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RELOCATING MOTIVATIONAL EFFECTS: A SYNTHESIS OF COGNITIVE AND MOTIVATIONAL EFFECTS ON ATTRIBUTIONS FOR SUCCESS AND FAILURE

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The long-standing debate over motivational biases as explanations for asymmetrical (i.e., self-serving) attribution patterns for success and failure is examined in the present paper. Following the suggestion of Tetlock and Levi (1982), our analysis focuses on development of a more precise model of attribution processes, rather than on pitting motivational and cognitive models against each other. We propose a two-stage attribution model, in which motivational manipulations influence the selection of the knowledge structures to be used in the subsequent selection of an attribution. Three experiments demonstrate that a popular ego-involvement manipulation does, in fact, change the perceived relevance of several self-beliefs, and that this knowledge-structure effect does produce the typical asymmetrical pattern of attributions for success and failure, even in uninvolved (i.e., not ego-motivated) observer subjects. It is suggested that the location of motivational impact is at the problem-formulation stage of an attributional task, but is not at the attribution-selection stage. Implications for future research are discussed.

The cognition–motivation debate concerning attributions for success and failure has continued for more than 15 years. The basic phenomenon is that people usually accept more responsibility for their successes than for their failures. Do such results reflect basic motivational needs, or more mundane informational and cognitive processing effects?

Periodic reviews reveal the difficulties of the underlying issues, the progress in understanding attribution processes, and the shortcomings of the theorizing on both sides of the debate. Miller and Ross

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(1975) concluded in their review that most past motivational studies in this area could be explained easily by various judgmental or cognitive processes, without reference to motivational constructs. For example, people usually expect to succeed, not to fail, and expected outcomes are more likely to be attributed to oneself than unexpected ones.

Subsequently, a number of researchers attempted to provide stronger evidence for the motivational position by addressing the Miller and Ross criticisms of earlier motivational studies. Zuckerman's review of the literature in 1979 concluded that clear evidence of motivational biases had resulted from these attempts. But other theorists remained unconvinced (e.g., Tetlock & Levi, 1982; Wetzel, 1982).

Tetlock and Levi shed considerable light on this confusing debate by providing a broader philosophy-of-science view. They cogently argued that the cognitive position could explain all the evidence marshaled by the motivational theorists, but that this was in large part due to the lack of specificity and falsifiability of the cognitive position. The motivational position fared no better in their analysis; "motivational theories are even less precise and integrated than their cognitive counterparts" (p. 83).

The conclusion drawn by Tetlock and Levi was that the competing theories both required further development. In the present paper, we first provide a more precise description of the attribution process. Then we apply our analysis to one specific paradigm that, according to Zuckerman (1979), demonstrates a motivational bias in attributions for success and failure. Rather than reviewing the extensive literature in this domain, we urge the interested reader to consult previous reviews (e.g., Bradley, 1978; Miller & Ross, 1975; Tetlock & Levi, 1982; Zuckerman, 1979).

A TWO-STAGE ATTRIBUTION MODEL

Our current model is actually an elaboration of one proposed by Anderson (1983a), and draws heavily from Kruglanski's (1980) work. We conceive of explanation processes in general, and attribution processes in particular, as consisting of two stages. In the first, the explanation problem is formulated. That is, the event to be explained is considered, the relevant guiding knowledge structure (schema) is activated, and information that it suggests is needed to solve the problem is sought from the present situation and from other knowledge structures about the target person's (the self or other) past. Together,

these knowledge structures provide information about the likely causes of the event, types of information needed to assess these various causal candidates, and the effects or implications of these causes for oneself or others who might be told of the final attribution. The selection of a particular guiding knowledge structure for analysis of a particular event depends upon its salience, availability, or accessibility, and upon its featural similarity to the salient aspects of the current event or situation. Thus, if the event is an interpersonal success, only knowledge structures that include interpersonal features and success features will be considered. Similarly, if the situation calls for impression management, only knowledge structures containing social theories about the efficacy of various self-presentation strategies will be considered.[1]

In the second stage, the information gathered (from the present and recalled from the past) and made salient by the guiding knowledge structure is examined. An explanation is chosen based on how well the information fits with the various causal candidates (or set of candidates, as in Leddo, Abelson, & Gross, 1984). If none fit well enough, the person either gives up or returns to the first stage in search of an alternative guiding knowledge structure.

Motivational concerns influence the process in two ways. In one type of situation, others (e.g., friends, superiors, subordinates) will be privy to and may act on the attribution. Such impression-management situations must be analyzed with a knowledge structure that contains impression-management goals.

The second type of situation is when people make private attributions. We propose that here too, motivational variables such as ego involvement influence the selection of the guiding knowledge structure by modifying featural (informational) similarity. People with different levels of ego involvement have different information about the situation, and therefore select different knowledge structures as guides to explanation seeking.

EVIDENCE

There is considerable evidence that attribution selection (the second stage) is nonmotivational, as we have proposed. For instance, prior expectations strongly influence attribution choice, and manipulations

1. We assume that all such knowledge structures are based on past experience (direct or indirect) with similar events. They may range in form from formal verbal propositional structures, such as explicit social theories (e.g., Anderson, New, & Speer, 1985), to nonverbal image scenarios (e.g., Anderson, 1983b). The most common form may be a mixture, looking like Abelson's concept of "scripts" (Abelson, 1981).

that reduce perspective-based information differences also reduce attributional differences (e.g., Eisen, 1979; Feather & Simon, 1971a, 1971b; Rusbult & Medlin, 1982; Wetzel, 1982).

Evidence for the first stage, though, is scanty and often indirect. To assume the existence and function of knowledge structures is not controversial, of course; considerable support exists in the research on categorization (e.g., Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976), story comprehension (e.g., Bower, Black, & Turner, 1979), and memory (e.g., Wyer, Bodenhausen, & Srull, 1984), as well as in more social-psychological research (e.g., Leddo *et al.*, 1984; see also Nisbett & Ross, 1980). The importance of goals in the selection, use, and recall of knowledge structures is also well established (e.g., Bower, 1976; Hoffman, Mischel, & Mazze, 1981; Wyer, Srull, Gordon, & Hartwick, 1982). But more specific predictions from this two-stage model are less obvious and have less empirical support.

One such prediction concerns the causes generated in the first stage. Our model suggests that different types of causes will be generated for different types of situations. Anderson (1983a) provided clear evidence of this "causal-structure" effect as a function of both the interpersonalness of the situation and the outcome (success vs. failure) of the situation.

A second prediction is that attributions (at the second stage) will be closely related to the causal structure (assessed at the first stage). In addition, the model predicts that the correlation between causal structure and attribution will be larger when the attributor has little information to use in selecting an attribution (and thus must use the default value of the knowledge structure) than when much relevant information is available. These hypotheses have also been confirmed (Anderson, 1985).

A final prediction that has received some empirical attention concerns a seemingly innocuous attribution manipulation. By changing the causal candidates (and the knowledge structure) selected at the first stage for consideration at the second stage, we should be able to produce corresponding changes in later behavior. Our model predicts that such changes could result from priming a specific category of causes or knowledge structures, making it temporarily more accessible (e.g., Higgins & King, 1981). In fact, several experiments have shown that simply mentioning a particular type of cause prior to actual task performance produces the expected changes in such diverse attribution-related variables as success expectancies, motivation, and task performance (Anderson, 1983c; Anderson & Jennings, 1980; Jennings, 1980; Kiesler, Nisbett, & Zanna, 1969). The model also sug-

gests that these effects should be stronger when the highlighted cause differs from the type of cause normally selected for that situation by the subject. Anderson (1983c) provided evidence that supported this prediction: Subjects with a maladaptive attributional style were most influenced by an adaptive attribution prime, whereas those with an adaptive attributional style were most influenced by a maladaptive attribution prime.

THE CURRENT ISSUE

One major aspect of this model for which there is no empirical evidence concerns the postulated effects of motivational manipulations, such as ego involvement. To examine these issues, we selected for study one of the three studies that Zuckerman (1979) cited as clear support for the motivational bias position; these studies were by Miller (1976), Sicoly and Ross (1977), and Stevens and Jones (1976). According to Zuckerman, a critical design feature of all three studies was that "crucial variables . . . were manipulated after the task had been completed, so subjects' experience while performing the task could not be affected" (p. 259). This suggested to Zuckerman (and to the authors of the original papers) that informational differences between groups could not explain the observed *motivational pattern*[2] of attributional differences. Our position (see also Tetlock & Levi, 1982) is that this critical design feature has no bearing on the cognition–motivation issue. Our model does not deny that motivational manipulations have impact on the final attributions made. It does specify that any effects would take place through changes in stage-one processes, by influencing the knowledge structure selected for use and the information seen as relevant to the attributional anaysis. Of the three, the simple yet elegant study by Miller (1976) appeared to us the most compelling, in part because of other interpretational ambiguities in the other two. Thus, we applied our model to Miller's paradigm.

The Miller (1976) study experimentally varied task outcome (success vs. failure) and ego involvement (high vs. low) on a social perceptiveness test. Ego involvement was manipulated after subjects had completed the social perceptiveness test, by telling them that the test was either highly valid or invalid (high- or low-involvement, respectively). The high-involvement instructions also stated that the test was "a well established social perceptiveness test . . . positively correlated with . . . intelligence, personal and marital happiness, and job satisfaction" (p. 902). The low-involvement instructions stated that the test "had not been found to correlate with any of the factors known to be related to social perceptiveness" (p. 902).

The data revealed that subjects accepted more responsibility for success than for failure, and did so to a greater extent in the high-involvement conditions than in the low-involvement conditions. Whereas the success–failure main effect is congruent with a cognitive position (i.e., success is more congruent with efforts, intentions, and expectations than is failure), the interaction with ego involvement was seen by Miller and by Zuckerman as evidence of a motivational bias at work on the attributions. However, Miller did not specify how or at what stage the bias was operating.

Our model proposes that motivational manipulations influence knowledge-structure selection at the first stage, and that different kinds of information gathered at the first stage are used in attribution selection at the second stage. In the present case, we believe that the ego-involvement manipulation makes several belief systems relevant to attributional analysis for the high-involvement subjects (such as intelligence, interpersonal happiness, job satisfaction) but not for low-involvement subjects. This suggests examination of two questions. First, does the involvement manipulation lead to differences in the perceived relevance of certain information? Second, do the obtained informational differences lead to the motivational pattern of attributions observed by Miller (1976)? One problem in answering these questions is that the knowledge-structure selection properties of the manipulation are totally confounded with the supposed motivational goal of protecting or enhancing one's ego or self-esteem. Thus, knowledge-structure differences resulting from the manipulation may be due to differing levels of ego-involvement (as suggested by Miller) or to the nonmotivational stage-one processes we have proposed. One way to eliminate this difficulty is to eliminate the ego-involvement differences, and to see whether the expected knowledge structure and attributional differences still obtain. If so, then the ego-involvement explanation of the effects of the motivational manipulation may be superfluous. Three experiments, using observer subjects to eliminate any ego-involvement differences, were conducted to examine these questions.

2. By "motivational" (or "self-serving" or "ego-defensive") patterns, we simply mean attributions that make the attributor look good. Of course, such motivational patterns can result from numerous sources, including purely nonmotivational factors. The terms are thus descriptive, not explanatory.

EXPERIMENT 1

OVERVIEW

Subjects first read a description of the social perceptiveness test. The description included either the high- or the low-involvement manipulation, taken from Miller (1976). Subjects then listed the kinds of supplemental information they thought would be important in explaining any given person's score on that test. Subjects next rated the relevance/importance of several different kinds of supplemental information in trying to understand test performance. Included were kinds of information that were explicitly a part of the ego-involvement manipulation and thus should be in the knowledge structure selected by high-involvement but not low-involvement subjects (e.g., intelligence). Finally, subjects rated themselves on each of these same dimensions, as a measure of the content of the belief systems made salient for high-involvement subjects.

By looking at the self-generated supplementary information and the relevance/importance ratings, we can see whether the ego-involvement manipulation produced the predicted information differences. The final self-ratings provided us with measures of the self-beliefs of this subject population.

METHOD

Subjects

Sixty male and female Rice University undergraduates were randomly assigned to either the high- or the low-involvement condition. Subjects were run in small-group sessions (two to seven) and received credit toward a class requirement.

Procedure

Subjects were informed that the study involved how people evaluate the test performances of others. They were further told that different subjects would be examining different tests, and that their responses to the experiment would remain anonymous. Each subject was then presented with a booklet describing the "Social Perceptiveness Test." Embedded in these descriptions were the validity data and descriptions used by Miller (1976) as a manipulation of the ego involvement of test takers. (Although the present subjects knew they were not going to take the test and thus were not likely to be more or less "involved" as a function of the manipulation, the designations "high and low *involvement*" will be used rather than "valid and invalid *test*," to make the connection to Miller's (1976) study easier for the reader to maintain.) The major differences between the high- and low-involvement descriptions were that the high-involvement version (1) had been given to over 100,000 people (vs. 100); (2) was used by employment agencies and businesses to assist in client and employee decisions; and (3) claimed that high test scores were related to several desirable characteristics, such as intelligence, personal and marital happiness, and job satisfaction (see Miller, 1976).

Following examination of the test description, subjects were to "list the kinds of supplemental information that would be important in explaining a given person's high or low score on the test." Subjects were also informed that "for some tests in this study there may not be any kind of information that is truly relevant to understanding someone's performance. If this is true of the test you are considering, do not list anything."

Subjects were next asked to rate the relevance/importance of seven kinds of information in understanding test performance. The instructions once again reminded subjects that not all kinds of information would be relevant to all the tests under study in the experiment. Four of the kinds of supplemental information were from the high-ego-involvement manipulation: intelligence, personal happiness, marital happiness (interpersonal happiness if unmarried), and job satisfaction (including school if a student). The other kinds of information, included to maintain the cover story that several tests were under consideration and to assess generalized rating effects of the involvement manipulation, were mechanical experience, eye–hand coordination, and past interpersonal performance. The ratings were made on 9-point scales anchored at "not at all relevant or important" (1) and "very relevant or important" (9).

Finally, subjects rated themselves on each of these seven kinds of information, using 9-point rating scales anchored at "much lower" (1) and "much higher" (9) than their high-school classmates. After completing these materials, subjects were given a thorough explanation of the study.

RESULTS AND DISCUSSION

Whereas Miller's (1976) interpretation of his results did not specify how or where the motivational manipulation would have its impact, we suggested that motivational influences (including the ego-

involvement manipulation) have their effect by creating informational differences prior to the attribution-selection stage (the second stage). Thus, it was predicted that high-ego-involvement subjects would see the four involvement-manipulation kinds of information as being more relevant or important to understanding someone's test performance.

Each subject's free listing of desired supplemental information was examined for the presence of at least one of the kinds of information included in the involvement manipulation. As predicted, significantly more subjects in the high-involvement condition spontaneously listed at least one (77% vs. 33%), χ^2 (1) = 11.38, $p < .001$.

As shown in Table 1, high-involvement subjects also rated each of these four involvement-manipulation kinds of supplemental information as being more important or relevant than did low-involvement subjects, t's (58) > 2.00, p's < .05. Also shown in Table 1 are the corresponding ratings for three kinds of information not mentioned in the high-involvement manipulation. As expected, there were no differences between the high- and low-involvement groups in the rated relevance/importance of these measures.

Thus, it is clear that the motivational manipulation of Miller (1976) creates informational differences, and does so not through ego involvement itself. This does not imply, though, that the manipulation is a poor operationalization of ego involvement. Indeed, this manipulation seems to capture the concept quite well. Our point is that motivational manipulations are to a great extent informational manipulations.

Subjects' self-ratings on these seven dimensions were not affected by the involvement manipulation (all p's > .15). The main purpose of obtaining these ratings was to assess the general self-belief orientation of this population of subjects on the dimensions that were seen as differentially relevant or important to understanding performance on the social perceptiveness test. The average rating on each of the four involvement-manipulation dimensions was significantly higher than the scale midpoint, t's (59) > 6.14, p's < .001. On the 9-point scales (1 = "much lower than average," 9 = "much higher than average"), the mean ratings were as follows: intelligence, 7.7; personal happiness, 6.9; marital (interpersonal) happiness, 6.4; and job (school) satisfaction, 7.0. As expected, this college-student population has a positive or success orientation. Miller's (1976) finding that high-ego-involvement subjects showed a stronger "self-serving" attributional bias is thus quite understandable in nonmotivational (at the attribution stage) terms. Highly involved subjects perceived that several positive self-belief systems were relevant to the assessment of task performance (i.e., intelligence, personal satisfaction, etc.). Thus,

TABLE 1
Relevance/Importance Ratings of Seven Kinds of Supplemental Information

EXPERIMENTAL INSTRUCTIONS	KIND OF SUPPLEMENTAL INFORMATION							
	INTELLIGENCE[b]	MARITAL HAPPINESS[b]	JOB SATISFACTION[b]	PERSONAL SATISFACTION[b]	MECHANICAL EXPERIENCE	EYE-HAND COORDINATION	PAST INTERPERSONAL PERFORMANCE
High ego involvement[a]	7.10	7.13	6.60	7.36	2.06	2.20	7.27
Low ego involvement[a]	6.03	6.00	5.53	5.90	2.66	2.57	7.57
t (58) high-low	2.95**	2.21*	2.03*	2.95**	−1.34	−0.81	−0.67

[a] All means are based on 9-point rating scales. Higher scores indicate greater perceived relevance or importance to understanding test performance.
[b] These kinds of supplemental information constitute a major part of the ego-involvement manipulation.
* $p < .05$.
** $p < .01$.

the perceived congruence of success with self-beliefs was exaggerated for these subjects, as was the incongruence of failure. Experiment 2 was conducted to test this link between created information differences and attributional asymmetries.

EXPERIMENT 2

OVERVIEW

This experiment examined whether the informational differences created by Miller's (1976) ego-involvement manipulation (as demonstrated in Experiment 1) could lead to the attributional asymmetries often interpreted as motivationally induced. Observer subjects were given the task of "evaluating the test performances of other people." Either the valid "high-ego-involvement" or the invalid "low-ego-involvement" description of the Social Perceptiveness Test from Experiment 1 (and from Miller, 1976) was first presented. Then, brief nondiagnostic background information and a composite profile of a purportedly real test-taker were given to subjects in the "high-involvement" conditions. Those in the "low-involvement" conditions received only the background information. The composite profile was based on the average self-ratings of Experiment 1 subjects on the four informational dimensions that differentiate the two levels of ego involvement. Finally, subjects were informed of the test taker's success or failure on the test, and were asked to account for the outcome by use of the attribution rating scales used by Miller (1976). This design therefore recreated the informational differences between Miller's high-and low-ego-involvement conditions, in uninvolved observer subjects. We predicted essentially the same "self-serving" pattern of attributions discovered by Miller—that is, success (more than failure) would be attributed to internal factors (social perceptiveness and effort), whereas failure (more than success) would be attributed to external factors (difficulty and luck). More importantly, the interaction of outcome and "ego involvement" should be significant, with the self-serving pattern being more predominant for high-involvement subjects.[3]

3. Note again that the two information groups are here labeled as "high-involvement" and "low-involvement," to facilitate comparisons with Miller's results. Obviously, these observer subjects differed in which kind of information they received, not in actual ego-involvement.

METHOD

Subjects

Twenty-two male and female Rice University undergraduates participated in small-group sessions (two to four), and received either credit toward a course requirement or $3.00. Each subject was randomly assigned to one of two information conditions, reflecting the informational pattern made salient by the high-ego-involvement manipulation (high-involvement information) or the low-ego-involvement manipulation (low-involvement information) used by Miller and in Experiment 1 above. In addition, a within-subjects factor was included, in which each subject evaluated the test performance of two target persons, one success and one failure. The order of the target persons and their nondiagnostic background information were counterbalanced across subjects. Because no order effects emerged in preliminary analyses, we collapsed the data across these variations. The overall design was thus a 2 (high- vs. low-involvement information) by 2 (success vs. failure) design, with the second factor within-subjects.

Procedure

All experimental materials were contained in booklets given to subjects upon arrival at the lab. Subjects initially were informed that the researchers were "examining how untrained people evaluate the test performances of other people." Subjects were further informed that they would receive a description of the Social Perceptiveness Test, background information about two people who took the test, and their performance on the test. The description included either the valid version (i.e., the high-ego-involvement instructions of Miller, 1976) or the invalid version (Miller's low-ego-involvement instructions). Recall that the high-involvement manipulation makes salient the attributional relevance of at least four kinds of personal information about the test taker: intelligence, personal happiness, marital or interpersonal happiness, and job or school satisfaction. Subjects next examined information about a test taker. All subjects received nondiagnostic background information (college student, age). Subjects in the high-involvement information conditions also received a composite profile of the test taker. The profile listed the four kinds of personal information and presented the average ratings on these dimensions given by Experiment 1 subjects. Thus, the test taker was presented as above average in intelligence, personal happiness,

marital/interpersonal happiness, and job/school satisfaction. Finally, the test taker's performance (success vs. failure) on the Social Perceptiveness Test was presented, and that performance was evaluated by the subject on the four questions used by Miller. The four questions, assessed on 9-point rating scales, were as follows: (1) How difficult did X find the Social Perceptiveness Test? (2) How accurately do you think X's score reflects his or her true degree of actual social perceptiveness? (3) How hard do you think that X tried on the Social Perceptiveness Test? (4) How important do you think luck was in determining X's score?

After completing these ratings, subjects proceeded to examine and evaluate their second test taker, whose performance was opposite to that of the first. That is, if the first test taker succeeded (scored higher than 80% of all people who have taken the test), the second one failed (scored lower than 80% of all other test takers).

Upon completion of the experiment, each subject was given a thorough summary of the study.

RESULTS AND DISCUSSION

Using 9-point rating scales, subjects evaluated test takers' performances on four attributional factors: task difficulty (1="very easy," 9="very difficult"); accuracy of social perceptiveness score (1="not at all accurate," 9="very accurate"); effort level (1="did not try at all," 9="tried very hard"); and luck (1="not at all important," 9="very important").

The two main predictions were that subjects would attribute more responsibility to the test taker for success than for failure, and that this effect would be stronger in high-involvement information conditions than in low-involvement information conditions. To test these predictions, *a priori* contrasts were applied to each set of attributions about the test taker, such that positive scores indicated relatively more attributional responsibility to social perceptiveness and effort, while negative scores indicated relatively more attributional responsibility to task difficulty and luck. A 2 (outcome)×2 (involvement information) repeated-measures analysis of variance on these data confirmed both predictions. Success was attributed more to the test taker than to external factors ($M=4.04$), whereas failure was attributed more to external factors than to the test taker ($M=-.55$), $F(1, 20)=20.43$, $p<.001$. More importantly, the interaction between outcome and involvement information was significant, $F(1, 20)=4.84$, $p<.05$. As shown in Figure 1, the high-involvement information conditions yielded a more "self-serving" pattern of attributions than did

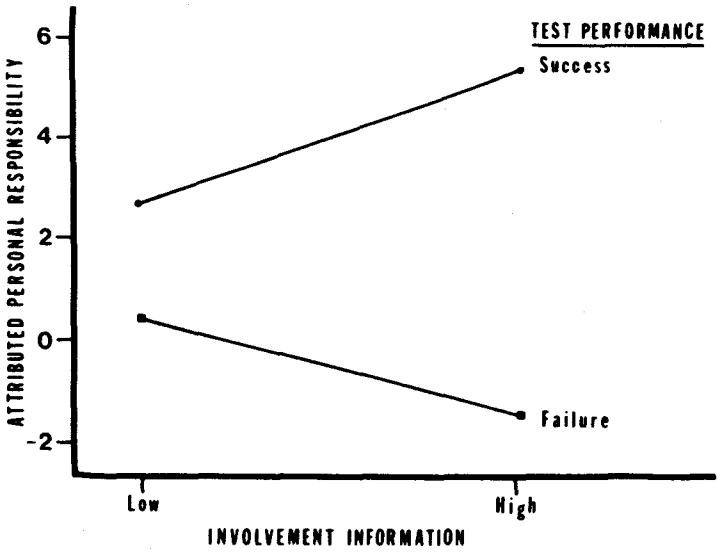

FIGURE 1
Mean attributed personal responsibility as a function of test performance and involvement information, Experiment 2. (High scores indicate relatively greater responsibility attributed to the test taker.)

the low-involvement information conditions. Individual analyses on the four attribution factors similarly yielded the predicted interaction for three factors. The self-serving pattern was stronger in high-involvement information conditions for social perceptiveness, $F(1, 20)=9.80$, $p<.01$; luck, $F(1, 20)=5.43$, $p<.05$; and effort, $F(1, 20)=3.35$, $p<.09$. The interaction for task difficulty was nonsignificant, $F(1, 20)=2.62$, $p>.12$.

These results strongly suggest that a motivational manipulation (ego involvement) can produce a self-serving *pattern* of attributions through purely nonmotivational (at the second stage) attributional processing. That is, when the informational differences created at the first stage by the motivational manipulation (Experiment 1) were recreated for a group of uninvolved observer subjects (Experiment 2), their attributions for the performance outcomes of anonymous test takers showed the same asymmetries as those shown by involved actor subjects attributing their own outcomes.

There is one potential problem with this experiment, however. The manipulation of involvement information in Experiment 2 actually consisted of two parts. The first was the description of the social perceptiveness test, based on Miller's manipulation. The second was

a composite profile of each test taker, based on the results of Experiment 1. That is, the subjects who were given high-involvement information received the valid description of the social perceptiveness test and the composite profiles, whereas the subjects who were given low-involvement information received only the invalid description. This two-part manipulation was designed to recreate the salient information differences in observer subjects that had been created in Miller's actor subjects. One might insist, though, that a more appropriate and stringent test of our informational hypothesis would be based on a simple valid–invalid test description as a recreation of Miller's manipulation of involvement and information salience. This design assumes, however, that observer subjects will infer the same positive qualities about their targets as actor subjects believe about themselves. Although it is clear that people view themselves as "better" than the average, and thus are unlikely to make as strongly positive inferences about others as themselves, general positivity biases suggest that we should obtain similar effects in this more stringent test. Experiment 3 was designed to provide this stringent test of our hypothesis.

EXPERIMENT 3

OVERVIEW

Undergraduates at Rice University were presented with the results of social perception tests purportedly taken by other students at another university. Each subject saw the results of four different people. Of those people, one was successful on a purportedly valid test of social perception, while another failed the same test. The other two people supposedly had taken an invalid test of social perception, with one succeeding and the other failing. Information provided about the test takers indicated that all were generally competent individuals. Based on this information about the test takers and the tests, subjects were required to give causal explanations for each person's performance by making ratings on dimensions of test difficulty, test taker's social perceptiveness abilities, test taker's effort, and luck. At the end of the experiment, subjects also rated the test takers on intelligence, personal life satisfaction, interpersonal happiness, and job (school) satisfaction, as a check on the assumption that competent college students would be rated above average on these dimensions.

METHOD

Subjects

Thirty-two male and female undergraduates participated for course credit. They were tested in groups of up to 11 people, and were assigned to conditions randomly.

The design was a 2×2 within-subjects factorial, with involvement (test valid or invalid) and outcome (success vs. failure) as the independent variables. As before, the manipulation of test validity, from Miller (1976), was actually a manipulation of information salience and relevance rather than involvement, because subjects were simply to evaluate others' performances. There were, in addition, four between-subjects order factors (order of test description, order of test validity, order of success and failure for the first pair of cases, and order of success and failure for the second pair of cases). There were no consistent, meaningful effects of these factors; therefore, only results from the two major independent variables are presented here.

Procedure

After signing consent forms, subjects were given a booklet containing the experimental instructions, experimental manipulations, and dependent measures. The first page of the booklet, which was read aloud by the experimenter as the subjects read along silently, informed the subjects that the aim of the study was to examine how untrained people evaluate the test performances of other people. Two tests were specified, the "Aspen Social Perceptiveness Test" (ASPT) and the "Bell Social Perceptiveness Test" (BSPT). Subjects were told that they would receive descriptions of these tests, background information about the people who took one of these tests, and the test results for those people. They were told to "evaluate all this information as rationally and logically as possible," so that they could make ratings of several possible causes for the persons' performance. Subjects were told that they would evaluate two people's performance on each of the two tests, and that the four people they would evaluate had been "chosen for their similar quailities or else had been chosen to be quite diverse." This information was provided to prevent suspicion on the part of the subects when they noticed that all the descriptions were identical except for age, which varied within the limits typical of college students.

Following any questions about the instructions, subjects were allowed to proceed through the remainder of the booklet at their own pace. The next page contained a description of either the ASPT or the BSPT. The description of the ASPT was a description actually used by

Miller (1976), wherein test takers predict a target person's behavior based on brief descriptions of the target's life. The BSPT was described as a test in which the test taker listens to a taped conversation of a person trying to persuade a target to take a controversial stand. The test taker is measured on how quickly and accurately he or she can discern whether or not the target will be persuaded. Embedded in these descriptions was an indication that the test is either valid (i.e., Miller's high-ego-involvement instructions) or invalid (Miller's low-ego-involvement instructions).

Recall that the low-ego-involvement instructions that Miller used state that the "scores on the test so far *do not* seem to be related to any of the factors that are known to relate to social perceptiveness." However, the high-involvement manipulation makes salient the attributional relevance of the test taker's intelligence, personal happiness, interpersonal happiness, and job or school satisfaction, and indicates that these factors are highly related to test performance.

After examining the description of one test and the indication of whether or not it is valid, subjects read the description of the first test taker. With appropriate adjustments of initials, which test was taken, and age, *all* the test takers were described identically as follows:

> Consider the case of J. D. At the time the Aspen Social Perceptiveness Test was given, J. D. was a 20-year-old student at a large, highly respected university. Tests and expert ratings conducted at the university showed that J. D. was quite typical of a well-adjusted, active student.

Following this description, the person's performance on the test was presented as higher (success) or lower (failure) than 80% of the people taking that particular test. The performance was evaluated by the subjects on the four attributional questions used by Miller and in Experiment 2.

After completing these ratings, subjects proceeded to examine and evaluate their second test taker. Next, the other test (ASPT or BSPT, whichever was not first presented) was described, with the validity being the opposite of the first test. Again, two students were described by similar background information, and their performance (one success, one failure) was evaluated.

After completing all performance evaluations, it was acknowledged that subjects had probably discerned that they had been assigned to the condition in which four similar people were to be evaluated. Subjects were then asked to realistically evaluate how they thought this group of people would compare with their high-school classmates, using 9-point rating scales, on intelligence, personal life satisfaction, interpersonal happiness, and job or school satisfaction.

Questions on the final page of the booklet assessed whether or not subjects had discovered the hypothesis of the experiment. Upon completion of the entire study, subjects were mailed a complete debriefing and summary of the study.

RESULTS AND DISCUSSION

Subjects evaluated test takers' performances on 9-point rating scales measuring four attributional factors: task difficulty (1="very easy," 9="very difficult"); accuracy of social perceptiveness score (1="not at all accurate," 9="very accurate"); effort level (1="did not try at all," 9="tried very hard"); and luck (1="not at all important," 9="very important").

The two main predictions were that subjects would attribute more responsibility to the test taker for success than for failure, and that this effect would be stronger in high- than in low-involvement information conditions.

To test these predictions, *a priori* contrasts were applied to each set of attributions about a test taker, such that positive scores indicated relatively more attributional responsibility to social perceptiveness and effort, whereas negative scores indicated relatively more attributional responsibility to task difficulty and luck. The predictions were confirmed. Success was attributed more to the test taker than to external factors ($M = 9.34$); failure was attributed more to external factors than to the test taker ($M = -3.25$), $F(1, 31) = 88.36$, $p < .0001$. More importantly, the interaction between outcome and involvement information was significant, $F(1, 31) = 8.07$, $p < .01$. The high-involvement information conditions yielded a more "self-serving" pattern of attributions than did the low-involvement information conditions, as can be seen in Figure 2. Individual analyses of the four attribution factors showed the expected trend for all four factors, though only one of the factors individually yielded a significant interaction. The self-serving pattern was stronger in high-involvement information conditions for effort, $F(1, 31) = 4.20$, $p < .05$, and the interaction approached significance for luck, $F(1, 31) = 2.99$, $p < .10$. Though not significant, there was a tendency toward the same self-serving pattern for difficulty, $F(1, 31) = 2.37$, $p = .13$, and actual social perceptiveness ability, $F(1, 31) = 2.19$, $p = .15$. Thus the data confirm both of the predictions postulated in this study.

Because the predictions of this study were based on the assumption that successful outcomes would be congruent with the image of the test takers, it is important to note that subjects rated the test

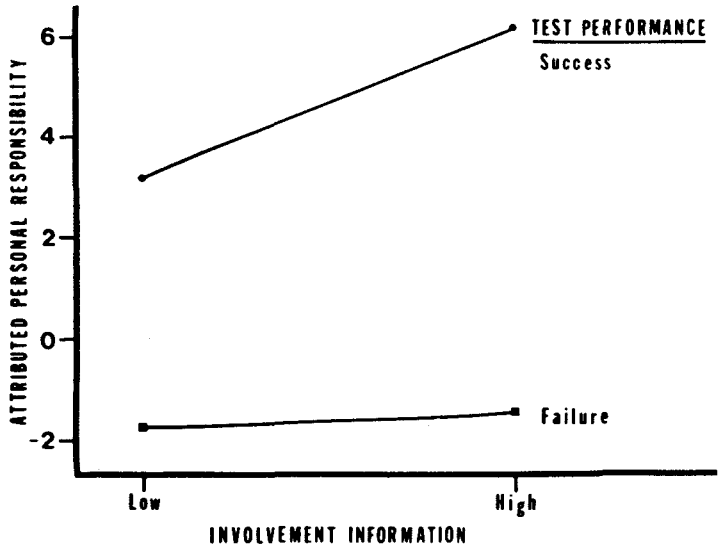

FIGURE 2
Mean attributed personal reponsibility as a function of test performance and involvement information, Experiment 3. (High scores indicate relatively greater responsibility attributed to the test taker.)

takers as being significantly ($p < .01$) above average on each of the dimensions measured ($M = 7.3$ for intelligence, $M = 6.3$ for personal life satisfaction, $M = 6.1$ for interpersonal happiness, and $M = 6.8$ for job satisfaction, all on 9-point scales). The similarity of these ratings to the pattern obtained from the students' self-ratings in Experiment 1 indicates that the descriptions used in the present experiment effectively conveyed the appropriate information. In effect, the descriptions provided subjects with a generally positive impression of the test takers, just as college-student subjects in general (including Miller's subjects) have their own positive self-perceptions. This was accomplished without artificially making certain traits particularly salient.

In conclusion, it appears that this study effectively simulated the study of Miller (1976), manipulating information factors without creating ego-involvement, and producing the same pattern of attributions found by Miller. This provides strong support for our two-stage model of attributions, which locates motivational effects at a stage prior to attribution selection, and provides a cognitive mechanism for effects of motivational manipulations.

GENERAL DISCUSSION

Past reviews have yielded little evidence of motivational biases at the attribution stage, when explanations for success and failure are sought. The strongest evidence for such ego-defensiveness was from a small set of studies that manipulated motivationally relevant variables (such as ego involvement) after completion of the target task. The present three experiments have shown that such manipulations also change informational variables in ways that produce the ego-defensive pattern of attributions, and do so in observer subjects who are not ego-involved. Of course, one cannot prove that processing at the attributional stage is never "ego-defensive"; that would entail proving a null effect. But we can show, as in the three reported experiments, that manipulations or factors with motivational properties do influence the information set brought to the attributional stage, and that motivational factors influence final attributions via this informational effect. In essence, we feel that the empirical evidence requires that motivational influences on attributions be relocated. Motivational variables have impact on the stage-one processes of knowledge structure and information selection, not on the final attribution selection. In essence, we have proposed a general mechanism whereby motivational variables influence attributions, and the mechanism is a cognitive one. Whether or not to label the effects of motivational variables on stage-one processes as a "motivational attribution bias" is, we feel, a matter of personal preference.

It appears that our understanding of attributional processes and effects might not be aided best by trying to create critical tests of the motivation and cognitive positions. We have seen that informational differences will probably result from motivational differences, and that the informational differences account for attributional selection effects in a parsimonious way. A more productive approach for future research may be to consider how motives or motivational manipulations influence the kinds of information brought to bear upon an attributional assessment.

Several notable efforts in this direction have already been made. In the domain of actor-observer designs, Eisen's paper (1979) has shown that actors were self-serving in their attributions as compared to observers because actors' perceptions of self-consistency and distinctiveness differed from observers' perceptions, rather than because of ego-defensive motives. Ross and Sicoly's paper (1979) on availability effects in attributional asymmetries can also be seen as contributing to this model.

A number of researchers are also beginning to address empirically attributional asymmetries in the "actor in success or failure" paradigm from the current perspective. Rusbult and Medlin (1982), for instance, suggested that success–failure asymmetries should occur in the single-observation case because the attributions must account for past outcomes and expectancies as well as the present one (a schema-based judgment). They postulated that as more instances are added, the asymmetry should be reduced or disappear, because the attribution task becomes more of a covariation one. In essence, the relevant knowledge structure changes as the situation changes. Their results supported this conceptualization. Also, as mentioned earlier, Anderson (1983a) has shown that success and failure situations differ in their causal structures, in ways that contribute to actors' asymmetrical attribution patterns.

In sum, our proposed relocation of motivational effects accounts for the empirical data and suggests a number of additional research programs. Precisely how are knowledge structures and belief systems recruited for use by an attributor? How does motivation influence this recruitment? What effect does the specificity or generality of the belief system that is used have upon the type and certainty of the attributions made? What is the role of attributor goals in these processes? How can accuracy of attributions be assessed? Is there such a thing as accuracy that is independent of perspective and information availability? If so, how can the accuracy of one's attributions be increased?

The answers to these questions, and to others that arise from consideration of this approach, necessitate careful research. More attention must be paid to measuring informational differences and to comparing these mediators with the outcomes they are supposedly mediating. In this way, we may be better able to predict and explain a wide range of attributional phenomena.

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