indicated that the outcome manipulation was successful, $F(1, 66) =$

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[2] An emotional reaction questionnaire, containing five positive and five negative items, was also administered. However, the results were complex (but not inconsistent with the theory) and will not be presented here.

428.50, $p < .01$ (M's = 29.9 vs 83.9). The second manipulation check asked how aroused the subjects felt after the performance feedback. High-arousal subjects ($M = 6.11$) reported being more aroused than low-arousal subjects ($M = 4.61$), $F(1, 67) = 12.92$, $p < .01$. In addition, successful subjects ($M = 6.16$) reported more arousal than unsuccessful subjects ($M = 4.51$), $F(1, 67) = 15.62$, $p < .01$. Another item asked how accurately the GSR monitor measured the level of arousal the subjects had experienced. A significant outcome main effect $F(1, 66) = 8.38$, $p < .01$ (M's = 6.89 for success vs 5.86 for failure), and a significant arousal by outcome interaction were found for this item, $F(1, 66) = 25.40$, $p < .01$. The interaction was due to the fact that high arousal was considered to be most accurate in the Success Condition (M's = 7.55 vs 6.30) whereas low arousal was reported as being the most accurate in the Failure Condition (M's = 4.82 vs 7.03). This result itself may be taken as an index of defensiveness, in that subjects who were told that they were highly aroused after failure tended to deny it.

Attribution factors. The attribution items were scored to reflect the degree to which the subjects regarded each factor as accounting for their outcomes. Factors that were perceived to have contributed to success were scored positively, whereas for failure, hindering factors were scored positively. For instance, high ability can be used to account for success and a lack of ability can account for failure so these attributions received positive scores. Thus, attributions to ability, effort, task difficulty, and luck were scored from +5 (helped greatly) to −5 (hindered greatly) for subjects in the Success Condition, but the scoring was reversed for subjects in the Failure Condition (Bernstein, Stephan, & Davis, 1979).

An internal attributional composite was formed by adding the attributions to the internal factors of ability and effort and an external attributional composite was formed by adding the external factors of task difficulty and luck. On the basis of the reasoning presented in the introduction, it was expected that the egotistical attributional pattern for success and failure (i.e., success is primarily attributed to internal factors whereas failure is primarily attributed to external factors) would be more pronounced when subjects received high-arousal feedback than when they received low-arousal feedback.

A four-way analysis of variance was run to test these predictions. There was one within-subjects factor: internal vs external attributions. The two between-subject factors of primary interest were: success vs failure and low-arousal vs high-arousal. In addition, a third factor, low achievement motivation vs high achievement motivation, was included, but because it yielded no results of interest, it will not be discussed further.

The predicted interaction among outcome, arousal, and locus of attribution (internal vs external) was not significant, $F(1, 67) < 1.00$ n.s.

As Table 1 indicates, the failure to obtain a significant three-way interaction was due to the fact that external factors were emphasized to about the same degree in all conditions. The differential attributions to internal factors yielded a significant outcome main effect, $F(1, 67) = 17.07$, $p < .01$, and a significant locus of attribution main effect, $F(1, 67) = 25.21$, $p < .01$. Success was attributed more to internal factors than was failure and, in general, internal factors were stressed more than external factors. Two interactions were also significant in this analysis. The first was the outcome × locus of attribution interaction, $F(1, 67) = 19.02$, $p < .01$, which was due to the fact that subjects in the Success Condition made greater differential attributions to internal factors than did subjects in the Failure Condition. The second significant interaction was the outcome × arousal interaction, $F(1, 67) = 4.27$, $p < .05$. It was due to the fact that in the Success Condition greater emphasis was placed on internal and external factors in the High- rather than in the Low-Arousal Condition, whereas the opposite tended to be the case for failure.

On this task egotism was reflected exclusively in attributions to internal factors. Thus, it seemed reasonable to pursue our predictions by analyzing the internal attributions separately (see Table 1). The analysis of the internal factors revealed an outcome main effect, again indicating that success was attributed more to internal factors than was failure, $F(1, 67) = 44.30$, $p < .01$. The outcome × arousal interaction was also significant, $F(1, 67) = 5.19$, $p < .05$, and it followed the predicted pattern. Subjects in the High-Arousal Condition took more credit for success and blamed themselves less for failure than subjects in the Low-Arousal Condition. Follow-up contrasts (Newman–Keuls) indicated that the arousal × outcome interaction was due primarily to the attributions of subjects in the Success Conditions ($p < .05$). Low-arousal subjects made slightly more internal attributions for failure than high-arousal sub-

TABLE 1
ATTRIBUTIONS TO INTERNAL AND EXTERNAL FACTORS IN EXPERIMENT 1

| | Outcome | |
Locus of attributions	Success	Failure
Internal factors		
Low arousal	4.76 (20)	2.72 (18)
High arousal	6.39 (18)	2.26 (19)
External factors		
Low arousal	2.05	2.05
High arousal	2.61	2.00

Note. The higher the number the greater the perceived contribution of these factors to the outcome. The numbers in parentheses are the cell frequencies.

jects, but this difference was not significant. Thus, low-arousal reduced egotistical attributions more for success than for failure.

An analysis of the external composite indicated that none of the effects was significant.

Discussion

The external attributional factors were unaffected by the arousal manipulation. In fact, the external attributions were not even influenced by the success–failure manipulation. Clearly, subjects considered external factors to be irrelevant when trying to explain the quality of their performance on the perceptual matching test. However, the arousal manipulation did have a significant effect on the subjects' attributions to internal factors.

High-arousal subjects displayed more egotism in their attributions to internal factors than did low-arousal subjects. The attributional differences between high- and low-arousal subjects were based primarily on subjects' attributions for success. Subjects in the High-Arousal Condition made more ego-enhancing attributions in response to success than did low-arousal subjects, but they did not make significantly more ego-defensive attributions for failure than did low-arousal subjects. The reason would appear to be that indicating that failure is related to an internal shortcoming could reduce a person's feelings of self-worth and thus would have high costs as a means of expressing reduced egotism for subjects in the Low-Arousal Condition. In contrast, modesty in response to success is a low-cost means of expressing reduced egotism, since a person's self-esteem is unlikely to be lowered by not taking credit for a successful performance. Also, subjects in the Failure Condition questioned the accuracy of the high-arousal feedback. It appears that they were attempting to deny the negative affect associated with failure. This may have reduced the need to make ego-defensive attributions for subjects in the high-arousal Failure Condition.

The results of the first study provided only limited support for the suggestion that affect mediates the relationship between outcomes and egotistical attributions. It was primarily internal attributions for successful outcomes that were attenuated by low levels of outcome-related arousal. In an effort to obtain additional evidence for the hypothesis that affect mediates egotism, a second study using a different manipulation was conducted.

EXPERIMENT II

In the first study the manipulation was designed to influence the relationship between outcomes and the affect elicited by these outcomes. This manipulation was directed toward stage 1 of our model, the outcome–affect link, under the assumption that influencing this link would

affect the second stage, the link between affect and attributions. The specific manipulation that was employed was aimed at influencing the level of arousal the subjects experienced after receiving outcome feedback. An alternative approach to studying the outcome–affect link is to manipulate the perceived source of the affect that is experienced in an achievement context.

In the second study this was done by using a misattribution paradigm (Schachter & Singer, 1962; Zanna & Cooper, 1976; Zillman, 1978) to create ambiguity about the source of the affective responses subjects experienced after receiving outcome feedback. The subjects performed an achievement task and then they were given a placebo. After they had ingested the placebo pill, they were given success or failure feedback. Half of the subjects were told that the placebo had no side effects. For the other half of the subjects, those in the Success Condition were told that the pill had positive arousing effects, whereas those in the Failure Condition were told that it had negative arousing effects.

The manipulation in the second study intervened at a later stage in the attribution process than the manipulation in the first study. In the second study no attempt was made to influence the magnitude of the affective responses that were elicited by the achievement outcomes. Instead, it was possible for subjects in the experimental conditions to explain their affective responses in terms of the effects of the placebo. Thus, this manipulation influences stage 2 in the model by providing an alternative explanation for the affective responses that typically lead to egotistical attributions. The model proposes that the function of egotistical attributions is to link the positive feelings elicited by success to internal attributes and to enable individuals to dissassociate themselves from the negative feelings elicited by failure. If the source of the affect experienced in an achievement situation becomes ambiguous, the motivation to make egotistical attributions should be reduced.

Method

Subjects. The subjects were 68 male undergraduates at the University of Texas who participated in the study to partially fulfill an experimental option in their introductory psychology classes. The data from 10 subjects were excluded from the final analysis due to suspicions concerning either the performance feedback or the suggested effects of the placebo pill. Not surprisingly, more subjects were suspicious about the correctness of the failure feedback (6) than the success feedback (2). Three subjects reported suspicions concerning the misattribution manipulation.

Procedure. Subjects reported to the experimental laboratory in groups of three. Upon arrival they were greeted and ushered into a room that was furnished with two screens. Subjects were seated so that they could see the experimenter but not each other. The experimenter then explained

that the purpose of the experiment was to study the effect of a drug, Cavanol, on logical reasoning. They were told that they would be working on Form A of the Test of Logical Inference Ability before taking the drug, and on Form B of the same test after the drug had been absorbed.

Manipulation of drug side effects. After completing the 25-item reasoning test, subjects were assured that the drug they would be taking was safe. Then they were told that departmental rules required that each subject sign a consent form. Three different consent forms had been prepared. For subjects in the Misattribution Condition, the consent form said that the drug had some immediate side effects that lasted about 20 min, but that these side effects were not harmful. In the Success Condition, the consent form continued as follows:

> This CAVANOL capsule you are being asked to take contains some chemical elements that are more soluble than other parts of the compound. In this form of the drug, these elements produce an immediate reaction of feeling unburdened and pleasant, perhaps mildly excited, prior to the total absorption of the drug. This side effect will disappear after 20 minutes.

In the Failure Condition, the consent form suggested that an immediate reaction of feeling "depressed and burdened, perhaps even anxious" was to be expected. Subjects in the Control Condition were given a consent form that indicated that the drug had no side effects at all, but that it would take 20 min for it to be absorbed. The experimenter randomly assigned these different forms to the subjects and asked each subject to sign one. Next, the subjects were given a capsule of "Cavanol" that actually contained baking soda.

Manipulation of performance outcome. The experimenter explained that while they were waiting for the drug to take effect, she would score their exams and tell them how they had done. The experimenter then left the room and returned 8 min later. Subjects in the Success Condition were individually informed that they had done very well, scoring in the 85th percentile of the college population. Subjects in the Failure Condition were individually informed that they had done poorly, scoring in the 25th percentile.

Dependent measures. The final phase of the experiment involved the administration of several rating scales. First, subjects were asked to indicate their performance on the test in percentile terms in order to check on the feedback manipulation. Next the subjects were asked to indicate their general affective reactions to the performance outcome on seven items employing an 11-point Semantic Differential format (excited–anxious, pleasant–unpleasant, good–bad, cheerful–uncheerful, happy–unhappy, upset–relaxed, burdened–unburdened). Finally, all subjects completed an attribution questionnaire that was identical to the one used in Experiment I. After subjects had completed this questionnaire, they were probed for suspicions and thoroughly debriefed.

Results

The results were analyzed by means of a 2 (success vs failure) × 2 (misattribution vs control) analysis of variance. The outcome manipulation was successful as indicated by a substantial main effect for outcome on the question that asked the subjects to indicate how well they had done, $F(1, 53) = 237.30$, $p < .01$ (M's $= 77.23$ vs 26.19). The affect items were combined into a composite index reflecting positive affect. Subjects in the Success Condition ($M = 7.58$) reported feeling more positively than subjects in the Failure Condition ($M = 6.52$), $F(1, 52) = 6.08$, $p < .02$. No other effects from these analyses were significant.

Attribution factors. The same scoring procedure used in Experiment I was used for the attributional questionnaire. Again, an internal and an external attributional composite were constructed by adding ability and effort for one composite and task difficulty and luck for the other.

If outcome-related general affect leads to egotism, subjects in the Misattribution Condition, who should have been uncertain about the source of the affect they were experiencing, should make less egotistical attributions than subjects in the Control Condition. The results of a 2 (success vs failure) × 2 (internal vs external attributions) × 2 (misattribution vs control) analysis of variance supported this prediction (Table 2). The three-way interaction was significant, $F(1, 53) = 4.45$, $p < .05$. As predicted, subjects in the Misattribution Condition did make less egotistical attributions than subjects in the Control Condition. A follow-up analysis of the internal and external factors indicated that the reduced egotism was more pronounced for the external factors, $F(1, 53) = 9.28$, $p < .01$, than for the internal factors, $F(1, 53) < 1.0$, n.s. Thus, subjects in the Misattribution Condition attributed failure less to external factors and success more to external factors than did subjects in the Control Condition.

TABLE 2

ATTRIBUTIONS TO INTERNAL AND EXTERNAL FACTORS IN EXPERIMENT II

Locus of attributions	Outcome	
	Success	Failure
Internal factors		
Control condition	4.92 (13)	1.19 (16)
Misattribution condition	4.54 (13)	1.47 (15)
External factors		
Control condition	− .38	2.06
Misattribution condition	2.15	.87

Note. The higher the number the greater the perceived contribution of these factors to the outcome. The numbers in parentheses are the cell frequencies.

The interaction between outcome and locus of attribution was also significant, $F(1, 53) = 14.62$, $p < .01$. This interaction indicated that subjects made more egotistical attributions for success than for failure. In addition, there was a significant outcome main effect, $F(1, 53) = 5.64$, $p < .05$, which, as in Experiment 1, was due primarily to the fact that the subjects invoked internal factors more when explaining success than when explaining failure.

Discussion

The results of the second study also indicate that affect plays an important role in egotistical attributions. There was clear evidence that for the external factors of task difficulty and luck, egotistical attributions were attenuated by providing an opportunity to attribute the arousal elicited by outcome feedback to an irrelevant source. Subjects who were given a "drug" that they were told would cause affective reactions similar to those caused by success or failure on a task, attributed their failures less to external factors and their successes more to external factors than did subjects who were not given the "drug." Thus, consistent with our three-stage model, egotism was attenuated when the source of the affect experienced in an achievement situation was made ambiguous. These results supplement those recently reported by Fries and Frey (1980), who found that after failure an opportunity to misattribute negative affect to a pill led to reduced ego-defensive attributions. The results of the present study extend these findings to include reduced ego-enhancing attributions for success as well as reduced ego-defensive attributions for failure.

In study I reduced egotism was expressed by modifying the perceived contribution of internal factors, whereas in study II the perceived contribution of external factors was most strongly affected. There are a number of differences in the methods employed in the two studies that may account for these results, the most likely of which is the nature of the tasks. In the first study a perceptual matching task was employed. This task may not have been as ego involving as the task in the second study which measured abstract reasoning ability. It may be easier to express reduced egotism by deemphasizing the role of ability and effort in achieving success and emphasizing the role of lack of ability and effort in causing failure when the ability is not one that is central to self-esteem. As the abilities involved become more important, reduced egotism may be more likely to take the form of emphasizing the role played by external factors in achieving success and deemphasizing the role of external factors in causing failure. The advantage of using external factors to express reduced egotism is that the individual can continue to perceive himself/ herself as possessing a valued ability.

The use of a misattribution paradigm in the second study may also have contributed to the reliance on external factors in moderating expressions of attributional egotism. Creating ambiguity about the source of the arousal that the subjects were experiencing probably did not create ambiguity concerning the importance of the abilities required by the reasoning task. In contrast, in the first study we expected subjects in the Low-Arousal Condition to conclude that their low arousal after the task was due to the unimportance of the task. Thus, the low-arousal manipulation itself, rather than anything intrinsic to the task, may have led to the perception that outcomes on the task were relatively unimportant. Regardless of the source of the perception that performance on a task is unimportant, the perception that it is unimportant should lead to less concern about possessing the relevant abilities.

The portion of our model that addresses ego-defensive attributions for failure bears some similarity to Lazarus' concept of cognitive appraisals of stressful events (Lazarus, 1967, 1977). In both approaches cognitive assessments of a situation determine the subsequent labeling of emotion, and in both models prior arousal may cause the cognitive assessment. However, in Lazarus' model cognitive appraisal leads to coping, while in the present model cognitions are used directly to cope with negative arousal; i.e., ego-defensive attributions are made. The need for a separate model of the outcome–affect–attribution–emotion process for achievement situations becomes apparent when the outcome is success. Lazarus' model is more suited to explaining the emotions experienced in the stressful situations he studied than to explaining positive outcomes. For positive outcomes the situation does not set in motion a cognitive appraisal process that leads to coping, since little coping is necessary. Instead, attributions are typically made that will justify labeling the positive affective reactions in self-aggrandizing emotional terms (e.g., pride).

Our model and the results that support it are consistent with Weary's approach to the outcome–affect–attribution issue (Bradley, 1978; Weary, 1980). However, Weary's (1980) correlational data supporting the existence of a relationship between affect and attribution do not explicitly test the mediational role played by affect. Weary concludes that affect experienced during or after a task influences the attributions that are made, and that these attributions will, in turn, influence subsequent levels of affect. This view does not distinguish between the general level of affect elicited by outcome feedback and the subsequent labeling of this affect to be consistent both with its positive or negative tone, and with the attributions that are made for the outcomes. Thus, the present model follows the same flow pattern as Weary's, but is more explicit in distinguishing between general affect and labeled emotions, and in specifying the determinants of the labeled emotions.

CONCLUSION

The results of the present studies are difficult to explain in terms of the most frequently cited alternative explanations for nonsymmetrical attributions for success and failure. The expectancy confirmation approach (Miller & Ross, 1976) assigns no role to affect and thus would not make differential predictions for studies in which arousal is manipulated. On the basis of this approach, it would be predicted that because people expect to succeed on the basis of their abilities, they should attribute success to internal factors and failure to external factors, regardless of level of arousal. A second alternative explanation suggests that egotistical attributions serve self-presentation needs (Miller, 1978). If attributions in achievement settings are designed to maximize rewards from others and minimize social costs (Weary & Arkin, 1981; Schneider, 1969), internal arousal levels should be irrelevant. Thus, the fact that affect mediates attributions cannot be accounted for by this approach either.

In contrast to more cognitively oriented models of achievement attributions, the present study conceives of the individual as having a pervasive desire to view himself/herself positively. Success and failure are therefore considered to be affectively significant events. The results of both experiments suggest that outcome-related affect is a potential mediator of attributional egotism. It appears that the positive or negative affect elicited by outcome feedback leads people to make egotistical attributions for success and failure. Thus, the three-stage model relating outcomes, achievement-related affect, attributions, and emotional reactions receives tentative support in the present set of studies.

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