

# Praise or Blame? Affective Influences on Attributions for Achievement

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Three experiments showed that mood influences achievement attributions and that cognitive processes underlie these effects. In Experiment 1, happy Ss made more internal and stable attributions for success than failure in typical 'life dilemmas'. In Experiment 2, attributions for real-life exam performance were more internal and stable in a happy than in a sad mood. Dysphoric moods resulted in self-critical rather than self-enhancing attributions, contrary to motivational theories, but consistent with cognitive models and the clinical literature on depression. In Experiment 3 this pattern was repeated with direct self vs. other comparisons, and for self-efficacy judgments. The results are interpreted as supporting cognitive rather than motivational theories of attribution biases. The implications of the results for clinical research, and contemporary affect-cognition theories are considered.

The way people explain success or failure may have profound consequences for their social adjustment and well-being. Do such judgments depend on how they happen to feel at the time? Affective influences on social judgments have been of interest to artists and philosophers since ancient times. Recent research suggests that moods indeed influence many cognitive processes that are also involved in social judgments (Bower, 1981, in press; Clore, in press; Forgas, 1989; Forgas & Bower, 1987, 1988; Forgas, Bower, & Krantz, 1984; Isen, 1984; Schwarz & Clore, 1988). Surprisingly, the role of affective states in explanations of achievement has received relatively little attention. Yet motivational approaches to attributions have long implied the importance of affect in such judgments. This series of experiments explores the role of transient moods in guiding achievement explanations for self and others, and the conflicting implications of cognitive and motivational theories are compared and evaluated.

## Explanations of Achievement

The way people account for success and failure has long been of particular interest to psychologists. Following Heider (1958), Weiner (1974, 1980) proposed that causal dimensions such as locus and stability, as well as controllability, are central to explanations for achievement. Numerous studies have supported the reliability and validity of these causal dimensions (Elig & Frieze, 1979; Forgas, 1981; Meyer, 1980; Russell, 1982), which have become the dominant measures used to study causal attri-

butions in the literature (cf. Hewstone, 1983). Evidently, people tend to attribute success internally and failure externally, and do so more for themselves than for others when explaining such achievement outcomes as exam performance (Arkin & Maruyama, 1979; Davis & Stephan, 1980). The dimensions of internality and stability were found to be sensitive to positive and negative biases in explanations, and thus appear well suited to assess mood effects on attributions.

Attributional biases are usually explained either in terms of motivational factors, such as a self-serving bias (Bradley, 1978; Feather & Simon, 1971), or in terms of cognitive factors, such as the different informational perspectives of judges (Ross, 1977; Taylor & Fiske, 1975). Experiments 2 and 3 were designed to provide data relevant to evaluating these two alternative models.

Although Heider's (1958) theories placed strong emphasis on the perceiver's subjective experience, attribution researchers have paid relatively little attention to individual differences and the personal states and characteristics of judges, such as their emotional states (Mayer & Salovey, 1988). Yet several early studies found that affect may influence a variety of social judgments (Feshbach & Singer, 1957; Griffitt, 1970), an effect originally explained in terms of either psychoanalytic (Feshbach & Singer, 1957) or conditioning principles (Byrne, 1971; Griffitt, 1970).

Achievement attributions may also have significant affective consequences. Internal and stable attributions for success often make people feel more happy, proud, and relaxed (Arkin & Maruyama, 1979; Weiner, Russell, & Lerman, 1978). Affect also influences expectations of success or failure (Brown, 1984; Kavanagh & Bower, 1985), and such predicted outcomes are more likely to be ascribed to stable rather than unstable causes (Brown, 1984; Feather & Simon, 1971). Motivated, ego-defensive attributions are also more likely to be made when subjects

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feel aroused after a failure (Gollwitzer, Earle, & Stephan, 1982; Stephan & Gollwitzer, 1981). Despite the early recognition that affective states may motivate causal attributions (Bradley, 1978; Wills, 1981), little systematic exploration of this link has been undertaken.

### Clinical Implications

Affective influences on attributions may be particularly important in depression. Depressed people are more likely to explain their failures in terms of stable, internal causes (Anderson, Horowitz, & French, 1983; Garber & Hollon, 1980). In contrast, judgments by depressed students temporarily induced to feel elated showed an increased "illusion of control" (Alloy & Abramson, 1979). However, negative moods may not always influence explanations of failure by normal subjects (Brown, 1984).

Whether self-deprecatory attributions and beliefs are an antecedent or a consequence of depression remains unclear (cf. Eaves & Rush, 1984). However, evidence that depression-related cognitions arise concomitantly with depression suggests that negative cognitions are the symptom and consequence, rather than the antecedent, of dysphoria (Lewinsohn, Steinmetz, Larson, & Franklin, 1981; Miranda & Persons, 1988). Data from our experiments will be relevant to this issue, as evidence for mood-based distortions in attributions due to temporary dysphoria would clearly indicate that depressogenic attributions are the consequence, and not the cause, of negative affect (Lewinsohn et al., 1981).

As the above overview suggests, the existing clinical and experimental evidence for mood effects on attributions is far from conclusive, and the processes underlying such influences are not yet clearly understood. Yet a better understanding of the role of moods in everyday attributions is of considerable practical as well as theoretical importance. Many personal, social, and legal decisions are based on causal attributions and inferences. The processes mediating mood-based distortions in social judgments and attributions, in particular, deserve serious attention.

Theoretically, transient moods may influence attributions in at least two ways: (a) by their impact on *cognition* and information processing strategies (cf. Bower, 1981, in press; Clore, in press; Isen, 1984; Leventhal, 1980), and (b) their influence on *motivation*. Cognitive and motivational explanations have often been contrasted as alternative accounts for attributional biases, with somewhat inconclusive results (Zuckerman, 1979). Our first experiment aimed to establish that affective states do impinge on attributions in systematic ways, consistent with hypotheses derived from contemporary affect-cognition theories (Bower, 1981; Forgas & Bower, 1988). The second experiment contrasted the way cognitive versus motivational models would account for such judgmental distortions by comparing attributions to self and others for real-life success and failure outcomes. The goal of the third experiment was to replicate and extend these findings.

### Experiment 1

Our earlier studies have shown that transient affective states may influence a variety of social and personal judgments

(Bower, 1981, in press; Forgas & Bower, 1987; 1988; Forgas et al., 1984; Forgas & Moylan, 1987). The present experiment sought to demonstrate that mood also systematically affects complex achievement attributions. As part of the study, subjects who received a positive or negative mood induction or no mood induction were asked to explain why people succeeded or failed in complex, realistic tasks such as succeeding in a new job, passing a test, or winning a game. These vignettes were based on Kogan and Wallach's (1964) "life dilemmas," which have been used successfully in previous attribution research (cf. Forgas, 1981).

### *Affect and Explanations*

According to contemporary affect-cognition theories, feelings influence social judgments such as attributions because of the inherently complex and ambiguous character of most social situations and the necessarily selective, top-down, inferential and constructive nature of most social judgments (Forgas & Bower, 1988; Heider, 1958; Kelly, 1955). Recent affect-cognition theories (Bower, in press; Clark & Isen, 1982; Isen, 1984) indicate that mood states can influence social judgments by (a) priming mood-consistent constructs that influence the interpretation of ambiguous details, (b) facilitating the selective recall of mood-consistent information, and (c) focusing selective attention and learning on mood-consistent details of a complex stimulus. In conjunction, these processes act to bias social judgments in a mood-consistent direction: People in a happy mood should make more positive, lenient, and favorable judgments and attributions than people in a negative mood. Similar predictions may also be derived from alternative models, such as Leventhal's (1980) schema approach or Schwarz and Clore's (1988) "affect-as-information" formulation.

Several recent studies provide supporting evidence. We found that people dwell longer on mood-consistent information about a person, remember such details better, and make more mood-consistent judgments about a variety of targets (Forgas et al., 1984; Forgas & Bower, 1987, 1988; Forgas, Burnham, & Trimboli, 1988). Mood was also found to have a significant influence on such realistic social judgments as personnel selection decisions (Baron, 1987), interpersonal choices (Forgas, 1989), and a range of economic, political, and personal judgments (Clore, in press; Forgas & Moylan, 1987; Isen, 1984; Schwarz & Clore, 1988; for a review, see Forgas & Bower, 1988).

Consistent with clinical evidence (Ottaviani & Beck, 1988), dysphoric moods often lead to more negative self-assessments than other-assessments (Forgas et al., 1984). This difference presents a problem for simple, universal network models but may be explained by a more elaborated, selective priming model. Critical judgments of the self and generous judgments of others in dysphoria may be consistent with affect-priming models, if one assumes that negative mood does not indiscriminately lead to the priming of all negatively valenced thoughts, "universal priming," but selectively primes constructs and interpretations previously experienced in dysphoria, "selective priming," irrespective of their valence. Such thoughts in negative moods are more likely to involve selective self-deprecation and other-enhancement. In a bad mood, thinking badly of one-

self but well of others is not only consistent with dysphoria but is likely to enhance it.

How might these processes apply to attributions for success and failure in realistic life dilemmas? The greater availability of mood-consistent constructs and interpretations should lead judges to make more positive, benevolent judgments and attributions when feeling good, and more critical, unfavorable attributions when feeling sad, particularly about themselves. In achievement domains, attributing successes to internal and stable causes and failures to external and unstable causes corresponds to such a favorable and positive judgmental strategy. The positivity bias associated with good mood may also tend to counteract the self-serving bias previously found to distort attributions to others (Bradley, 1978; Davis & Stephan, 1980). In other words, happy subjects should generally make more positive attributions than neutral or sad subjects (Brown, 1984).

## Method

*Overview, design, and subjects.* Following a false-feedback mood-manipulation procedure (see Forgas & Bower, 1988), in an ostensibly separate study subjects were asked to read eight life dilemmas and to make attributions to stable versus unstable and internal versus external causes for success and failure outcomes. The experiment used a  $3 \times 2$  between-subjects design, with mood (positive, control, or negative) and outcome (success or failure) as the independent variables and attribution judgments of internality and stability as the dependent variables. Ninety-six volunteer college students participated in the study.

*Stimulus materials.* Eight of Kogan and Wallach's (1964) descriptions of life dilemmas were selected as most relevant to the present sample. A final paragraph was added to each story describing the risky/cautious choice made by the protagonist and the ensuing success/failure outcome. For example, in story 1 an electrical engineer is faced with the choice of staying in a stable but low-paying job or moving to a better-paid job with an uncertain future. There were four alternative endings: "Mr. A. decided to accept (reject) the new job offer" (eventually) "Mr. A was made a partner with a considerable increase in salary (lost his job)." These achievement scenarios were randomly assembled into questionnaire booklets, so that each booklet contained two different stories in each of the four conditions—risky-successful (RS), risky-failure (RF), cautious-successful (CS), and cautious-failure (CF). Previous research with these stimuli indicated the appropriateness of these scenarios for attribution research (Forgas, 1981).

*Dependent measures.* After reading each achievement scenario, subjects were asked to indicate on 7-point scales how important each of the four causal factors initially suggested by Weiner (1974) were in explaining the outcome. The factors were the person's ability or lack of ability (A), the person's effort or lack of effort (E), the ease or difficulty of the situation (S), and good or bad luck (L). These are by far the most commonly used categories in attribution research, and they have been found to be reliable and valid measures of attributions in a variety of achievement situations and across different cultures, corresponding well with free-response attributions (Elig & Frieze, 1979; Forgas, 1981; Meyer, 1980). Attributions to these four causal categories were combined to yield two indices: stability ( $A + S - E - L$ ) and internality ( $A + E - S - L$ ). The use of these combined categories is supported by extensive empirical evidence from the attribution literature, as well as a priori theoretical considerations (Weiner, 1974). Internality and stability were found to be basic dimensions of causal attributions for achievement (Meyer, 1980; Russell, 1982) that have been central to attribution theories since Heider's (1958) first definition of the field

and are likely to be particularly sensitive to mood-induced positive and negative biases.

*Mood manipulation and procedure.* Subjects were tested individually and told that two brief but unrelated experiments would be conducted by two different experimenters during the session to save subject time. The first experiment (in effect, the mood manipulation) was introduced as a test of verbal abilities. Subjects were given 5 min to complete a series of 33 sentences of the kind "Car is to road as train is to . . .," presented on a single sheet and ranging from very easy to very difficult, with the last eight questions, although plausible, having no determinate answers (e.g., "Bread is to butter as river is to . . ."). A pilot study established that, on average, 19 questions were completed in 5 min, with everyone completing at least 13 questions in that time.

Depending on the mood condition, subjects were told that "most people find these questions quite easy and complete all items in less than 5 minutes" (negative mood condition) or that "most people find these questions increasingly difficult and rarely complete more than 10 items in 5 minutes" (positive condition). The control group was told that "the questionnaire is being pilot tested" and that they "should try to complete as many questions as they can, without worrying about difficult or confusing items that may have to be revised." After the 5-min interval, the questionnaire was collected and the experimenter, apparently "scoring" the responses, gave positive, negative, or neutral feedback to subjects about their performance (e.g., "This is very good/not very good. Your performance is well above average/below average on this task. Your verbal skills are obviously well above the average/below the average."). In the control condition, subjects were simply thanked for their help and were told that their responses would be helpful in revising the test. Finally, a postexperimental questionnaire (in fact, a mood-validation measure) was administered, asking subjects a number of distraction questions (e.g., sex, age, course, and previous experience with verbal tests) and asking them to rate how they felt on a 7-point happy-sad scale. Finally, all subjects were thanked for their help and the first experimenter left the room.

A second experimenter then appeared, and introduced the attribution task as a study in "social perception." Subjects were told to read the eight stories carefully, and then answer some questions about each of them. The achievement scenarios and response scales were self-explanatory, and all subjects completed this task in less than 15 min. The procedure was concluded with a debriefing session, where the hypotheses and procedures were fully explained, and care was taken to eliminate any negative after effects of the mood manipulation. As part of the debriefing, it was also established that none of the subjects correctly identified the hypotheses or suspected a link between the two experiments.

## Results and Discussion

First, a one-way analysis of variance (ANOVA) of mood self-ratings was carried out to establish the effectiveness of the mood manipulation,  $F(2, 93) = 6.45, p < .01$ . Following the positive mood induction, self-rated mood was significantly more positive (2.03 vs. 3.27),  $t(62) = 4.31, p < .01$ , and following negative induction significantly more negative (5.98 vs. 3.27),  $t(62) = 6.33, p < .01$ , than ratings by the control group.

Next, in two separate  $3 \times 2$  ANOVAs the influence of mood (happy, control, or sad) and outcome (success or failure) on the internality and stability of attributions was evaluated. Attributions to *internal* causes were significantly influenced by mood,  $F(2, 90) = 5.86, p < .01$ , by the success/failure outcome,  $F(1, 90) = 7.52, p < .01$ , and by the interaction of these two variables,  $F(2, 90) = 12.76, p < .01$ . Attributions to *stable* rather than *unstable* causes were also significantly influenced by the

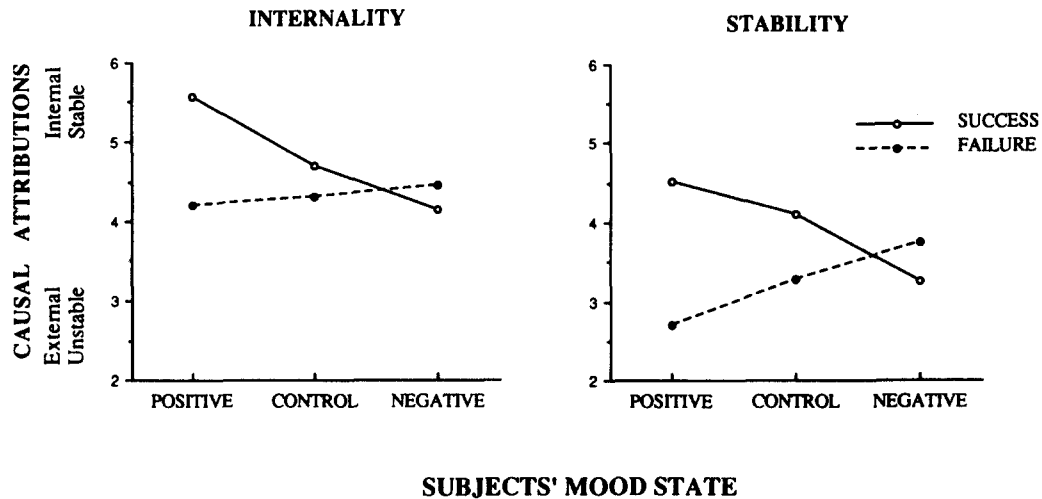


Figure 1. The effects of transient mood on attributions of success and failure in hypothetical life dilemmas: internality and stability of perceived causes.

success/failure outcome,  $F(1, 90) = 9.44, p < .01$ , as well as the interaction of mood and achievement outcome,  $F(2, 90) = 18.24, p < .01$ . Overall, subjects experiencing a positive mood made more internal attributions, and successful outcomes were generally more likely to be attributed to internal and stable causes (see Figure 1).

Of special interest here is the significant interaction of mood and success/failure outcome on attributions. Control subjects tended to make internal,  $t(30) = 2.13, p < .05$ , and stable,  $t(30) = 3.64, p < .01$ , attributions for success rather than failure (Figure 1). This baseline positivity bias was greatly enhanced by a positive mood both for internality,  $t(30) = 6.49, p < .01$ , and for stability,  $t(30) = 12.11, p < .01$ . Negative mood, in contrast, resulted in the elimination of this positivity bias: Attributions of both internality and stability by dysphoric subjects were not significantly different for success or failure. This pattern of "benevolent" explanations when feeling good, giving credit for success without assigning blame for failure, and the absence of this tendency when feeling sad appears consistent with cognitive (Bower, in press, Forgas & Bower, 1988) models. Rules and interpretations assigning credit for success and denying blame for failure are more likely to be primed and available in good than in bad moods. In terms of motivational principles, being less generous toward others when feeling "down" may also enhance people's relative image of themselves (cf. Stephan & Gollwitzer, 1981; Wills, 1981).

Experiment 1 was thus successful in demonstrating that transient moods do have a strong influence on attributions for achievement events, generally biasing such judgments in a mood-consistent direction. Although these results go well beyond the previously available evidence for mood effects on attributions, important theoretical as well as methodological questions remain about the nature of these processes. These were addressed in Experiment 2.

### Experiment 2

A possible criticism of Experiment 1 concerns the use of fictitious stimuli. This method, although widely used in attribu-

tion research, may suffer from problems of limited external validity. To overcome this problem, Experiment 2 examined attributions for a real-life achievement event—exam performance. Looking at attributions to others only, Experiment 1 could also not deal with the question of actor-observer differences, one of the more puzzling issues both in attribution research and in research regarding mood effects on social judgments (Forgas et al., 1984). Accordingly, Experiment 2 was designed to contrast mood effects on achievement attributions to the self, as well as others. Third, the mood manipulation in Experiment 1, false feedback about verbal performance, itself relies on an achievement outcome for its effectiveness. This may have introduced unforeseen confounding with the attribution task. To avoid this potential problem, Experiment 2 manipulated mood using films, a technique that has no achievement implications. Finally, and perhaps most important, Experiment 2 was designed to enable us to contrast cognitive and motivational explanations of mood effects on attributions.

### Cognitive Versus Motivational Accounts

Given some recent evidence suggesting that affect and cognition may function as "partially independent mental systems" (Swann, Griffin, Predmore, & Gaines, 1987, p. 881) in interpersonal contexts, the experimental comparison of cognitive and motivational accounts of how mood influences achievement explanations is particularly timely. According to cognitive models, affect may influence social judgments by influencing the availability of cognitive constructs. For example, dysphoric moods may selectively prime thoughts associated with negative feelings, resulting in self-deprecatory but other-enhancing judgments.

Another type of explanation is motivational, pointing to the often controlled, self-serving consequences of affective states (Clark & Isen, 1982). Self-enhancement theory implies that people are motivated to feel good about themselves, and compensatory self-enhancement predicts that people will be particularly prone to such egotistic biases after negative experiences, such as

dysphoric mood (Swann, Pelham, & Krull, 1989). Such “downward comparisons” (Wills, 1981) are a common feature of many everyday situations. For example, Schachter’s (1959) classic studies of affiliation showed that people who are anxious are motivated to selectively seek out potentially rewarding others. We found a similar pattern in a recent study of social judgments (Forgas, 1989). Dysphoric mood appeared to motivate people to focus on potentially rewarding outcomes, ignoring other features of the task. In attribution judgments, such self-serving biases should be most marked in negative moods, where people have the most to gain and least to lose by using self-enhancing judgments (Wills, 1981). Indeed, arousal intensity following failure may be related to the extent to which ego-defensive attributions are employed (Gollwitzer et al., 1982; Stephan & Gollwitzer, 1981). According to motivational accounts (Wills, 1981), and the principle of compensatory self-enhancement in particular (Swann et al., 1989), we would expect people in a dysphoric mood to be more likely to selectively attribute their successes rather than failures to internal and stable factors, and to denigrate others by doing the opposite.

In summary, both the cognitive and the motivational hypotheses predict a positivity bias and the relative decrease of self versus other differences in attributions by happy subjects. However, the two theories have different implications regarding dysphoric moods. According to the cognitive model, subjects in a bad mood should be inclined to make negative, unfavorable attributions, blaming stable and internal causes for failures but not for success. Cognitive models as well as clinical research imply that such negativity biases may be stronger in judgments about the self than others, as other-enhancement and self-deprecation are likely to be a feature of the cognitive constructs and interpretations associated with past incidents of dysphoria. Indeed, negative moods were often found to have greater effects on judgments about the self than others, both in “normal” and in depressive populations (Forgas et al., 1984; Ottaviani & Beck, 1988). Motivational accounts, in turn, predict exactly the opposite reaction by subjects in a sad mood: a self-serving bias leading to favorable attributions to the self and highly critical attributions to others.

## Method

*Overview, design, and subjects.* The study was introduced to subjects as two unrelated but consecutive experiments. First, subjects viewed 10-min films previously found to induce happy or sad mood states. A control group received no mood induction. Next, subjects indicated (a) whether they were satisfied with their exam performance in the prerequisite course and (b) their attributions for their own performance and the performance of others. The study incorporated a  $3 \times 2 \times 2$  design, evaluating the influence of two between-subject factors, good versus bad mood and success versus failure, and one within-subjects factor, attributions to self versus others. Subjects were 136 students who participated in this study as part of their course requirements.

*Mood manipulation.* Mood was induced through 10-min film sequences, introduced to subjects as part of a pilot study to select audiovisual stimuli for a later experiment. The positive film contained edited sequences from a highly successful British television comedy series. The sad film contained scenes depicting tragic and depressing episodes from a film dealing with death from cancer. Control subjects received no mood manipulation. Films as mood manipulators avoid

the potential carryover effects to the experimental task, and have been found to induce strong and enduring mood states with significant effects on social judgments (Forgas & Bower, 1988; Forgas & Moylan, 1987). Self-rated mood ratings on 7-point happy-sad scales following the films were obtained to validate the mood manipulation.

*Procedure and materials.* The attribution questionnaire was introduced as dealing with “students’ perceptions of examinations, and the end-of-session examination in the prerequisite course in particular.” The first question asked subjects, “Were you generally satisfied with your performance on this exam?” Next, all subjects were asked to (a) attribute their exam performance to four causal categories (effort, ability, luck, and the situation) and (b) make similar attributions for the performance of an “average,” typical student in the class on 5-point important-unimportant scales. As in Experiment 1, judgments were again combined into measures of internality and stability, with larger values indicating more internal or stable attributions. The procedure concluded with a careful debriefing, designed to eliminate residual negative mood effects. Debriefing uncovered no evidence of demand characteristics or subject awareness of the manipulations.

*The success/failure variable.* On the basis of their self-reported satisfaction with their exam performance (question 1), “successful” ( $n = 67$ ) and “unsuccessful” ( $n = 69$ ) students were identified. There were no significant differences in the proportion of successful and unsuccessful students in the three mood conditions (21 vs. 24 in happy, 23 vs. 23 in control, and 23 vs. 22 in sad moods),  $F(2, 133) = .87, ns$ . This operationalization of achievement is consistent with earlier research (e.g., Arkin & Maruyama, 1979), and was also independently validated here in terms of the actual exam performance of the two groups. On a scale of 1–100, the actual mark obtained by “satisfied” or successful students was 72.60, compared with 59.99 for the “dissatisfied” or unsuccessful group, a highly significant difference,  $t(134) = 6.52, p < .01$ . A similar link between satisfaction and actual performance was reported by Arkin and Maruyama.

## Results and Discussion

The manipulation check revealed significant overall mood differences,  $F(2, 133) = 13.28, p < .01$ , with both happy ( $n = 45, M = 2.69$ ) and sad ( $n = 45, M = 4.40$ ) subjects rating their mood as significantly different from the control group ( $n = 46, M = 3.39$ ),  $t(89) = 3.78, p < .01$ , and  $t(89) = 4.41, p < .01$ . These results confirm the effectiveness of the present mood manipulation procedure.

*Mood effects on attributions to internal versus external causes.* Two main effects appeared in judgments of internality. Overall, happy subjects were more likely than sad subjects to make internal attributions,  $F(2, 124) = 4.71, p < .05$ . Second, subjects made significantly more internal attributions for success than they did for failure,  $F(1, 124) = 5.35, p < .02$ . However, attributions to internal causes were also significantly influenced by the three-way interaction of mood, success/failure, and judgmental target,  $F(2, 124) = 7.83, p < .01$  (see Figure 2).

These results (Figure 2) shed new light on the role of moods in moderating attributional distortions. In the control group, the usual self-serving pattern was repeated: More internal attributions were made for successes rather than failures for the self,  $t(44) = 3.16$ , but not for others. Subjects in a positive mood displayed a similar tendency, attributing their successes internally and failures externally,  $t(43) = 3.29, p < .01$ . Surprisingly, in good mood such benevolent attributions were also extended to others, who also received more internal attributions for success than for failure,  $t(43) = 4.01, p < .01$  (left panel of Figure 2).

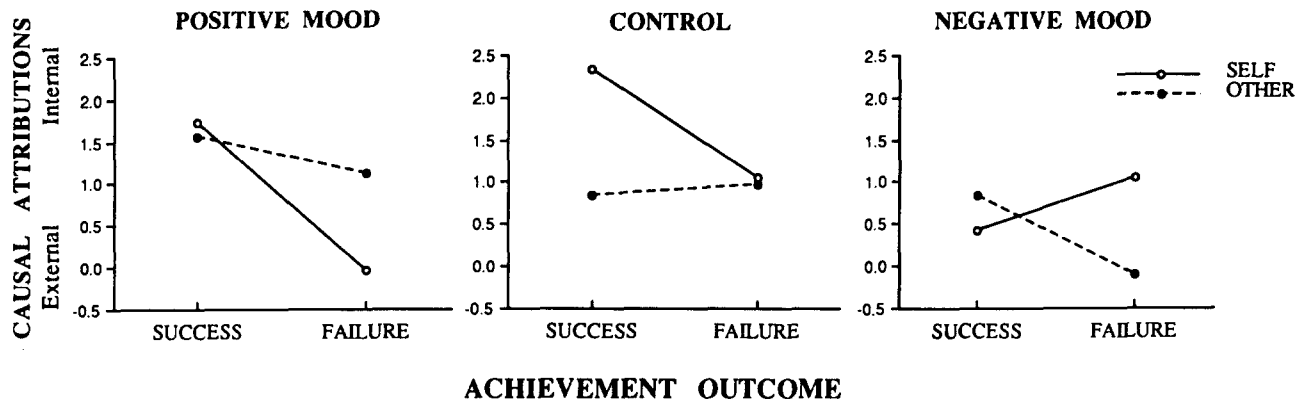


Figure 2. The effects of transient mood on attributions of exam performance by successful and unsuccessful students: internal versus external causes.

In contrast, subjects in a *negative* mood made more internal attributions for their own failures rather than successes, in effect “blaming” themselves for failing,  $t(43) = 2.38, p < .02$ . However, the strategy of blaming failure on internal causes only applied to themselves, not to others. Sad subjects continued to give internal causes for success and external causes for failure in others,  $t(43) = 2.50, p < .01$ . In summary, we found that a happy mood produced an increasingly “generous” attributional disposition, with more internal attributions for successes both for the self and for others. In contrast, sad subjects were particularly critical of themselves in taking responsibility for failures but not for successes, without being similarly critical of others.

According to the motivational theory of attributions (Bradley, 1978) and the notion of compensatory self-enhancement in particular (Swann et al., 1989; Wills, 1981), subjects should have the greatest need to engage in self-enhancing attributions when they are feeling down. The fact that our sad subjects did just the opposite clearly contradicts the motivational model. However, the findings are generally consistent with cognitive mood-priming theories, and previous research regarding mood effects on social judgments in particular. Consistent with those studies, we found that negative distortions induced by sad moods are often confined to judgments about the self and not others (Bower, in press; Forgas et al., 1984, 1988; Forgas & Bower, 1987), a pattern also confirmed by research on depression (Ottaviani & Beck, 1988).

*Mood effects on attributions to stable versus unstable causes.* The outcomes of others were more likely to be attributed to stable causes than the outcomes of the self,  $F(1, 124) = 5.54, p < .01$ . This result is consistent with people’s tendency to see the behavior of others as more likely to be controlled by stable, predictable causes than their own behaviors (Heider, 1958).

Of greater interest here is the significant interaction of mood, success/failure outcome, and judgmental target,  $F(2, 124) = 4.16, p < .02$ . In neutral,  $t(43) = 2.56, p < .01$ , and in positive moods,  $t(43) = 3.57, p < .01$ , more stable attributions were made for success than failure for the self. But when judging others, the opposite occurred: Failures were more likely to be attributed to stable causes than were successes both by control,  $t(43) = 3.69, p < .01$ , and by good mood,  $t(43) = 4.32, p < .01$ , subjects (see Figure 3). The selective attribution of our successes

to more stable causes than our failures appears generally consistent with the self-serving bias hypothesis. However, this tendency was limited to good mood and control subjects. Exactly the opposite occurred in the negative mood condition. Sad subjects identified more stable causes for their failures than their successes, and did so only for themselves and not for others. This bias again seems incompatible with the self-serving motivational hypothesis, but may be explained in terms of cognitive biases caused by a dysphoric mood state.

These results generally support and extend the findings of Experiment 1, suggesting that transient moods may have a significant and nonobvious influence on the attribution of responsibility for real-life success or failure outcomes, both in the self and in others. Overall, people in a positive mood are inclined to make more self- as well as other-enhancing positive interpretations, locating the causes of success in stable and internal factors rather than unstable and external factors. The most interesting finding here is that the self-serving bias found in the positive and control groups was reversed rather than enhanced by a negative mood. Dysphoric subjects seem to have adopted a self-blaming strategy, as often found in depression (Anderson et al., 1983). It is as if sad subjects selectively concentrated on negative evaluations to bring social reality into harmony with their negative self-beliefs, suggesting that cognitive reactions to dysphoria may be at least partially independent from affective reactions (Swann et al., 1987, 1989).

Within a clinical context, these results demonstrate that transient moods are capable of eliciting depressogenic attributions in a normal population, supporting the view that cognitive distortions are more likely to be the consequence rather than the antecedent of negative affect (cf. Lewinsohn et al., 1981).

The role of dysphoric mood in triggering different attributions to self versus others is a particularly interesting result. Critical attributions to the self but benevolent attributions to others in a negative mood may be consistent with mood-priming theories if one assumes that dysphoria does not simply or indiscriminately prime negatively valenced thoughts (e.g., “Others are failures”), but leads to thoughts that have been selectively associated with negative feelings in the past (e.g., “Others are better, more successful than I am”). Similarly, positive

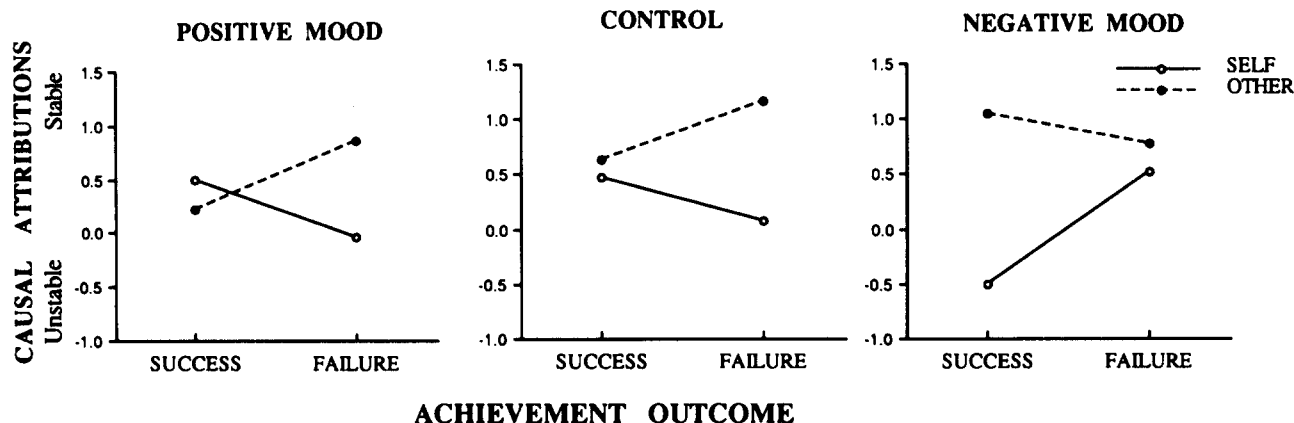


Figure 3. The effects of transient mood on attributions of exam performance by successful and unsuccessful students: stable versus unstable causes.

moods may not simply lead to undifferentiated positive thoughts, but to thoughts that have been associated with positive feelings (e.g., "Others may be successful, but I am more so."). This conceptualization of the model is entirely consistent with the original affect-priming principles, and is capable of accounting for most of the self-other differences in dysphoric mood found in normal as well as clinical populations (cf. Forgas et al., 1984; Ottaviani & Beck, 1988).

Experiment 3 was designed to further extend and verify the results of Experiment 2. In particular, the differential influences of mood on attributions to self versus others were evaluated using a new set of dependent variables. Instead of separate attribution judgments of self and others, subjects had to directly compare the relative contribution of each causal factor to the outcomes of themselves versus others. Such comparative judgments are not in themselves valenced, and no mood effects would be expected in terms of a simple, universal mood-priming model. However, if mood priming involves the selective activation of cognitions associated with past positive or negative personal experiences, irrespective of their valence, comparative self-other ratings should be affected by the emotional state of the judge. In order to expand and further validate the results of Experiment 2, Experiment 3 also examined how mood influenced subjects' expectations of their future exam performance, or self-efficacy (Bandura, 1977), as well as their estimates of "typical" exam performances by themselves and others.

### Experiment 3

In Experiment 2, attribution judgments for self and other were collected separately, a method that may have contributed to the observed self-other differences. Suppose that transient moods have a selective influence only on self-relevant judgments, preferentially reminding subjects only of their own achievement outcomes in previous situations (Bower, in press, Forgas & Bower, 1988). This could account for the deprecatory judgments of the self but not others in a bad mood. To control for this possibility, in Experiment 3 subjects directly rated the relative importance of four causal categories to the achievement

outcomes of themselves versus others in a single judgment, a method that should eliminate selective reminding effects.

Using single comparative judgments also makes it possible to test the prediction that affect primes thoughts previously associated with that affect irrespective of valence (selective priming), rather than all similarly valenced cognitive contents (universal priming). Self-deprecation and other-enhancement in dysphoria are consistent with the selective priming model, but not with universal priming. When judgments are not in themselves valenced yet contain self-other comparisons as in Experiment 3, mood effects would support the selective priming but not the universal priming explanation.

In addition, we also assessed the influence of mood on subjects' perceptions of the examination marks they originally expected to get, their perception of the average mark obtained by others in the course, and their judgment of their likely mark on the next exam. These judgments were collected for two reasons. Considerable evidence now suggests that transient mood states can influence perceptions of probable future performance in achievement situations. Such self-efficacy judgments, in turn, have a significant influence on ultimate performance (Bandura, 1977; Kavanagh & Bower, 1985). The demonstration in Experiment 3 of transient mood effects on self-efficacy in exam performance should provide supporting evidence for the behavioral consequences of the findings in Experiments 1 and 2. The predicted mood effects on estimates of exam performance would also corroborate the patterns found in the first two studies, thus providing useful additional evidence establishing the convergent validity of the findings. In all other respects, Experiment 3 replicates Experiment 2.

### Method

**Subjects.** Subjects were 129 students who participated in the experiment as part of their course requirements.

**Materials and procedure.** The procedure described in Experiment 2 was followed in all respects. However, the format of attribution judgments was changed to direct ratings of self-other differences. Subjects were asked to "rate yourself in comparison with other students in terms of the following characteristics" (effort, luck, ability, and the

situation) as explanations for their performance, on 5-point scales ranging from *above average importance* (1) to *below average importance* (5). Subjects were also asked to indicate (a) their actual mark on the exam, (b) the mark they originally expected to receive, (c) their estimate of the average mark received by other students on the exam, and (d) their prediction of the future mark they expected to receive in the current course.

Subjects were subdivided into "successful" ( $n = 61$ ) and "unsuccessful" ( $n = 68$ ) groups in terms of their satisfaction with their exam performance, a classification validated by their actual obtained marks (73.16 vs. 57.88),  $t(127) = 8.12$ ,  $p < .01$ . The proportions of successful and unsuccessful students in the happy (20 vs. 22), control (21 vs. 22), and sad (20 vs. 24) groups were not significantly different from each other,  $F(2, 126) = .047$ , *ns*.

## Results and Discussion

*Validations of the mood manipulation.* The mood manipulation had a significant overall effect on mood self-ratings,  $F(2, 126) = 11.20$ ,  $p < .01$ , with both positive ( $M = 2.38$ ) and negative mood ( $M = 4.15$ ) subjects rating their mood as significantly different from the control group ( $M = 3.42$ ),  $t(83) = 9.33$ ,  $p < .01$ , and  $t(83) = 6.97$ ,  $p < .01$ .

*Mood effects on comparative attributions to self versus others.* When subjects directly compared themselves with others in terms of *internal* causes, mood had a significant overall effect on attributions,  $F(2, 123) = 4.96$ ,  $p < .05$ . Internal causes were rated as more important for the self than others in a negative mood, but not in neutral or positive moods. However, this effect was dependent on whether subjects were successful or unsuccessful, as indicated by a significant mood by success/failure interaction,  $F(2, 123) = 6.60$ ,  $p < .01$ . In neutral and positive moods, internal factors were seen as relatively more important to the self than others by successful compared with unsuccessful students,  $t(41) = 5.34$ ,  $p < .01$ , and  $t(42) = 3.79$ ,  $p < .01$ .

These results replicate with direct comparative judgments the self-serving bias found in Experiment 2. In contrast, negative mood subjects judged internal causes to be of greater importance in explaining their own failures than the failures of others,  $t(43) = 8.22$ ,  $p < .01$ . This pattern confirms the findings of Experiment 2, suggesting that in a negative mood attributions are more critical of the self than of others (see Figure 4).

Mood and success/failure similarly interacted in attributions to *stable* versus *unstable* causes,  $F(2, 123) = 7.177$ ,  $p < .01$ . Dysphoric subjects rated stable factors as of greater importance in explaining their failure than the failure of others, but did the reverse when explaining success,  $t(43) = 15.23$ ,  $p < .01$  (Figure 4). This result also supports the findings of Experiment 2. As these differences were based on single judgments requiring the direct comparison of self versus others, it is unlikely that these responses are due to a selective-reminding effect specific to the self. By demonstrating such mood-induced judgmental differences in ratings that are in themselves not valenced, but rather require the direct comparison of self with others, these data provide further evidence that is consistent with the selective mood-priming model but is difficult to reconcile with motivational explanations of attributional biases.

*Mood effects on estimates of exam marks.* Past achievement had a significant effect on subjects' retrospective judgments of their *expected* marks: Successful students expected higher exam

marks than did unsuccessful ones (72.77 vs. 65.18),  $t(127) = 11.32$ ,  $p < .01$ . Moreover, students induced to feel happy reported higher retrospective expectations than did students induced to feel depressed, 70.76 versus 67.34,  $t(127) = 6.54$ ,  $p < .01$ , although the estimates of both of these groups were not significantly different from those of the control group (see Figure 5).

Estimates of the *mean* mark obtained by others at the exam were influenced by the interaction of mood and success/failure,  $F(2, 123) = 6.30$ ,  $p < .02$ . In a neutral mood, estimates of the average class performance were the same irrespective of whether the subject had done well or poorly. Mood also had no marked influence on the estimates of average class performance by successful students. However, mood had a strong influence on estimates by unsuccessful students. Students in a negative mood gave much higher estimates of average class performance than students in positive moods,  $t(84) = 7.96$ ,  $p < .01$ . This suggests a tendency by dysphoric students to downgrade their own performances, consistent with Experiment 2. By inflating others' achievements, one's own unsuccessful performance is placed in a particularly unfavorable light.

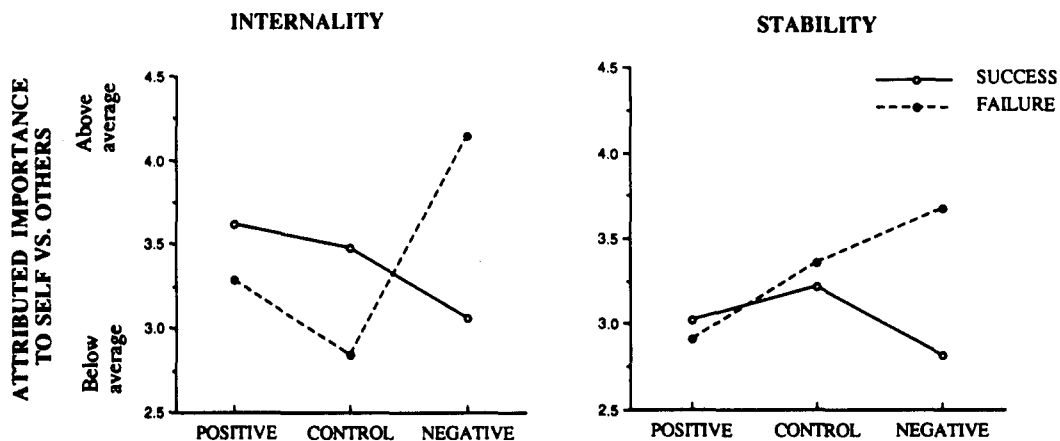
Mood also had a significant influence on predictions of future performance, or self-efficacy judgments. Students in a positive mood predicted significantly higher marks for themselves than did those in negative moods,  $F(2, 123) = 9.42$ ,  $p < .01$ . This result is consistent with prior research concerning mood effects on self-efficacy and performance. It seems that mood plays a significant role not only in the explanations and judgments people make about past achievement events, but also in their expectations and future performance (Kavanagh & Bower, 1985).

A significant interaction between mood and success/failure sheds more light on this question,  $F(2, 123) = 8.62$ ,  $p < .004$ . Future expectations were more influenced by mood among unsuccessful than among successful students (Figure 5). Those who failed in the earlier exam underestimated their future performance in a dysphoric mood, and overestimated their performance in a positive mood, when compared with the control group,  $t(44) = 3.49$ ,  $p < .01$ , and  $t(42) = 4.03$ ,  $p < .01$ . Mood made no significant difference to estimates following success. In other words, future expectations and self-efficacy judgments were most sensitive to mood effects after unsuccessful outcomes. Following failure, depressed students "dumped" on themselves, whereas positive mood students made even more optimistic predictions than did students who had been successful in the past. This result is consistent with data from depressed subjects (Garber & Hollon, 1980; Ottaviani & Beck, 1988), and again fails to show evidence for any ego-defensive bias among negative mood subjects. Rather, self-efficacy judgments were distorted in the direction of a prevailing mood state, presumably due to the greater availability of mood-consistent constructs and memories (Kavanagh & Bower, 1985).

## General Discussion

Our three experiments offer convergent evidence for the strong influence of transient emotional states on causal attributions for achievement. Using different mood induction procedures, different hypothetical and "real" attribution contexts,





**SUBJECTS' MOOD STATE**

Figure 4. The effects of transient mood on direct comparisons of the causes of success and failure in the self versus others: attributions to internality and stability.

and several different dependent measures, all three experiments showed that mild affective states not unlike those commonly experienced in daily mood fluctuations have surprisingly powerful and nonobvious consequences for achievement attributions. These results are of obvious practical as well as theoretical relevance. To the extent that attributions for achievement are among the most common social judgments people make, with widespread implications for how they evaluate themselves and others, mood-based distortions in such explanations may be of particular applied interest for therapists, managers, politicians, and many others professionally involved in making interpersonal judgments.

The evidence from these three experiments also suggests that negative mood states are more likely to result in self-deprecating rather than self-serving attributions. In other words, people

in a dysphoric mood seem to prefer explanations that emphasize internal and stable rather than external and unstable causes for their failures. The well-known self-serving attributional bias was only displayed by subjects experiencing neutral, and to a lesser extent, positive moods. These findings are also of importance to clinical research on depression. The demonstration of depressogenic attributions by normal subjects suffering temporary dysphoria here supports Lewinsohn et al.'s (1981) proposal that dysfunctional cognitions are symptoms and consequences, rather than antecedents, of dysphoria.

Why would people in a dysphoric mood be particularly prone to self-blaming attributions and abandon self-serving distortions in their judgments? Although this finding may at first appear surprising in the context of the attribution literature, evidence from other research on social judgments lends it

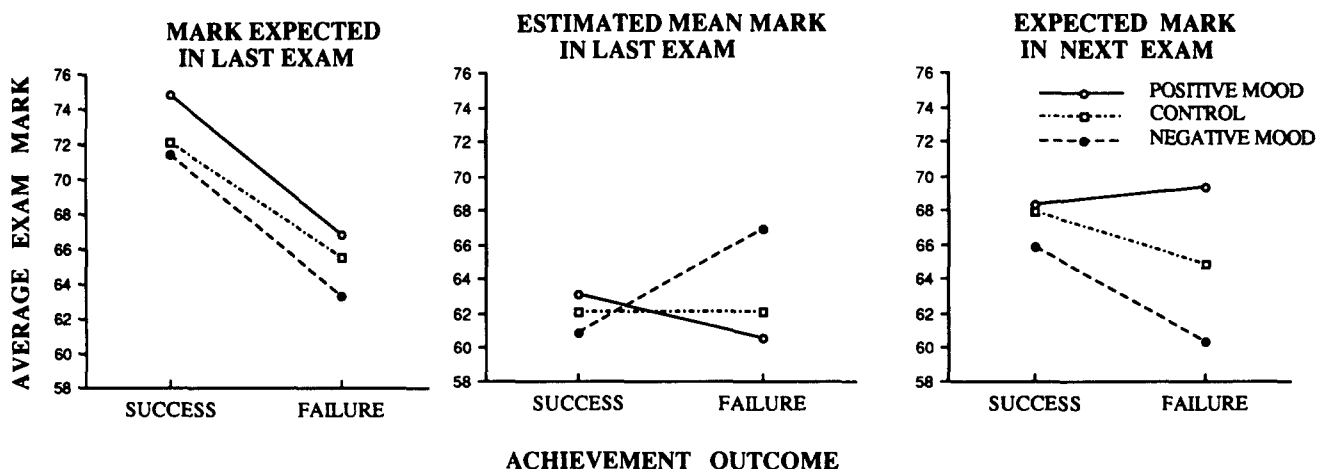


Figure 5. The effects of transient mood on judgments of (a) the exam mark originally expected, (b) the mean exam mark in the course, and (c) the estimated future exam mark.

credence. For example, in the clinical literature on depression considerable cumulative evidence suggests that depressed patients are prone to negatively distort their memories, their perceptions of themselves, and the feedback they receive from others, but that these distortions are typically restricted to self-relevant judgments and do not affect judgments of others (Anderson et al., 1983; Garber & Hollon, 1980; Ottaviani & Beck, 1988). Similar results have been obtained recently in studies of normal people experiencing transient dysphoric moods. In a study by Forgas et al. (1984), students experiencing hypnotically induced negative moods made significantly more negative and fewer positive judgments of their own videotaped social performances but not those of others. Other studies also have confirmed the generality of this pattern (Forgas & Bower, 1987, 1988; Forgas et al., 1988).

Given that people in a negative mood should be especially motivated to engage in defensive attributions (Bradley, 1978; Wills, 1981), the cumulative evidence from our three experiments is inconsistent with motivational explanations of attributional bias. Instead of an increased tendency to blame external factors for failures when feeling sad, our subjects did just the opposite—they blamed themselves. Such results seem more consistent with cognitive theories, postulating the priming and increased accessibility of mood-consistent categories to be used in judgments.

However, the symmetrical and relatively context-independent mood effects implied by universal priming models are rarely obtained in realistic social judgments (Bower, in press; Forgas et al., 1984; Mayer & Salovey, 1988; Schwarz & Clore, 1988). More commonly, mood effects, particularly in dysphoric moods, are target specific. For example, subjects in a bad mood are more likely to make critical judgments of themselves than of others (Forgas et al., 1984), just as depressed patients often do (Ottaviani & Beck, 1988). Our results can be best understood in terms of a selective mood-priming model that predicts that negative affect may prime thoughts and cognitions previously associated with negative feelings, irrespective of their valence. These may include *both* self-deprecatory and other-enhancing categories in dysphoria. Recent work on the dynamics of social comparison processes certainly lends credence to such a functional view of self–other differences (Swann et al., 1987, 1989). The detailed elaboration of the boundary conditions for such a selective priming model remains an urgent task for affect-priming theorists.

The studies reported here also suggest that many everyday attributional distortions may, in fact, be understood in terms of information processing rather than motivational processes. Although the roles of cognitive and perceptual biases in attribution have long been recognized (Ross, 1977; Taylor & Fiske, 1975), the information processing strategies involved in attribution judgments have rarely received detailed analysis. Future research needs to address not only the real-life, practical implications of mood-based distortions in everyday social judgments (cf. Baron, 1987), but also the exact relationship between the cognitive and affective aspects of interpersonal responses (Swann et al., 1987).

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