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ABSTRACT

Research has shown that attributing failure to lack of ability leads to lower motivation than does attributing the failure to lack of effort. An attributional model of motivation and performance following failure was tested with college students (N=63), who were preselected on the basis of their attributional styles for interpersonal failures, as measured by the Attributional Style Assessment Test. Subjects in the two groups (Character style versus Behavioral style attributors) were randomly assigned to one of three experimental manipulations of attributions for failure at an interpersonal persuasion task--no manipulation, ability/trait manipulation, or strategy/effort manipulation. Subjects engaged in a telephone blood drive task, trying to persuade other students to donate blood. Success expectancies, motivation, and actual performance were assessed. Subjects who made strategy/effort type attributions, whether by experimental manipulation or preselection, expected more success, expected more improvement with practice, displayed higher levels of motivation, and performed better at the task than did subjects who made ability/trait type attributions. (Author/NRB)

Attributional Effects in Interpersonal Settings

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> Man is by nature a social anaimal; an individual who is unsocial naturally and not accidentally is either beneath out notice or more than human. Society is something in nature that precedes the individual. Anyone who either cannot lead the common life or is so self-sufficient as not to need to, and therefore does not partake of society, is either a beast or a god.
>
> Aristotle
>
> Politics c. 328 B.C.

That the human species is a gregarious one is a truism at least as old as Aristotle. The extreme vulnerability of human infants and the individual human adult makes such gregariousness necessary to survival. From birth to death our lives revolve around interpersonal interactions. In many of these interactions (perhaps most) we are successful in meeting our needs and goals--we get fed (by mother, father, or McDonald's), we make friends, we find lovers.

But just as it is inevitable for us to engage in interpersonal interactions, it is also inevitable that we will occasionally fail in these interactions. Such failures range from the rather inconsequential (e.g., failure to effectively communicate that you wanted a chocolate shake, not a strawberry one), to the moderately discouraging (e.g., failure to persuade other people to participate in a social cause you deem valuable), to the absolutely devastating (e.g., failure to keep your marriage working).

While everyone experiences such failures, it often appears that

different people react to similar failures in quite different ways. Some people seem to give up quite easily in the face of failure. Their motivation level is low and hence, their performance level is also low. Other people seem to treat failure as a challenge. They respond with higher motivation and better performance. In addition to this "between people" variability, there also appears to be "within person" variability in responses to failure on different occasions. For example, an unsuccessful persuasion attempt may lead to lowered motivation on one occasion and to redoubled efforts on another. What causes such different motivational responses to failure?

The most prominent theories of motivation and motivation change all stress the importance of a person's success expectancies (cf. Abramson, Seligman, & Teasdale, 1978; Atkinson, 1964, Bandura, 1977; Mischel, 1973; Weiner, 1979). All else being equal, one who expects to be able to succeed will be more motivated than one who does not expect success. What, then, determines the impact any given failure will have on success expectancies?

It appears that how a person understands or interprets a given failure determines, to a great extent, the impact of the failure on success expectancies (Anderson & Jennings, 1980, McMahan, 1973; Valle & Frieze, 1976). In the achievement motivation domain, much progress has been made in specifying the role of attributional processes in determining reactions to failure. For example, research in this area has shown that attributing failure to lack of ability leads to lower motivation than does attributing the failure to lack of effort (see Weiner, 1972;

1974, 1979 for reviews of much of this literature). Most of the attributional analyses of motivation, though, have focussed exclusively on non-interpersonal tasks such as solving anagrams and arithmetic problems. Despite this shortcoming, a number of theorists have noted the similarity between motivational deficits in interpersonal and non-interpersonal domains, and have applied the attributional model of non-interpersonal achievement motivation to such interpersonal problems as loneliness and depression (Abramson, Seligman, & Teasdale, 1978, Peplau, Russell, & Heim, 1979; Weiner, 1979; Weiner & Litman-Adize, 1978).

Thus, one's reaction to an interpersonal failure is hypothesized to be determined by the attributions one makes for the failure. It is additionally hypothesized that groups of people evidencing consistent differences in motivational reactions to interpersonal failure will also evidence consistent differences in attributional style. More specifically, this model specifies that interpersonally debilitated people (such as lonely people and depressed people) have motivational and performance deficits in part because they tend to attribute their interpersonal failures more to stable and unchangeable factors (like ability deficits) and less to unstable and changeable factors (like effort) than do their non-debilitated counterparts.

This theory, in which attributional style is seen as a maintaining cause, requires two different types of supporting evidence. First, appropriate attributional style differences must be found between debilitated and non-debilitated people in interpersonal failure situations.

Early research on this point was somewhat weak and inconsistent

(see Anderson, Horowitz, & French, Note 1, for a brief review). Recent studies (Seligman, Abramson, Semmel, & von Baeyer, 1979; Anderson, Horowitz, & French, Note 1), though, have provided consistent, converging evidence that motivationally debilitated people (such as the lonely and depressed) do have an attributional style that differs from that of their non-debilitated counterparts.

Of particular interest here are the findings from the Anderson et al. studies. Loneliness and depression were both found to correlate highly with measures of attributional style, especially when attributional style was assessed for interpersonal failure situations. Lonely people and depressed people tended to attribute their interpersonal failures more to unchangeable character defects (lack of ability, poor personality traits) and less to changeable behavioral mistakes (lack of effort, inappropriate strategy) than did non-lonely and non-depressed people.

By itself such correlational evidence would not be sufficient to allow a causal statement to be made, for a third variable, such as real ability differences between the groups, may be producing the observed correlation. The second piece of required evidence is thus experimental. It must be shown that experimentally changing the attributions of pre-selected groups of subjects leads to corresponding changes in motivation and performance. This question is the focus of the present study[1].

A reading of the empirical literature reveals that there is no research that combines all the required features. There are a number of studies in which experimental manipulations have successfully influenced motivation and performance outcomes on a variety of non-interpersonal

tasks (see Weiner, 1979, for a review of much of this literature). In addition, Klein, Fencil-Morse, and Seligman (1976) have shown that an attribution manipulation may reduce performance deficits of depressed subjects on a non-interpersonal anagram task. But these studies tell us little about attributional effects on interpersonal tasks.

Two studies using highly interpersonal tasks have been reported, though, in which the attributions of normal populations were experimentally varied. Anderson and Jennings (1980) had subjects perform a "blood drive recruitment" task, which consisted of persuading college students (via telephone) to donate blood to a local blood bank. Results indicated that subjects who were led to attribute initial failure to ineffective strategies had significantly higher success expectancies, and expected significantly more improvement with practice than did subjects who were led to attribute initial failure to low ability.

In a related study, Jennings (Note 2) also manipulated "strategy" and "ability" attributions of subjects engaging in an interpersonal persuasion task. In addition to expectancy measures, several measures of actual performance (observer ratings) were also obtained. On these measures, it was found that subjects led to make strategy attributions for initial failures changed their strategies more often and improved the quality of their persuasive appeals significantly more than did subjects led to attribute initial failures to lack of ability.

Together, these two studies demonstrate the importance of attributions in determining success expectations, approach to the problem, and quality of performance in interpersonal situations. But they do not demonstrate that changing the attributions of people preselected on the

basis attributional styles can produce corresponding changes in motivation and performance on an interpersonal task.

Method

Overview

To further test this attributional model, a study was conducted in which people with different attributional styles engaged in an interpersonal persuasion task. The task, persuading people to donate blood to a local blood bank, guarantees that each subject will fail occasionally. This situation also was sampled by the Attributional Style Assessment Test (ASAT) used by Anderson et al., (Note 1). One preselected group consisted of people who tended to attribute their interpersonal failures to unchangeable character deficits (lack of ability of interfering personality traits), a style more frequently used by lonely and depressed populations. The second preselected group consisted of people who tended to attribute their interpersonal failures to changeable behavior deficits (lack of effort and use of the wrong strategy), a style used by non-lonely and non-depressed populations.

Within each of these two preselected groups, subjects were randomly assigned to one of three attribution manipulation conditions, one-third received no attribution manipulation, one-third received an ability-trait attribution manipulation, and the remaining one-third received a strategy-effort attribution manipulation. Not that these latter two conditions are conceptual parallels to the character and behavior attributional styles.

Subjects then participated in the "blood drive" task, from which three types of dependent variable measures were obtained, success expec-

tancies (assessed at two different times), motivation (task persistence and commitment), and performance quality (success rate).

Design and Predictions

The overall design of this experiment is thus a 2 x 3 factorial, crossing attributional style for interpersonal failure (character versus behavior) with an attribution manipulation (Ability/Trait versus Strategy/Effort versus No manipulation). The general theory concerning the role of attributions in maintaining interpersonal debilities predicts that attributing one's failure to unchangeable character deficits should lead to lowered expectancies, lowered motivation and perhaps lowered quality of performance, relative to attributing such failures to changeable behavioral factors.

Insert Table 1 about here

The main hypothesis of this study can best be summarized by the contrast weights shown in Table 1. Specifically, it is predicted that (1) other things being equal, people who attribute failure at the task to strategy or effort will have higher expectancies, higher motivation, and better performance than people who attribute the failures to ability or trait factors; (2) it does not matter whether these attributions are produced by the subject's own attributional style or by the experimental manipulation; (3) when the experimental manipulation differs from the subject's attributional style, it is assumed that the experimentally induced attribution overrides the subject's attributional style, at least within the limits of the experiment.

Preselection of Subjects

Potential subjects completed a questionnaire packet, including the Attributional Style Assessment Test (ASAT) (Anderson et. al., Note 1) at the beginning of an introductory psychology course at Stanford University. People who scored in the top third or bottom third of the changeability index of attributional style for interpersonal failure were contacted by telephone, and asked to participate in the study for pay or for credit towards the introductory psychology research requirement. A total of 63 people completed the study. Five other subjects failed to complete the experiment; 3 failed to show for their second session, 1 had participated in a similar study, and 1 dropped out because he did not like to make telephone calls.

Procedure

Session 1. Upon arrival at the experimental lab, the subject was seated at a table that held a telephone and a tape recorder. The experiment was described as part of a line of research being conducted by the Stanford Altruism Society, a group of researchers whose goal was to study ways to increase altruistic behavior in society. It was further explained that the current project was being conducted to identify the factors that led some volunteer telephone callers for blood banks to be quite successful and other callers to be unsuccessful. The subject's task was to play the role of a blood bank volunteer caller. Subjects were assured that not only would the researchers benefit by learning more about effectiveness at this interpersonal persuasion task, but that the Stanford Blood Bank also would benefit by getting the new blood donors that they had successfully persuaded.

Following this introduction to the study, the subject was given a summary of its three main stages. Stage 1, to be completed during the first session, was described as consisting of completing a couple of questionnaires, going over information about blood donation procedures and calling lists, and making one practice call which was to be taped for later analysis. Stage 2 was described as the heart of the study, to take place in the week between the two scheduled sessions. The subject was to call a number of Stanford students during that week to try to persuade them to donate blood. The purpose was to get an estimate of each subject's success rate, supposedly as a criterion for analysis of the taped calls and the questionnaire information in the search for factors that make an effective telephone caller. Stage 3, to take place in the second lab session, was to consist of making another persuasive call, to be taped, and of filling out a final questionnaire.

When subjects' questions about the procedures had been answered, a questionnaire assessing background information and preliminary success estimates was administered.[2] Included were questions on age, experience in donating blood, past volunteer work for the Red Cross and related organizations, and experience at telephone solicitation. Subjects also estimated the success rate of Red Cross volunteer callers at telephone solicitation. This estimate was later used in calculating each subject's personal success expectancy relative to their expectations for Red Cross volunteers.

Upon completion of this questionnaire the experimental manipulation of attributions for the task took place. For the Ability/Trait manipulation, the experimenter said: "In trying to discover why some people do well and others do not at persuading people to donate blood, we will

be examining one factor very closely. This factor that seems like it might be particularly important is the basic persuasiveness of the caller. That is, some people may just have the necessary persuasive abilities and personal styles or traits to make such persuasion tasks fairly simple. People who fail may simply lack these necessary persuasive characteristics, and thus do quite poorly. In short, it may be that some people are just better than others at persuasion. This is one factor we will be examining in the study."

For the Strategy/Effort manipulation the experimenter said: "In trying to discover why some people do well and others do not at persuading people to donate blood, we will be examining one factor very closely. This factor that seems like it might be particularly important concerns the particular strategies or tactics that are used. That is, some people may do well because they try very hard to come up with the right tactic or approach to persuading the people they are calling. People who fail may do son mainly because they do not try hard, and do not try to come up with effective strategies. In short, it may be that people who think of the task in terms of strategies do better than those who do not. This is one factor we will be examining in this study."

For subjects in the No Manipulation conditions the experimenter did not talk at all about any particular factors under examination.

At this point, the subject was given a two-page summary of information needed to be a blood bank volunteer caller. This summary contained information on the need for blood donations, the blood donation procedure, and common excuses given for refusing to donate blood with appropriate responses to them. The subject was given several minutes to examine

this information and to prepare for the practice call. The experimenter then gave the subject the "calling list" form to be used when making calls, and explained how to fill it out. Briefly, for every call made the subject was to write down the name and telephone number of the person called, and the date and time of the call. If the person was contacted, the subject was also to record whether the person had ever donated blood before, and the outcome of the persuasion attempt. The subject was further instructed to try to persuade only those people indicating they had never donated blood before, and to record any extenuating circumstances for failed attempts -- for if the person was a hemophiliac or had hepatitis, for instance, the failure would not be counted when calculating a success rate. The importance of keeping these calling lists accurately was emphasized. When the experimenter was satisfied that the subject understood all these procedural details, he told the subject to take several minutes to prepare to make the practice call.

The first two names on each subject's list were added by the experimenter, supposedly from a list of people "left over from prior lists." In actuality, both people were confederates of the experimenter. When a subject was ready to make the practice call, these two confederates would be the first called. On the first call, there was no answer. That person, from the subject's point of view, was probably in a class. The second confederate was then called. This person was "at home," and provided the subject with the experience of failing to persuade an initially interested person. This practice call was tape recorded, as "a major part of our data, to see what types of calls are associated with different success rates." Actually, this whole elaborate procedure was carried out for four reasons. First, the call was taped primarily

to support the cover story of looking for factors leading to success or failure in persuasion. Second, the practice call to a confederate was designed to guarantee reaching someone with the time constraints of the lab session. Third, the confederate refused to donate blood because the study primarily concerned motivational and performance effects of attributions for failure. Fourth, the first confederate's name was inserted to provide a later check on the accuracy of subjects' calling lists. That is, since this person was initially "in a class," her name was still on top of each subject's list of people to be called. During the following week, then, the subject would try to contact the confederate again. The confederate normally did answer her phone, and was thus contacted by 13 of the 63 subjects (and refused to donate blood). Comparisons of dates and times of calls recorded by this confederate and by the subjects established that these 13 subjects, at least, did not misrepresent their calls or the outcome of their persuasion attempts.

After completing the practice call, the subject was asked to predict their level of success at the task in the next week. The first item asked the subject, "of all the people you contact, what percentage will you successfully persuade to donate blood?". A second item was designed to assess how much the subject expected personal performance to change over time. This item asked the subject to assume that they were able to contact 40 people. The task, then, was to predict the number of successes in their first 10 contacts, their second 10 contacts, their third 10 contacts, and their fourth 10 contacts.

When the items were completed, each subject was given a photocopied list of names and telephone numbers from the Stanford Student Directory, and four calling list forms on which to record their calls. Each subject

was asked to try to make at least ten actual contacts before their next session (approximately one week later). It was pointed out, however, that they did not have to make ten contacts in order to complete the experiment. They were also allowed to make more calls if they so desired. Subjects were asked to not call friends if their names happened to appear on the particular list given to the subjects. Finally, the importance of keeping accurate records of the calls was again stressed to the subject.

Session 2. Approximately one week after Session 1, the subject returned to the lab to complete the study. The calling lists, student directory list, and the blood drive information summary sheets were turned in at the beginning of this session. The subject was then asked to role play a typical call, that is, to give the typical persuasive pitch to the experimenter as if actually trying to persuade the experimenter, via telephone, to donate blood. The experimenter responded with a set of preplanned statements that began with: "I don't know. I don't think I want to donate blood." The final statement in the series was: "No , I'm sorry, but I'n not going to donate, I just do not have the time." The subject's persuasive attempt was tape recorded, supposedly "to give us a better sample of your (the subject's) type of call."

A final questionnaire was then administered. The first item asked the subject to indicate how likely he or she would be to help out in a future blood drive by working as an unpaid volunteer caller. This willingness scale was a 5-point scale ranging from "Unwilling to participate; please do not contact me" (1) to "Very likely willing to participate; please contact me and provide more details" (5). A final item had the subject estimate future success by answering this question:

"Assuming that you participate in a future blood drive as a caller, what percentage of your contacts would you expect to persuade to donate blood?"

After completing these items, the subject was thoroughly debriefed concerning the experimental manipulations and possible effects of different types of attributions for failure. In the initial stages of the debriefing, care was taken to probe for any suspicions the subject might have had about any aspect of the study (Carlsmith, Ellsworth, & Aronson, (1976). Three subjects indicated they were suspicious about the "practice" call in the first session. Since excluding their data does not alter the results or conclusions of this study, their data were kept.

Because several subjects failed to appear for their Session 2 appointment, and several others incorrectly completed one or more of the dependent measures, unequal sample sizes resulted (the smallest on any measure was 8, the largest was 11). The results to be reported below are thus based on unweighted means analyses of variance.

Results

Session 1 -- Expectancy Measures

In Session 1, subjects received their general instructions and the experimental manipulation, completed one practice call (a failure), and answered a pair of items assessing their % success expectancies ("What percentage will you successfully persuade . . .?", and their expectancies concerning change in performance over time.

Subjects' % success expectancies were highly correlated with their estimates of Red Cross Volunteers' % success ($r = .69$, $p < .001$). To control for differences in use of the % scale, subjects' personal

Insert Table 2 about here

success estimates were divided by their success estimates for Red Cross Volunteers (RCVOL), yielding a proportional expectancy for each subject. On this proportional expectancy measure, group means and variances were systematically related, necessitating a square root transformation (Winer, 1971). The Session 1 corrected expectancy, as presented in Table 3, is:

$$\sqrt{\frac{\text{Self \% Success}}{\text{RCVOL}}} \times 100 .$$

As can be seen in Table 2, after only the one failure experience in the session, the predicted pattern of expectancies began to emerge, those groups making strategy/effort type attributions expected more success than those groups making ability/trait type attributions, $F(1,57) = 4.00$, $p < .05$.[3] This predicted contrast accounted for most of the systematic variance; the residual was nonsignificant, $F(4,57) = 1.76$, $p > .10$. The effect is fairly weak however, as we might expect at this early stage in the experiment.

To get an indication of how subjects expected their performance to change over time, they were asked to predict their number of successes in each of four consecutive blocks of ten telephone contacts. Treating blocks as the X variate and predicted success as the Y variate, we can calculate a slope for each subject, reflecting the degree to which that subject expects change. A positive slope thus indicates an expected improvement, a zero slope indicates no change, and a negative slope indicates an expected decrease in performance over time. Of the major attributional factors, only strategy attributions for failure should lead one to expect much improvement with practice (Anderson & Jennings, 1980). This leads to the same predicted contrast pattern spelled out earlier -- the three strategy/effort groups should expect more improve-

ment than the three ability-trait groups. The results from this Slope measure, presented in Table 2, strongly confirm this prediction, $F(1,57) = 8.64$, $p < .005$. The residual variance was again nonsignificant, $F(4,57) = 1.26$, $p > .25$.

To more clearly illustrate these effects, the two expectancy measures were combined into an overall expectancy index, via z-score transformations. The means, presented in Table 2 and Figure 1, fell into the predicted pattern, as shown by the highly significant contrast, $F(1,57) = 13.08$, $p < .001$, and the nonsignificant residual, $F(4,57) < 1$. It is also interesting to note in Figure 1 that while the strategy-effort manipulation had a large impact on Character style attributors, the ability-trait manipulation had a relatively small impact on behavior-style attributors.

We thus see that people with a strategy-effort view of the task, whether by predispositional selection (Behavior Style, No Manipulation), experimental manipulation (Character Style, Strategy/Effort Manipulation), or both (Behavior Style, Strategy/Effort Manipulation), expect more success and expect more improvement with practice. This expectancy should have two major effects on their behavior. It should lead to higher motivation levels, by keeping them from becoming discouraged after a few failures. It should also lead to better performance at the task, since the strategy orientation focuses their attention on the changeable features of the task (features under the subject's own control). Expecting to learn from initial tries should actually help one to learn from them.

Insert Table 3 about here

Session 2

In session 2, subjects turned in their calling lists, role played a typical persuasive attempt, and completed a final questionnaire assessing their success expectancies and their willingness to participate in a future blood drive. From the calling lists it was also possible to obtain a persistence measure (number of calls made) and a performance measure (success rate).

Success Expectancies. Subjects estimated their % success rate for a future blood drive, on the assumption that they had actually volunteered to work in such a drive. These estimates again correlated significantly with RCVOL ($r = .368$, $p < .005$). To control for individual differences in use of percentage estimates, each subject's personal success estimate was divided by that subject's estimate for Red Cross Volunteers (RCVOL), as in Session 1. Unlike Session 1, though, no further transformation was necessary to equalize variances. Thus, the Session 2 success expectancy, as presented in Table 3, is:

$$\frac{\text{Self \% Success}}{\text{RCVOL}} \times 100$$

From Table 3 we can see that the prediction for expectancies, based on the attributional model, was strongly supported. After a one week calling period, those groups making strategy/effort type attributions expected more future success than did those groups making ability/trait type attributions as indicated by the significant contrast, $F(1,57) = 6.15$, $p < .02$. The residual variance was again nonsignificant, $F(4,57) < 1$.

Motivation. To assess each subject's motivation level, two different aspects of motivation were measured and combined into an overall

index. One measure was based on the number of calls the subject made between Session 1 and Session 2 -- a task persistence measure. The second measure was the willingness of a subject to participate in a future blood drive -- a commitment measure. The overall index of motivation, presented in Table 3, is the sum of the z-scores on the two individual measures.

As can be seen from Table 3, the predicted pattern of means does emerge for motivation. Those groups making strategy/effort type attributions displayed significantly higher motivation than did those goups making ability/trait type attributions, as indicated by the significant contrast, $F(1,38) = 5.24$, $p < .04$, and the nonsignificant residual variance, $F(4,38) < 1$.[4]

Success Rate. From the calling lists, on which subjects recorded each call and its outcome, a success rate was calculated for each subject as follows:

$$\frac{\text{\# of successes}}{\text{\# of successes + \# of failures - \# of excusable failures.}}$$ [5]

Excusable failures were those in which the persuasion target gave a good medical reason for refusing to donate blood, such as hepatitis, hemophilia, and body weight below blood bank requirements.

Subjects' mean success rates, presented in Table 3 were significantly influenced by the attributions they made. As expected, the overall contrast showed that people making strategy/effort type attributions had significantly higher success rates than those making ability/trait type attributions, $F(1,40) = 6.50$, $p < .005$. The residual was nonsignificant, $F(4,40) < 1$.

On all three of these dependent variables, then, the results conformed closely to the pattern predicted by the attribution model. To illustrate these effects more clearly, these measures (success expectancy, motivation, success rate) were combined, via z-score transformations, into an overall index.[6] The means on this index are presented in Table 3 and Figure 2. The predicted contrast was highly significant, $F(1,57) = 12.51$, $p < .001$, and the residual was clearly nonsignificant, $F(4,57) < 1$. Figure 2 dramatically displays these effects. Behavior style attributors scored quite highly on the expectancy-motivation-performance index except when induced to make ability-trait (character style) attributions. Conversely, Character style attributors scored low on this index except when induced to make strategy-effort (behavior-style) attributions. Indeed, as predicted by the attribution model, when Behavior style and Character style attributors were provided with the same attributions, they did not differ in their responses to the task; for the strategy/effort manipulation conditions, $t(57) < 1$, for the ability/trait manipulation conditions $t(57) < 1$. When attributions were not manipulated, however, Behavior style attributors reacted more positively to the task and its inherent failures than did Character style attributors, $t(57) = 2.11$, $p < .05$.

General Discussion

Overall, the results of this experiment lead to two major conclusions. First, in a naturalistic setting, people with the Character style of attributions for interpersonal failure will often fare less well than those with a Behavior style. The Behavior style subjects whose attributions were not manipulated displayed higher levels of success expectancies, motivation, and performance than did the corresponding Character style subjects. Second, we can conclude that such predispositional differences are due mainly to the attributional differences, and not primarily to ability differences. At-

tributional manipulations were successful in overriding the predispositional influence, as indicated by the consistently significant tests of the overall contrast pattern.

Of particular importance in the present results is the finding of attributional effects, both predispositional and experimental, on motivation and performance measures in a highly complex, interpersonal setting. It is also interesting to note that the best predictor of both a person's motivation level and success rate was not either of the pure expectancy measures, but was Slope, the measure of how much a person expected to improve with practice (for success rate, $r = .326$, $p < .02$; for motivation, $r = .296$, $p < .03$). Viewing one's failures at a task as the result of a poor strategy should lead one to attend to strategic features of the task, to expect improvement as one learns effective strategies, and to actually perform better. This analysis may not apply, though, to many of the simple, algorithmic tasks more commonly seen in the psychological literature. In tasks such as digit-symbol substitution, anagram solving, and solving simple math problems, strategy plays a considerably weakened role due to the more limited range of possible strategies (cf. Anderson & Jennings, 1980; Jennings, Note 2). But in most everyday situations of importance, particularly in complex interpersonal situations, strategy plays a major role in determining one's performance; attending both to strategy and effort factors, as in the present study, can be highly beneficial.

Attributional Style as Effect, not Cause: An Alternative View

Given only that there is a relationship between attributional style and interpersonal debilities, at least two possible explanations

for the relationship exist. One is that proposed by the present paper; attributional style contributes to the motivational and performance deficits, thus serving to maintain the overall debility. The alternative explanation is that the attributional style is a result of real ability deficits, accurately reflecting them, and is not a major cause of motivational and performance deficits. The results of the present experiment, particularly the success rate data, rule out this alternative explanation. Real ability differences should lead to consistently high performance by the non-debilitated (Behavior style) groups and consistently low performance by the debilitated (Character style) groups, regardless of attribution manipulations. Contrary to this view, Character style subjects who were led to attribute initial failures to strategy and effort factors had considerably higher success rates than their non-strategy/effort counterparts, while behavior style subjects who were led to attribute initial failures to ability and trait factors had lower success rates than their non-ability/trait counterparts.

The point is not that there are no general skill or ability differences between interpersonally debilitated and non-debilitated groups, but that attributional style differences help to maintain both the motivational and performance deficits that then serve to maintain the interpersonal debility.

Representativeness of the Telephone Persuasion Task

A major strength of the present experiment was the use of a very involving, naturalistic task--subjects participated as blood bank volunteer telephone callers. One might question, however, the

representativeness of this task for the study of interpersonal debilities. Data reported by Horowitz and French (1979) suggest that this task captures many of the features of interpersonal problems most frequently reported by lonely people. These researchers noted that lonely people primarily report problems of inhibited sociability, including such self-ascribed problem-items as: introducing myself to others; making phone calls to others; being friendly and sociable with others. The telephone persuasion task taps important features of all three of these problems.

Also, in pretesting situation items for use in the ASAT, Anderson et al. (Note 1) obtained ratings on an interpersonal/non-interpersonal scale for each of 22 situations. One of the situations was "working as a volunteer caller for the Red Cross, trying to persuade other people to donate blood." This item, the experimental task in the present study, was rated as the third most interpersonal one, behind items dealing with getting along with a roommate and trying to cheer up a depressed roommate. The telephone persuasion task is thus perceived as an interpersonal one, and is representative of problems reported by people who are having interpersonal difficulties.

Implications for Therapy

Finally, these findings may be relevant to a number of clinical problems such as loneliness, depression, and shyness. Obviously, to the extent that attributional style is related to these problems, the conclusions from the present study apply. Anderson et al. (Note 1) demonstrated that attributional style for interpersonal problems does correlate with loneliness and depression. Furthermore, prior to

participating in the present experiment each subject completed the UCLA Loneliness Scale and the Beck Depression Inventory. As expected, Behavior Style subjects were both less lonely and less depressed than Character Style subjects, though the difference was significant only on the loneliness measure, $F(1,57) = 10.41$, $p < .005$.

Of course, any therapeutic intervention designed for people suffering from these or similar interpersonal debilities must take several factors into account. Where there are real skills deficits, they must be corrected. But the present data suggest that the observed motivational and performance deficiencies are due, to a large extent, to self-defeating attributions. Therefore, the therapist must carefully assess the client's attributional style, particularly for the type of situations that appear to be causing the most problems for the client. If necessary, the client can then be taught to reinterpret failures in strategy and effort terms, rather than in ability and trait terms. Indeed, many current therapies, for example Beck's cognitive therapy (1967), already incorporate similar notions although for different theoretical reasons. In short, it is important to focus attention on the aspects of the problem situations that the person can change and control. Research on how such reattribution training is best accomplished is presently lacking (but see Andrews & Debus, 1978; Chapin & Dyck, 1976; Diener & Dweck, 1978; Dweck, 1975, for examples of reattribution training with children in the achievement domain).

This analysis assumes that the problem situations <u>can</u> be controlled, that the person can learn from failures, improve with practice, and

reach an acceptable level of success. But in many cases failure is guaranteed, either by particular ability deficits (not everyone can be a successful guidance counselor) or by the setting of unrealistic goals (we can't be loved by everyone). In such cases, maintaining high motivation levels may be more maladaptive than recognizing the hopelessness of the situation and giving up that particular goal. It is clear that a reattribution training procedure is not appropriate for all problems. For many of the problems presented in therapy, though, attending to the strategic features and to the effort requirements should help to break the failure-hopelessness-low motivation-failure cycle.

Developemnt of Attributional Styles

Since people differ in their attributional styles we might wonder about the origin of such differences -- how are they acquired? One possible answer is that we learn our styles from experience in a number of similar situations. If one never learns how to behave properly in a dating situation, for example, embarrassment or other unpleasant outcomes will frequently result. Over time, such frequent "failures" might be perceived by the individual as indicative of rather unchangeable personal deficits in that particular domain; i.e., the person begins to attribute such failures to lack of ability or to personality traits.

A second possible way attributional styles may be acquired, closely related to the first, is through experiencing a number of uncontrollable losses or failures that in reality do not reflect social skills deficits. These events may include such "failures" as loss of a friend or family member through death, or loss of friendship because of a move to college or to a new job location. People facing such losses may not recognize

that their current lonely or depressed state is due to loss of social reinforcers, through no fault of their own. They may instead begin to perceive themselves as lacking the skills necessary for a satisfying interpersonal life. These people may, in essence, fall victim to the fundamental attribution error (cf. Ross & Anderson, 1981) by overestimating personal responsibility and underestimating situational factors as causes of losses or "failures."

A third way to acquire attributional styles is from the usual socializing agents -- family, school authority figures, or peers. When we fail at some task there are usually others nearby who are quite willing to teach us how to understand the failure. If we are consistently told that our failures are due to our ineptness, we may begin to internalize the characterological attributional style. Dweck and Goetz (1978) provided evidence for such a learning process in schools. While the particular findings were fairly complex, the basic discovery was that the evaluative feedback patterns given to grade school girls and boys differed tremendously, leading to a more "helpless" achievement orientation in girls than in boys.

In sum, there are probably many ways in which different attributional styles can be acquired. The importance of such styles as determinants of reactions to everyday events demands further investigation into the sources of maladaptive attributional styles and into procedures for therapeutic change.

Since a characterological attributional style can be developed or learned in several ways, including in the absence of traumatic loss, we might ask about the consequences of having such a style. Are we to

infer that all people who tend to make character style attributions are lonely or depressed? The answer, of course, is "no." Such an attributional style is seen primarily as a contributor to loneliness, depression, and other similar symptoms. However, this analysis leads to the interesting prediction that people who acquire a characterological attributional style for their interpersonal failures will be considerably more likely to suffer a severe bout of depression or loneliness at some time in their lives, since the style describes how they will interpret particular kinds of data from everyday life. We all experience traumatic losses and failures in the interpersonal domain at least occasionally. Those people who ascribe such losses to their unchangeable, character defects will not be able to cope as effectively as those who look to changeable behavioral mistakes. Therefore, teaching people to make more behavioral attributions, where appropriate, might be useful as an "innoculation" against severe depression and loneliness as well as a part of thereapy to be used after such interpersonal debilities have occurred.

Reference Notes

1. Anderson, C. A., Horowitz, L. M., & French, R. Attributional style of the lonely and the depressed. Manuscript submitted for publication, 1981.

2. Jennings, D. L. Effects of attributing failure to ineffective strategies. Unpublished doctoral dissertation, Stanford University, 1979.

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Footnotes

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[1]A question arises concerning whether subjects should be preselected on the basis of having either high or low levels of the clinical symptom (i.e., loneliness or depression) or on the basis of having either high or low levels of the proposed mediating variable (i.e., the "changeability" of their attributional style for interpersonal behavior, c.f. Anderson et al., Note 1). Since the point of this research is to examine the effects of attributions and attributional style, it was decided that preselection should be based upon attributional style. Note that since attributional style correlates with loneliness and depression, we should expect the preselected groups to differ on these variables as well.

[2]To reduce evaluation concerns, on all questionnaires, tapes, and calling lists subjects were identified by a subject number, not by name.

[3]All reported significance levels are based on two-tailed tests.

[4]The smaller degrees of freedom for this and the following success rate measure is due to two factors. First, there were a few missing data points because of subject failure to properly complete the various materials. More importantly, a blocking variable--time of academic quarter--was included in all preliminary analyses. This blocking variable had an appreciable main effect ($p < .20$) only on motivation and success rate measures, presumably as a function of varying diffi-

culties in trying to persuade people to donate blood at different times of the quarter. In particular, subjects who were calling during midterms has a rather more difficult task. On the measures where Block did have some effect, the variance estimate used in the unweighted means analyses of variance was based on this expanded analysis of variance, with the corresponding loss of degrees of freedom. Where Block had little effect, data were collapsed across the blocking variable.

[5]There were no significant group differences on the three factors used in calculating success rates.

[6]For each subject, z-scores on the three measures were averaged. For subjects who failed to correctly complete all three measures, the average z-score was based on the available measures. Note that excluding subjects with incomplete data does not appreciably alter the results or the conclusions.

Table 1:

Predicted Pattern of Results on all Expectancy, Motivation, and Performance Measures.

		Attribution Manipulation		
		No Manipulation	Ability/Trait Manipulation	Strategy/Effort Manipulation
Attributional Style	Character	-1	-1	+1
	Behavior	+1	-1	+1

Table 2:

Session 1 Dependent Variables; Expectancy Measures.

	Attributional Style						
	Character			Behavior			Predicted
Attributional Manipulation[a]	NO	AT	SE	NO	AT	SE	Contrast F
Predicted Pattern of Means--Contrast Weights	-1	-1	+1	+1	-1	+1	
Success Expectancies	9.84	9.38	11.93	9.93	9.85	10.16	4.00*
Slope--Expected Change in Performance over Time	.118	.232	.327	.372	.300	.436	8.64**
Overall Index	-.465	-.336	.494	.101	-.073	.294	13.08**

[a]NO denotes No Manipulation, AT denotes Ability/Trait Manipulation, SE denotes Strategy/Effort Manipulation.

* $p < .05$

** $p < .005$

Table 3:

Session 2 Dependent Variables: Expectancies, Motivation, and Success Rates.

	Attributional Style						
	Character			Behavior			Predicted
Attribution Manipulation[a]	NO	AT	SE	NO	AT	SE	Contrast F
Predicted Pattern of Means--Contrast Weights	-1	-1	+1	+1	-1	+1	
Success Expectancies	79.8	104.0	161.9	110.1	88.1	139.3	6.15*
Motivation	-.347	-.411	.074	.662	-.406	.684	5.24*
Success Rate	.273	.299	.491	.526	.437	.552	6.50**
Overall Index	-.370	-.266	.298	.243.	-.239	.368	12.51**

[a]NO denotes No Manipulation, AT denotes Ability/Trait Manipulation, SE denotes Strategy/Effort Manipulation.

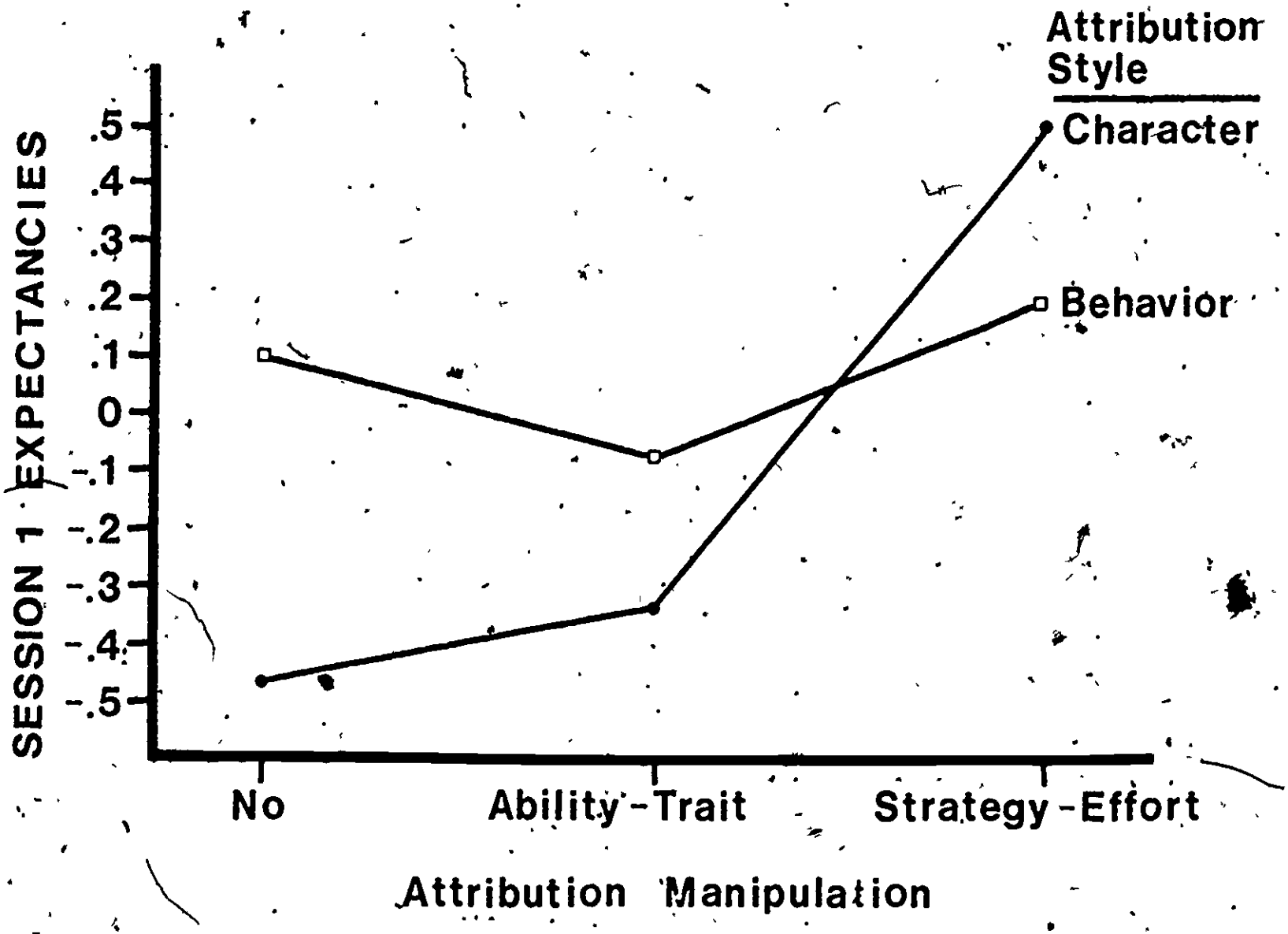
*$p < .05$

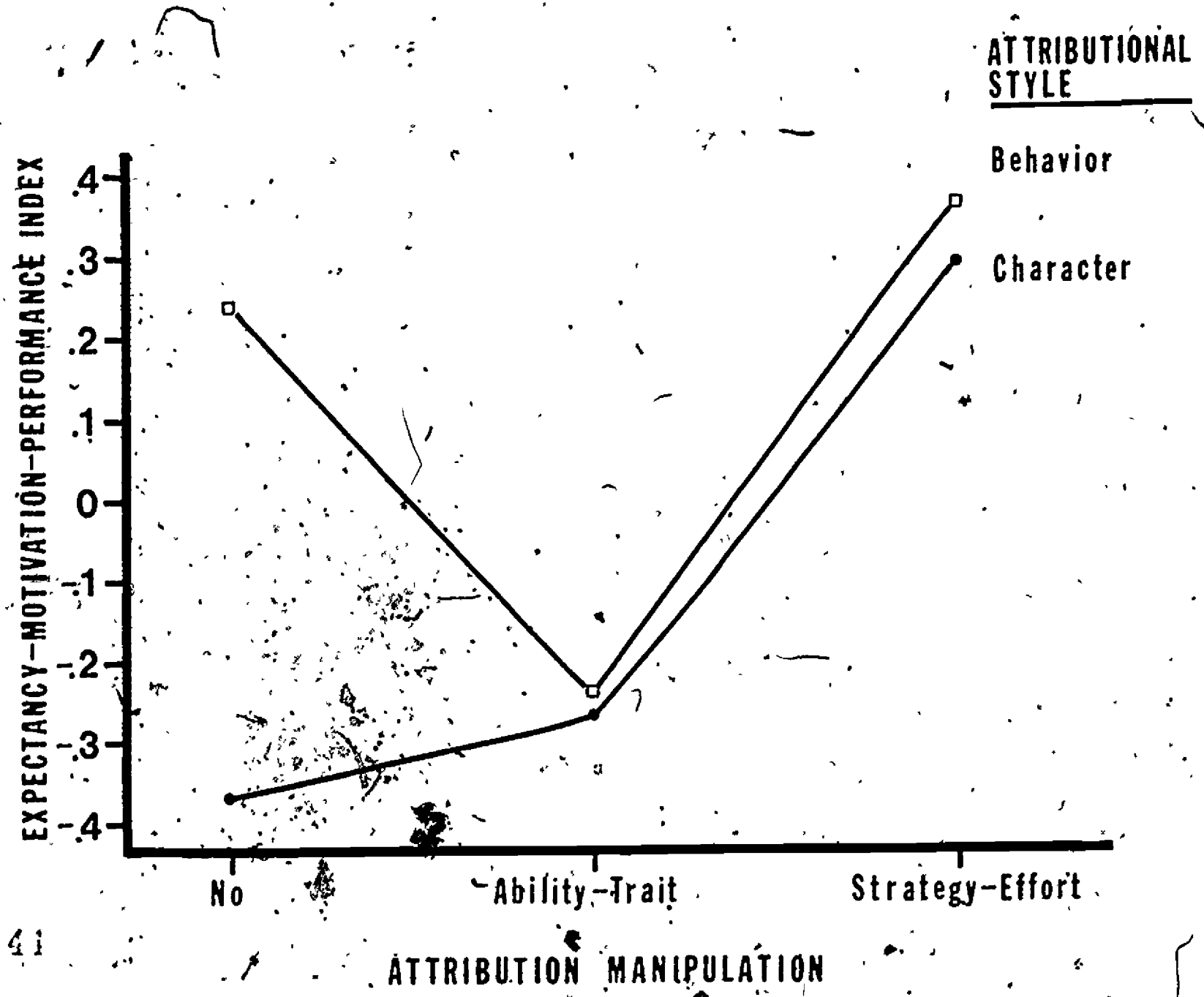
**$p < .005$

Figure Captions

Figure 1. Composite index of success expectancies, measured at the end of Session 1, as a function of attributional style and attribution manipulation.

Figure 2. Composite index of final success expectancies, motivation, and performance as a function of attributional style and attribution manipulation.


Attribution Style
Character
Behavior
SESSION 1 EXPECTANCIES
.5
.4
.3
.2
.1
0
-.1
-.2
-.3
-.4
-.5
No
Ability-Trait
Strategy-Effort
Attribution Manipulation


ATTRIBUTIONAL STYLE
Behavior
Character
EXPECTANCY-MOTIVATION-PERFORMANCE INDEX
.4
.3
.2
.1
0
-.1
-.2
-.3
-.4
No
Ability-Trait
Strategy-Effort
ATTRIBUTION MANIPULATION