



ATTRIBUTIONAL STYLE AND EVERYDAY PROBLEMS IN LIVING: DEPRESSION, LONELINESS, AND SHYNESS

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A large-scale questionnaire study was conducted to test several aspects of different attributional models of everyday problems in living. College students completed scales assessing depression, loneliness, and shyness. In addition, they completed a questionnaire that measured attributional style on five causal dimensions (locus, stability, controllability, globality, and intentionality) for four types of situations (interpersonal success and failure, noninterpersonal success and failure). The results of a series of regression and correlation analyses led to the following major conclusions: (1) Globality, intentionality, and stability may be dropped from attributional models of depression, loneliness, and shyness with little loss of predictive power; (2) controllability is the single most important dimension in predicting a person's level of depression, loneliness, or shyness; (3) locus adds to the prediction of these symptoms only when assessed by failure items; and (4) attributional style predicts these symptoms especially well when it is assessed by the type of situation items that are particularly relevant to the symptom. Implications for the construction and testing of attributional models are discussed.

Three of the most common complaints or problems revealed in psychotherapy and in questionnaire research are depression, loneliness, and shyness. Approximately 15% of the U.S. population shows significant depressive signs at any given time (Secunda, 1973); 26% report feeling lonely within the past few weeks (Bradburn, 1969); and about 40% of high-school and college students claim to be dispositionally shy (Zimbardo, Pilkonis, & Norwood, 1974). In short, most people know of someone whose life is currently disrupted by one or more of these prob-

We thank David M. Lane for his helpful comments on an earlier draft of this article. Requests for reprints should be sent to Craig A. Anderson, Department of Psychology, P.O. Box 1892, Rice University, Houston, TX 77251.

lems. Indeed, almost everyone will struggle with some of these everyday problems in living.

One puzzling feature frequently observed in people suffering from depression, loneliness, or shyness is their relative lack of effort to deal directly with their problems. Those suffering from shyness often avoid social situations and seldom attempt to learn or enact appropriate social behaviors. Those suffering from loneliness often avoid the one-on-one situations that are necessary to developing close personal relationships. Those suffering from depression often avoid all kinds of potentially rewarding activities, both social and nonsocial ones. That is, all three problems are associated with a lack of motivation that seems to include both less initiation of activity and less persistence.

Recent advances in attribution theory suggest an intriguing explanation of this phenomenon (Abramson, Seligman, & Teasdale, 1978; Anderson, 1983b; Anderson, Horowitz, & French, 1983; Peplau, Russell, & Heim, 1979; Weiner, 1979). It may be that depressed, lonely, and shy people consistently explain their successes and failures in a self-defeating way; they have a maladaptive attributional style. This attributional style may lead to expectations of poor performance in either social or nonsocial situations (or both), which would in turn produce low motivation, little flexibility in behavior, and poor performance. For example, a depressed person may attribute success to uncontrollable external factors (such as outside help), and failure to unchangeable internal factors (such as lack of ability). A number of empirical studies have demonstrated such maladaptive attributional styles for depressed people (e.g., Anderson *et al.*, 1983; Seligman, Abramson, Semmel, & von Baeyer, 1979), for lonely people (Anderson *et al.*, 1983), and for shy people (Teglas & Hoffman, 1982). In addition, it has been shown that temporarily changing attributional styles produces corresponding changes in motivation and performance (e.g., Anderson, 1983b).

Although research on attributional style has produced promising results, there remain a number of important unresolved issues. One issue, addressed by the present study, concerns the relative importance of dimensions along which causal attributions may vary. The predominant model in this area, Seligman's learned helplessness model, specifies that the three dimensions of locus (internal-external), stability (stable-unstable), and globality (global-specific) are the primary dimensions relevant to depression (Abramson *et al.*, 1978).

On the locus dimension, internal causes are personal characteristics, such as intelligence or physical strength; external causes are environmental or situational factors, such as other people or societal conditions. In explaining academic achievement, for instance, an attribution to intelligence would be classified as internal; an attribution to school

quality would be classified as external. On the stability dimension, stable causes are expected to remain the same over time (e.g., permanent brain damage as a cause of memory problems), whereas unstable causes are expected to change with time (e.g., fatigue as a cause of memory problems). The globality dimension represents the generalizability of causes. A global cause is one that generalizes to many or all situations in the individual's life (e.g., problem-solving skill). A specific cause pertains to only one or very few situations (e.g., difficulty of a particular problem). Weiner's attribution model, generated initially for achievement settings but recently generalized to affiliative settings as well, is also a three-dimension model. It differs from the learned helplessness model in that controllability is included and globality is excluded. The location of a cause on the controllable-uncontrollable dimension indicates the extent to which the individual expects to be able to control the cause in the future. For example, effort generally is perceived as more controllable than talent. A number of other researchers have concurred with Weiner that controllability (or changeability) is a crucial dimension (Anderson, 1983b; Anderson *et al.*, 1983; Wortman & Dintzer, 1978).

To date, there have been no major attempts to test the *relative* importance of these various dimensions as predictors of psychological problems. There are, of course, numerous studies that yield significant simple correlations between each dimension and some problem (usually depression). These dimensions, especially globality and stability, also occasionally yield nonsignificant correlations with the problem under investigation. Furthermore, recent research on the dimensionality of subject generated causes has shown that these dimensions are highly intercorrelated (Anderson, 1983a, 1984). Thus, locus and stability may both correlate significantly with depression (for example) because of their relationships with a simpler underlying dimension, such as controllability. That is, controllability may be the only important causal dimension in depression, and locus and stability may correlate with depression only because they are systematically related to controllability. What is needed is an examination of how much each dimension adds to the prediction of problems beyond what the other dimensions predict.

A second unresolved issue that is examined in the present paper concerns the relative importance of attributional styles assessed by different types of situation items. For instance, does attributional style for failure (or bad outcomes) predict depression better than attributional style for success (or good outcomes)? There are several reasons to expect that attributions will vary with the type of situation being explained. Although not much is known about the process through which a par-

ticular attribution is selected, one interesting approach to the question (Anderson, 1983a, 1984; Kruglanski, 1980) is to conceptualize attribution as a two-stage process. In the problem formulation stage, a list of plausible causes is generated. In the problem resolution stage, the final attribution is determined by selection of one or more causes from the list. The list of plausible causes is believed to be limited by the situation to be explained. For example, in explaining an interpersonal success such as making new friends at a party, social skill would be a highly plausible cause; academic ability would be an unlikely causal candidate. Anderson (1983a) tested the influence of situation type on the generation of plausible causal candidates and found significant differences in the kinds of causes generated for four different situation types created by crossing interpersonal versus noninterpersonal with success versus failure situation variables. In addition, Anderson (1984) found that final attributions were strongly influenced by the types of situations to be explained.

Just as individual attributions can be expected to vary with situation type, a person's habitual attributional style also might be influenced by differences in situations. For example, Teglasi and Hoffman (1982) reported a situation-specific attributional style in shyness. Studies of loneliness and depression have also shown attributional style to vary with the type of situation being explained. Differences in attributional style for success versus failure situations, as well as for interpersonal versus noninterpersonal situations, have been reported (e.g., Anderson *et al.*, 1983; Raps, Peterson, Reinhard, Abramson, & Seligman, 1982; Seligman *et al.*, 1979; Sweeney, Shaeffer, & Golin, 1982).

A final unresolved issue to be addressed in this paper is the possibility that depression, loneliness, and shyness might each require a different attributional model. That is, some causal dimensions or situation types may be more relevant to one of these problems than to another. There is reason to suspect, for instance, that interpersonal situations are particularly relevant to loneliness and shyness, whereas both interpersonal and noninterpersonal situations are relevant to depression. Horowitz, French, and Anderson (1982) used a prototype approach in describing depression and loneliness. Examination of the prototypic features of those two problems revealed that the features of depression reflect both interpersonal and noninterpersonal problems, whereas most of the features of loneliness reflect interpersonal problems. This leads to the prediction that a characteristic attributional style for loneliness will be evident mainly in interpersonal situations; depression will be accompanied by maladaptive attributional style in both interpersonal and noninterpersonal situations. The prototype approach has not yet been applied in studies of shyness. However, available evidence indi-

cates that for shyness, as for loneliness, interpersonal situations will be the most relevant (Teglasi & Hoffman, 1982).

One difficulty encountered when studying models of depression, loneliness, and shyness is that these problems are highly intercorrelated. Anderson and Harvey (1984) have recently addressed the issue of interrelated problems using a structural equation modeling technique. They examined standard paper-and-pencil measures of depression, loneliness, shyness, and social anxiety, and their results suggested some modifications of those measures. First, they found that shyness and social anxiety (as measured by the standard scales) are essentially the same construct. Although there may be a distinction between shyness and social anxiety at the conceptual level, Anderson and Harvey suggested combining the shyness and social anxiety scales for practical applications. (The new scale is the Modified Shyness Scale used in the present study.) Their results also indicated that the depression, loneliness, and shyness constructs are moderately interrelated. Further, several items in the standard scales load too highly on one or more unpredicted factors. Therefore, Anderson and Harvey suggested dropping these items from the scales. Although it is not possible to obtain orthogonal measures of interrelated constructs, dropping the suggested items will result in measures that are as factorially pure as possible.

In summary, the purpose of the present study was to assess the relative importance of each of the causal dimensions and situation types for each of the three problems: depression, loneliness, and shyness. If some causal dimensions or situation types are found to be more relevant than others to particular problems, then results might suggest modifications of the existing attributional models of those problems. Results also would have implications concerning emphasis of certain causal dimensions or situation types in attributional style treatment of the problems. Moreover, if the best-fit attributional model is different for each of the problems, then problem-specific therapeutic interventions would be indicated. If, however, depression, loneliness, and shyness are accompanied by a common attributional style, then a common approach to treatment would be warranted.

METHOD

OVERVIEW

To address these unresolved issues, a large number of undergraduates were asked to complete measures of depression, loneliness, shyness, and attributional style. The attributional style measure assessed sub-

jects' attributions in four situation types—interpersonal success, non-interpersonal success, interpersonal failure, and noninterpersonal failure. Attributional style was assessed on five dimensions: locus, stability, globality, controllability, and intentionality. On the intentionality dimension (from earlier achievement attribution models; see Weiner, 1979), effort would be classified as an intentional cause; ability would be an unintentional cause.

SUBJECTS

A total of 207 undergraduates from Rice University and the University of Houston participated for credit toward a psychology course requirement. Subjects completed questionnaire packets in groups of 6 to 27. Each subject received a written debriefing after completing the questionnaires.

PROCEDURE

Each questionnaire contained a cover letter, which gave the general instructions. The experimenter summarized the general instructions, and directed subjects to read the cover letter carefully and to ask any questions that arose. The general instructions were to read all specific scale instructions carefully, to ask questions that arose concerning the various questionnaires, and to respond truthfully and accurately to each item in each questionnaire. The experimenter further explained that the researchers were not interested in analyzing any particular person, but were interested in examining patterns of responses. Subjects were thus told that they should not put their names on the questionnaires.

PROBLEM MEASURES

The measures of depression, loneliness, and shyness were the Anderson and Harvey (1984) revisions of the Beck Depression Inventory (BDI) (Beck & Beck, 1972), the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), and the Shyness and Social Anxiety Scales (Cheek & Buss, 1981; Fenigstein, Scheier, & Buss, 1975). The Modified Depression Scale (MDS) consisted of 11 items from the BDI. The Modified Loneliness Scale (MLS) consisted of 16 items from the UCLA Loneliness Scale. The Modified Shyness Scale consisted of eight items from the

Cheek and Buss Revised Shyness Scale (J. M. Cheek, personal communication, 1982) and six items from the Social Anxiety Scale. (See Anderson & Harvey, 1984, for details on items in the three revised scales.)

ATTRIBUTIONAL STYLE MEASURES

To assess attributional style, subjects were given the 20 hypothetical situations from the Attributional Style Assessment Test-I (Anderson *et al.*, 1983). These items include five interpersonal successes, five non-interpersonal successes, five interpersonal failures, and five non-interpersonal failures. The following are examples of the four situation types:

Interpersonal Success: You have just attended a party for new students and made some new friends.

Interpersonal Failure: You have just failed at resolving an argument with a close friend.

Noninterpersonal Success: You have just received a high score on the midterm test in a class.

Noninterpersonal Failure: You have just lost a competitive match in your favorite sport.

Whereas Anderson *et al.* (1983) had subjects choose the most likely attribution from a list of six causes for each item, the present method had subjects imagine themselves in each situation. They were to "write down the one *major* cause of that outcome." Subjects then were asked to rate the cause they had written on each of five causal dimensions defined as follows:

Locus: The degree to which the cause is due to something about you, rather than to other people or circumstances.

Globality: The degree to which the cause is relevant to many different situations, rather than being specific to a few situations.

Stability: The degree to which the cause can be expected to be present at the same level every time the same situation arises.

Controllability: The degree to which the cause is a factor that you have control over.

Intentionality: The degree to which the cause reflects an intention.

The ratings were on 9-point scales, with high ratings indicating that the cause was perceived as more internal, stable, global, controllable, and intentional. The presentation order of situation items and rating dimensions was the same for all subjects.

RESULTS AND DISCUSSION

This was the first study to use the modified measures of depression, loneliness, and shyness suggested by Anderson and Harvey (1984), making comparison to previous criterion levels awkward. However, the descriptive statistics for these measures, presented in Table 1, revealed that a sizeable portion of our sample was suffering from one or more of these problems. For example, a score of 8 or higher on the 13-item BDI is often interpreted as indicating moderate depression. On the 11-item version (the MDS), 10% of our sample scored 9 or higher.

As expected, the three problems were moderately intercorrelated. The depression and loneliness correlation was $r(205) = .36, p < .001$. The depression and shyness correlation was $r(205) = .31, p < .001$. Finally, the loneliness and shyness correlation was $r(205) = .40, p < .001$.

Also as expected, the five causal dimensions were significantly intercorrelated. To assess these relationships, the correlations for each pair of dimensions were calculated separately for each of the 20 situation items. The averages of the correlations are presented in Table 2. For example, it can be seen in Table 2 that the more controllable causes were also perceived as more internal, global, stable, and intentional.¹

PREDICTIVENESS OF EACH DIMENSION

The first step in examining the usefulness of the five causal dimensions in attributional models of depression, loneliness, and shyness was to see how well each dimension predicted the problems. Four attributional

TABLE 1
Descriptive Statistics on Depression, Loneliness, and Shyness

	M	SD	MEDIAN	10TH PERCENTILE	90TH PERCENTILE
Depression	3.85	3.85	3	0	9
Loneliness	31.41	8.16	30	22	42
Shyness	25.23	11.08	26	10	40

1. Similar correlational analyses were conducted with situation type as the basic level of attributional style assessment. For example, for each subject an interpersonal success stability score was calculated by summing his or her stability ratings for the five interpersonal success items. These summed scores were then intercorrelated across dimensions and averaged across situation types. The results were uniformly higher interdimensional correlations than the corresponding ones reported in Table 2, all p 's < .01.

TABLE 2
Average Interdimensional Correlations

CAUSAL DIMENSION	CAUSAL DIMENSION			
	LOCUS	GLOBALITY	STABILITY	CONTROLLABILITY
Globality	.253***			
Stability	.220**	.333***		
Controllability	.484***	.196**	.167*	
Intentionality	.293***	.162*	.173*	.404***

Note. $n = 207$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

style scores were calculated for each causal dimension, one for each type of situation. For example, a subject's controllability score for interpersonal success was the sum of his or her controllability ratings of the causes generated for the five interpersonal success items.

Preliminary tests of the suitability of the causal dimensions for inclusion in the attribution models of these problems consisted of a series of canonical correlation analyses. For each dimension, the four attribution style measures were entered as predictors of the three problems. The resulting canonical correlations thus indicated how well each dimension in isolation correlated with the problems. Of the five dimensions, four yielded evidence of suitability for inclusion by demonstrating significant canonical correlations with the problems. Locus, stability, controllability, and globality were all significant predictors, $\chi^2(12) > 29$, p 's $< .01$. Intentionality, however, did not reliably predict the problems, $\chi^2(12) = 17.54$, $p > .10$, and was thus dropped from further consideration.²

These results do not, of course, demonstrate that the remaining four dimensions all belong in attributional models of the problems. As previously mentioned, any of the dimensions could spuriously relate to the problems simply because it correlates with another dimension

2. One might argue that multiple correlations with each problem, rather than overall canonical correlations, might be more appropriate for the goal of discovering differences between the problems. Of course, if any of the problems is strongly related to the dimension being tested, the canonical r should be significant (but possibly conservative). We also used the simpler multiple-correlation approach, which suggested the same conclusions as above, except that intentionality was not clearly eliminated from loneliness. However, subsequent regression analyses similar to those reported in the following text resulted in deleting intentionality from the loneliness model as well.

that is causally important. What is now required is an analysis of the independent contribution of each dimension to the prediction of the various problems.

THE FOUR-DIMENSION MODEL

At this point, four causal dimensions of attributional style remained as potentially important predictors of problems in living. These dimensions included locus and stability—key dimensions both in the learned helplessness model of Seligman's group and in Weiner's attribution model. Also included were globality (from learned helplessness) and controllability (from Weiner and others). Could we further reduce the number of causal dimensions without losing significant predictive power? That is, did the remaining dimensions overlap to such a degree that one or more of them became superfluous? The learned helplessness model suggests that controllability is superfluous. Weiner's model suggests that globality is unnecessary.

To examine this question, we performed a number of regression analyses to determine the unique contribution of each dimension as a predictor of the three problems. That is, we computed the increment in R^2 by each dimension when added to the other three dimensions. This was done for each situation type separately.

The results of these analyses are presented in Table 3. As can be seen in Table 3, controllability is hardly superfluous; indeed, it added significant ($p < .05$) increments to the prediction of the problems in 7 of 12 potential cases. Only interpersonal success-controllability did not add a significant increment to the prediction of depression. For loneliness and shyness, controllability yielded significant increments only for situation types that are particularly problematic for lonely and shy people (i.e., interpersonal situations). The other disputed dimension, globality, did not fare so well. It did not add a single significant increment to the prediction of the problems. The stability dimension yielded only one significant ($p < .05$) increment to problem prediction, in the case of interpersonal failure-stability predicting shyness.

The final dimension under consideration, locus, added significant increments in 3 of the 12 tests. The locus dimension added significantly to the prediction of depression when assessed for interpersonal and noninterpersonal failure situations (p 's $< .05$). Interpersonal failure-locus also added significantly to the prediction of shyness ($p < .05$).

Overall, these results demonstrated controllability to be a most important dimension for attribution models of depression, loneliness, and

TABLE 3
Unique Contributions of Each Causal Dimension by Situation Type: Increments in R^2 from the Four-Dimension Model

SITUATION TYPE	ATTRIBUTIONAL STYLE DIMENSIONS			
	LOCUS	GLOBALITY	STABILITY	CONTROLLABILITY
DEPRESSION				
Interpersonal success	.006	.000	.008	.012
Noninterpersonal success	.002	.002	.007	.045**
Interpersonal failure	.025*	.012	.001	.056***
Noninterpersonal failure	.022*	.003	.003	.040**
LONELINESS				
Interpersonal success	.010	.000	.005	.022*
Noninterpersonal success	.001	.005	.000	.017
Interpersonal failure	.016*	.006	.000	.043**
Noninterpersonal failure	.000	.000	.004	.002
SHYNESS				
Interpersonal success	.003	.005	.000	.028*
Noninterpersonal success	.003	.011	.001	.010
Interpersonal failure	.021*	.001	.018*	.033**
Noninterpersonal failure	.011	.008	.008	.013

Note. The significance of each increment was determined by an F test, $df=1, 202$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

shyness. In addition, it appears that both the globality and the stability dimensions may be dropped without much loss of predictive power. However, it is possible that dropping one of these two may allow the other to contribute significant predictive increments. This can occur if globality and stability share a fair degree of predictiveness. That is, such confounded variance would not appear in the unique increments of either, when both dimensions remain in the model. Removing either dimension, though, would effectively assign this shared predictiveness to the other dimension.

THE THREE-DIMENSION MODELS

Rather than dismissing both the globality and stability dimensions on the basis of the results in Table 3, a more conservative approach was taken. Two three-dimensional models were examined for the incremental contributions of each dimension to the prediction of the problems. In both models, locus and controllability were kept, based on the previously discussed results. In one model, globality was the third dimension; stability was the third dimension in the other model. The results from these analyses are presented in Table 4.

Once again, the results clearly indicated that controllability contributed the most unique predictiveness for each of the three problems. It is also clear that neither stability nor globality contributed much to their respective models. Stability yielded only 1 significant increment ($p < .05$) out of 12 tests. Globality contributed no significant increments.

Locus was again intermediate in usefulness as a predictor, contributing significant increments in 4 of 12 tests in the stability-included model, and in 3 of 12 tests in the globality-included model.

The picture that emerges from this series of analyses is fairly consistent across problems in living, and with past research on depression. The stability, globality, and intentionality dimensions proved to be of little value in predicting any of the measured problems, while controllability and locus seemed quite useful. The inconsistency of stability and globality as predictors of depression in past research is understandable when the increment analyses are considered. Rather than being primary causal dimensions contributing to depression, stability and globality occasionally may yield significant zero-order correlations with depression as a spurious result of their relationships to a primary depression-related causal dimension, which appears to be controllability.

THE TWO-DIMENSION MODEL

Are both the remaining dimensions, locus and controllability, important contributors to the prediction of problems in living? A regression analysis assessing the unique contribution of each dimension was performed. The results in Table 5 revealed three main points. First, controllability remained as a very significant predictor of depression, loneliness, and shyness in 9 of the 12 tests (p 's $< .05$). Second, locus did add to this prediction frequently enough to warrant keeping it in the attribution models.

Third, the significant contributions of locus formed an interesting

TABLE 4
Unique Contributions of Each Causal Dimension by Situation Type: Increments in R^2 from the Two Three-Dimension Models

SITUATION TYPE	ATTRIBUTIONAL STYLE DIMENSIONS					
	MODEL A		MODEL B			
	LOCUS	STABILITY	CONTROLLABILITY	LOCUS	GLOBALITY	CONTROLLABILITY
DEPRESSION						
Interpersonal success	.006	.008	.012	.010	.000	.014
Noninterpersonal success	.002	.005	.044**	.000	.001	.058***
Interpersonal failure	.032**	.007	.052***	.027*	.017	.058***
Noninterpersonal failure	.020*	.001	.040**	.023*	.002	.041**
LONELINESS						
Interpersonal success	.010	.005	.022*	.014	.000	.025*
Noninterpersonal success	.001	.001	.019*	.001	.006	.018*
Interpersonal failure	.020*	.000	.040**	.016	.006	.043**
Noninterpersonal failure	.000	.004	.002	.000	.000	.002
SHYNESS						
Interpersonal success	.005	.002	.029*	.004	.006	.028*
Noninterpersonal success	.005	.004	.011	.004	.014	.012
Interpersonal failure	.023*	.024*	.032**	.025*	.006	.038**
Noninterpersonal failure	.008	.004	.013	.012	.004	.013

Note: The significance of each increment was determined by an F test, $df = 1, 203$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

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TABLE 5
Unique Contributions of Each Dimension by Situation Type: Increments in R^2 from the Two-Dimension Model.

SITUATION TYPE	ATTRIBUTIONAL STYLE DIMENSIONS	
	LOCUS	CONTROLLABILITY
	DEPRESSION	
Interpersonal success	.012	.014
Noninterpersonal success	.001	.057***
Interpersonal failure	.039**	.055***
Noninterpersonal failure	.021*	.040**
LONELINESS		
Interpersonal success	.016	.025*
Noninterpersonal success	.002	.022*
Interpersonal failure	.022*	.041**
Noninterpersonal failure	.000	.002
SHYNESS		
Interpersonal success	.008	.031**
Noninterpersonal success	.009	.017
Interpersonal failure	.033**	.037**
Noninterpersonal failure	.010	.013

Note: The significance of each increment was determined by an F test, $df = 1, 204$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

pattern. Locus added significant increments only for failure situations. In addition, it added primarily to those situations that are particularly troublesome for people with the corresponding problem. For depression, which may contain both interpersonal and noninterpersonal components, locus contributed significant increments for both types of failure situations, F 's (1, 204) > 4.56, p 's < .05. For loneliness and shyness, however, locus added significant increments only for interpersonal failures, F 's (1, 204) > 4.67, p 's < .05.

Overall, then, it appears that the controllability of one's attributional style is of primary importance in predicting and understanding depression, loneliness, and shyness. As expected, people suffering from these problems in living tended to attribute their outcomes (as shown by the slopes in the various regression analyses) to uncontrol-

lable causes. For problematic failure situations, though, uncontrollability was not the entire story. In addition to viewing the causes of their failures as uncontrollable, these people also tended to see them as relatively internal. This finding parallels previous findings of a paradox in depressive attributional style. Investigators have been puzzled by subjects who appeared to assume responsibility (by making internal attributions) for outcomes they could not control. (See Abramson & Sackeim, 1977, for a review of relevant literature.) In the present study, we examined the controllability of causes rather than of outcomes. We see no reason to expect all internal causes to be controllable, and no paradox in attributing an outcome to a cause that is both internal and uncontrollable. Two such cases that might affect role performance, for example, are intelligence and physical handicap.

Although intentionality, globality, and stability sometimes show reliable zero-order correlations with problems such as those assessed in this study, the present analyses suggest that their relationships to depression, loneliness, and shyness are spurious functions of their relationships to controllability and locus. In short, intentionality, globality, and stability do not add significantly to the predictive power of controllability and locus.

SITUATION TYPES AND PROBLEMS

A second set of issues addressed by these data concerns the effects of different types of situations on attributional style-problem relationships. As pointed out earlier, previous research suggests that depression, loneliness, and shyness all often involve interpersonal problems. Only depression, though, is seen as frequently being closely related to noninterpersonal problems. Although a person's attributions for different situations are certainly correlated (Anderson, 1984), some researchers have suggested that attributional style-problem correlations should be highest when attributional style is assessed for situations that are most relevant to the problem being assessed. Thus attributional style-loneliness correlations should be highest for interpersonal situations, for example. In addition, there is some question concerning the relative importance of success versus failure situations in the assessment of attributional style. The learned helplessness model, for instance, explicitly delineates a failure-depression relationship, but does not do so for success. (See Anderson & Arnoult, in press, for a different view).

Two types of analyses were conducted to examine these questions. First, multiple correlations (R) from the two-dimension model were cal-

culated for each problem, for each situation type. Second, locus and controllability scores for each subject were combined with equal weightings, and bivariate correlations (r) with the three problems were calculated for each situation type. Note that for success situations, the locus and controllability scores were summed, since both were predicted to correlate negatively with the problems. For failure situations, though, controllability was expected to correlate negatively with the problems, whereas locus was expected to correlate positively. Thus, locus was subtracted from controllability for failure situations.³ This simple unit-weighting procedure was used for two reasons. First, it does not take undue advantage of random sampling differences that multivariate beta weights might (cf. Dawes, 1979). Second, testing differences between correlated bivariate correlations is relatively simple, whereas there are no well-defined procedures for performing the corresponding tests on correlated multivariate correlations. The results of these analyses are presented in Table 6. First, it should be noted that the unit-weighted version (r) of attributional style predicted the problems almost as well as the multivariate (R) version. There was, of course, some loss of predictive power; this is to be expected, since multivariate beta weights maximize R .

For predicting depression, there appeared to be no clear advantage for any particular type of situation. There was some hint that attributional style for interpersonal situations might lead to better predictions of depression, but relevant t tests on differences between the unit-weighted correlations were nonsignificant for both the success and the failure comparisons, t 's < 1 .

In the prediction of loneliness and shyness, interpersonal situations appeared better than noninterpersonal ones. This was especially true for failures. Attributional style for interpersonal failure was significantly correlated with loneliness and with shyness, r 's = .205 and .219, respectively; p 's $< .01$. The corresponding correlations for noninterpersonal failures were nonsignificant, r 's = .019 and .121, respectively. However, the difference between the interpersonal and noninterpersonal failure correlations was significant only for loneliness, $t(204) = 2.48$, $p < .02$.⁴

To give a better idea of how strongly the attributional styles relate to the problems, we have included in Table 6 the correlations corrected for the unreliability of our measurement instruments (Pedhazur, 1982).

3. Note that the multivariate beta weights were always in the predicted direction, and thus carried the same sign as the corresponding unit-weighted versions.

4. Because locus did not add significant increments in success situations, one might argue that it should not be included in the unit-weighted analyses of success situations reported above. Deleting the locus dimension from those analyses does not lead to any substantial changes in the results.

TABLE 6
Regression (*R*), Unit-Weighted (*r*), and Corrected (*Cr*) Versions of the Two-Dimension Model: Correlations between Attributional Style and Depression, Loneliness, and Shyness

	SITUATION TYPE			
	Interpersonal Success	Noninterpersonal Success	Interpersonal Failure	Noninterpersonal Failure
Depression				
<i>r</i> ^a	-.219**	-.217**	-.253***	-.195**
<i>R</i> ^b	-.219**	-.263***	-.256***	-.206*
<i>Cr</i> ^c	-.345	-.351	-.415	-.339
Loneliness				
<i>r</i> ^a	-.274***	-.197**	-.205**	-.019
<i>R</i> ^b	-.275***	-.205**	-.212**	-.065
<i>Cr</i> ^c	-.409	-.302	-.318	-.031
Shyness				
<i>r</i> ^a	-.257***	-.225**	-.219**	-.121
<i>R</i> ^b	-.261***	-.226**	-.220**	-.123
<i>Cr</i> ^c	-.384	-.345	-.340	-.199

^aFor success situations, the unit-weighted attributional style measure was the sum of controllability and locus scores; high attributional style scores indicated controllable, internal attributions. For failure situations, the unit-weighted attributional style measure was controllability minus locus scores; high attributional style scores indicated controllable, external attributions.

^bNote that the slopes of locus and controllability in the regression version are always the same as the sign used in the corresponding unit-weighted version for both dimensions.

^cThese are zero-order correlations (unit-weighted two-dimension version) corrected for unreliability of the measuring instruments. The most appropriate significance tests are those on the actual correlations (*r*).

**p* < .05.

***p* < .01.

****p* < .001.

These corrected correlations (for the unit-weighted two-dimension model) indicated that major portions of depression, loneliness, and shyness are predictable by attributional style.

SUMMARY AND CONCLUSIONS

The major approaches to the study of attributional models of such problems as depression, loneliness, and shyness have not fully realized the implications of intercorrelations among causal dimensions. That the causal dimensions of subject-generated causes are highly intercorrelated has been reported several times recently (e.g., Anderson, 1983a, 1984). The current study, using somewhat different procedures, also found

significant intercorrelations among the dimensions of controllability, locus, stability, globality, and intentionality. The implication of these results that many researchers have ignored is that interpreting any given zero-order correlation between a causal dimension measure of attributional style (e.g., globality) and a problem (e.g., depression) is quite problematic. The correlation may be due not to a direct relationship, but to the dimension's relationship to other dimensions that are directly related to the problem. While this problem is always present when interpreting correlational data, one can address the problem of competing dimensional models by assessing the unique contributions of each dimension. Such an approach in the present study yielded several rather dramatic effects.

Of the five causal dimensions suggested by various attribution researchers, only two added significant increments to the prediction of depression, loneliness, and shyness. In addition, the same two dimensions—controllability and locus—were obtained for all three problems. These results contradicted the prevailing attributional models. The learned helplessness model specifies that three dimensions—locus, stability, and globality—are important. However, our results showed globality and stability to be relatively unimportant in predicting depression. Weiner's achievement motivation model specifies that locus, stability, and controllability are the most important causal dimensions. This model fared somewhat better, as controllability was, empirically, the most important single dimension, and locus added significantly to problem prediction for failure situations (but not for success situations).

Finally, the different types of situations in which attributional style was assessed affected the relationship between attributional style and the various problems. All four situation types yielded significant attributional style-depression relationships. For success situations, depressed people generated fewer controllable and more external causes than nondepressed people, whereas for failure situations, depressed people generated fewer controllable but more internal causes than did nondepressed people. Interestingly, the interpersonal situations yielded somewhat stronger attributional style-depression correlations than did the noninterpersonal situations, but the differences were not significant.

Both loneliness and shyness were primarily related to attributional style for interpersonal situations (both success and failure), though they also correlated significantly with attributional style for noninterpersonal success. As with depression, the general relationship for loneliness and shyness was that the debilitated people (i.e., the lonely and the shy) made more uncontrollable attributions for successes and failures, more external attributions for successes, and more internal attributions for

failure than the nondebilitated people (i.e., the nonlonely and the nonshy).

The picture that emerges from these data is both simple and clear. Subjects' perceptions of the controllability of the causes of their outcomes are the primary determinants of attributional style-problem relationships. Basically, people with these problems in living see their outcomes as being caused by uncontrollable factors. In addition, when these people fail, they tend to blame *internal*, uncontrollable factors. This attributional pattern, in turn, can be seen as leading to low success expectancies, low motivation and low performance. This model predicts that changing attributional styles along a controllability dimension should lead to corresponding changes in expectancies, motivation, and performance. Anderson (1983b) has clearly demonstrated such effects. One problem with those findings, however, is that the attribution manipulation (ability and trait vs. strategy and effort attributions) may have also manipulated dimensions other than controllability. One could claim, for instance, that the controllable causes (strategy and effort) were also more unstable than the uncontrollable causes. Thus, it is difficult to be sure that observed effects were due to controllability rather than to other dimensions. The present results suggest that Anderson's (1983b) subjects were responding mainly to the controllability dimension of the attributions.

A possible solution to this problem in future research would be to scale a large number of attributions on these various causal dimensions (see Anderson, 1983a), and to test one dimension's effects while controlling for the others either statistically or by the selection of attributions that differ on only one dimension. In this way, we can test experimentally the effects of various causal dimensions on various independent variables.

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