CHAPTER 9

Attributional Models of Depression, Loneliness, and Shyness

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INTRODUCTION

In recent years, the mental health community has become increasingly aware of the problems of nonclinical populations. An amazingly large proportion of the U.S. population suffers from one or more of these "everyday problems in living" (Anderson & Arnoult, in press), such as depression, loneliness, and shyness. According to Secunda (1973), 15% show significant depressive symptoms at any given time. Bradburn (1969) reported that 26% are lonely. Zimbardo, Pilkonis, and Norwood (1974) showed that about 40% of high school and college students believe themselves to be dispositionally shy.

The costs of such problems, in terms of personal anguish and disrupted familial and other interpersonal relationships, are both high and obvious. Less obvious are the costs of these problems to our society as a whole. Such costs include those associated with divorce, mental health costs, and on-the-job losses due to absenteeism, low productivity, failed interpersonal communications, and other organizational problems that arise from ineffective interpersonal interactions.

Advances in several areas of psychological theory and a gradual eroding of once solid boundaries between these areas have led to exciting, promising approaches to the study of these everyday problems in living. In this chapter we will examine briefly several of these developments, noting proposed causal factors. We will then concentrate on recent attributional models and will present data that support and refine the attributional style models. Finally, we will examine in some detail the issue of direction of causality in attributional models and present data sup-

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porting the view that attributional style is a causal factor in depression, loneliness, and shyness.[1]

DEFINING THE PROBLEMS

Depression, loneliness, and shyness are difficult to define precisely. What does a person mean who says "I am depressed"? What features lead one to define oneself as lonely or shy? How does one measure these problems? How are the problems interrelated? To understand the meaning of these problems, we adopted the prototype perspective of Horowitz and his colleagues (e.g., Horowitz, French, & Anderson, 1982). In this view each problem is seen as consisting of a "fuzzy set" of features. No single feature is necessarily present when the problem is present, but sufficiently large combinations allow placement in the category. Measurement of the problems is also difficult and will be discussed shortly. First, consider the meaning of the problems.

The Prototype Approach

Horowitz and colleagues have borrowed the prototype approach from the cognitive literature on categorization (e.g., Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976). Briefly, a prototype of a concept or category is the set of the most common features or members of that category. A given instance is classified as a member of a given category quickly and easily if it possesses many of the most important prototypic features. Thus, a sparrow is a good example of the category "bird" (it has many prototypic features), whereas a penguin is a poor example (it has few prototypic features).

Horowitz et al. (1982) used this approach to study the meaning of depression and loneliness. Subjects were asked to think of someone they knew who was lonely or who was depressed. Next, they wrote down the person's most usual feelings, thoughts, and behaviors. Several judges independently tabulated these features. Features that had been listed by at least 20% of the subjects in their descriptions of lonely or of depressed people were defined as prototypic of that category.

For loneliness, 18 prototypic features resulted. An examination of these features, presented in Table 9.1, reveals that lonely people are seen

[1]When discussing depression we are referring primarily to moderate levels of unipolar or reactive depression, although some studies under consideration have used more severely depressed populations. We expect the basic findings presented in this chapter to apply to severe unipolar or reactive depression also.

Table 9.1

PROTOTYPIC FEATURES OF LONELINESS[a]

Feels separate from others, different	Feels inferior, worthless, inadequate
Feels isolated	Thinks "Something is wrong with me; I am inferior"
Feels excluded from activities, not part of a group	Feels paranoid
Thinks "I am different from everybody else"	Feels angry
Thinks "I don't fit in; I am alienated from others"	Feels depressed
Feels unloved, not cared for	Feels sad, unhappy
Thinks "Other people don't like me"	Avoids social contacts; isolates self from others
Thinks "I want a friend"	Works (or studies) hard and for long hours
Thinks "I don't know how to make friends"	Is quiet, reserved, introspective

[a]From Horowitz, L. M., French, R., & Anderson, C. A. (1982). The prototype of a lonely person. In L. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy,* (pp. 183–205). New York: John Wiley & Sons. Copyright 1982 by John Wiley & Sons. Adapted by permission.

(by lonely and nonlonely subjects; see Horowitz et al., 1982) as having thoughts, feelings, and behaviors reflecting separation from other people. Overall, loneliness seems to be a fairly clear and internally consistent problem.

Depression, on the other hand, was seen as a much more heterogeneous problem. Forty features were included in the prototype. Table 9.2 presents these features of depression. Interestingly, almost all of the features of loneliness appeared in the depression prototype. Thus, if we know that a person is lonely, we also know that he or she has at least some significant features of depression. Note also that whereas most of the loneliness features reflect interpersonal problems, many of the depression features do not. In other words, a lonely person has primarily interpersonal problems, whereas a depressed person may or may not have interpersonal problems.

To date, similar prototype analyses have not been conducted on shyness. We expect that such analyses would reveal a prototype that overlaps considerably with both loneliness and depression. First, some of the interpersonal features of loneliness and depression will also probably appear for shyness. Second, some of the noninterpersonal features of depression will probably fit shyness. For example, shy people are often seen as feeling "nervous, anxious, and afraid." Research on the prototype of shyness would help clarify the relationships between these problems in living.

Table 9.2
PROTOTYPIC FEATURES OF DEPRESSION[a]

Feels helpless, ineffective	Lacks energy, has trouble getting anything productive done
Thinks "I am inferior"	Sleeps a lot
Feels inferior, worthless, inadequate	Drinks alcohol as an escape
Thinks "I am inferior; I lack worth and ability"	Eats too much
Feels self-pity	Feels lonely
Thinks "I'm unattractive (ugly, fat, unappealing, sloppy)"	Feels alone, different from everyone else
Feels hopeless, pessimistic	Feels isolated
Has a pessimistic attitude, expects the worst	Thinks "No one understands me"
Thinks of committing suicide	Feels unloved, not cared for
Thinks "Life is meaningless, not worth living"	Thinks "No one really loves me"
Feels angry	Avoids social contacts, isolates self from others
Is quick-tempered, easily angered	Is quiet, doesn't speak much
Feels paranoid, doesn't trust others	Is "out of it," seems to be in another world
Thinks "Everyone is against me"	Is self-involved, preoccupied
Feels nervous, anxious, afraid	Doesn't laugh, smile, have fun
Overreacts to insignificant things	Feels like crying
Feels frustrated	Cries easily
Feels overwhelmed, can't cope	Feels sad, unhappy
Feels sleepy, tired, unenergetic	Thinks "I am unhappy"
Feels unmotivated, lacks initiative	Looks sad

[a]From Horowitz, L. M., French, R., & Anderson, C. A. (1982). The prototype of a lonely person. In L. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy,* (pp. 183–205). New York: John Wiley & Sons. Copyright 1982 by John Wiley & Sons. Adapted by permission.

MEASURING DEPRESSION, LONELINESS, AND SHYNESS

The prototype approach to defining these problems in living suggests a means of developing measures of the problems. One could simply combine the features of each problem into rating scales on which subjects rate the relevance of each feature to themselves. The more relevant the features are to a given person, the more that person "belongs" to that problem category. Indeed, Horowitz et al. (1982) have shown that when relatively many prototypic features of loneliness are contained in a description of a target person, that person is likely to be described by others as lonely.

There are numerous scales designed to measure these various problems in living. Interestingly, the techniques used to generate items for

these scales closely parallel the prototype approach. Typically, the researchers generate a pool of items that describe the symptoms or features of the problem in question. Subjects are then asked to indicate which items are self-descriptive, or to rate the self-descriptiveness, relevance, or frequency of occurrence of the items. For example, the UCLA Loneliness Scale consists of 20 self-referent statements generated by people working with the problem of loneliness (Russell, Peplau, & Ferguson, 1978; Sisenwein, 1965). Subjects simply indicate how often they feel as described in each statement.

The most commonly used measures of depression, loneliness, and shyness share this prototype-like approach to construction. In addition, the items contained in depression and loneliness scales correspond closely to the prototypes presented earlier. The UCLA Loneliness Scale, for example, contains the items "I lack companionship" and "My interests and ideas are not shared by those around me" (Russell, Peplau, & Cutrona, 1980; Russell et al., 1978). These correspond to the loneliness prototype features "Feels separate from others" and "Thinks 'I am different from everybody else.' "

The prototype approach suggests that measures of loneliness and depression will correlate highly; the prototypes overlap. Because we also expect the shyness prototype to overlap, we expect measures of shyness to correlate highly with depression and loneliness. Research supports this prediction (e.g., Anderson & Harvey, 1984). This presents a problem for research into potential differences between these problems in living. One cannot be sure that a measure of depression, for instance, is not inordinately contaminated by loneliness. Anderson and Harvey (1984) have recently addressed this issue in an empirical investigation using confirmatory and exploratory factor analyses on self-report measures of these problems in living. They used the short form of the Beck Depression Inventory, the revised UCLA Loneliness Scale, the Shyness Scale (Cheek & Buss, 1981), and the Social Anxiety Scale (Fenigstein, Scheier, & Buss, 1975). As expected, depression, loneliness, and shyness (including social anxiety) were interrelated. Also, it was discovered that several of the items loaded too highly on an unpredicted factor. For example, two loneliness items loaded higher on depression than on loneliness. Thus, it was suggested that these scales be modified slightly to insure factorially pure (but not orthogonal) measures of these constructs.

These various considerations, then, provide us with a good grasp of the meaning of these problems and acceptable scales with which to measure them. We now turn to a consideration of the causes of these problems.

CAUSES OF THE PROBLEMS

Before considering specific causal factors, it is worthwhile to note that three types of causes are generally distinguished—predisposing, precipitating, and maintaining. A predisposing cause is a factor that is present prior to the onset of the problem and that makes one susceptible to the problem or "at risk." A precipitating cause is a factor or event that triggers the onset of the problem. A maintaining cause is one that keeps the problem going once it has started. A given causal factor may be important in more than one sense. For instance, poor social skills may be a predisposing factor for loneliness; the person may have few sources of social support. It may also be a maintaining factor; once a person becomes lonely after losing a close friend (a precipitating factor), he or she may be unable to patch up the friendship or to find new friends.

Another means of discriminating causal factors is classifying them as stress factors, skill factors, or cognitive factors. Obviously these categories overlap, and there are many possible interactions between factors from different categories. Each set of factors, however, reflects a different perspective for viewing the problems in living.

Stress Factors

One set of causal factors in depression, loneliness, and shyness consists of the everyday stresses that people experience. The causal role of stressors in these problems in living is acknowledged in several types of psychological models, ranging from reinforcement theories (e.g., Ferster, 1973, 1974; Lewinsohn, 1974; Lewinsohn, Youngren, & Grosscup, 1979) to psychodynamic theories (e.g., Freud, 1925). The underlying theme is that some people experience stresses that are sufficiently disruptive to interfere with the maintenance of a normal, optimistic, approach to life. The onset of feelings of depression, loneliness, or shyness may be triggered by a sudden loss or failure, such as the death of one's spouse or loss of a job. The problem may be maintained by a low rate of positive reinforcement, which can lead to low motivation, poor performance, and continued low positive reinforcement. A. A. Lazarus (1968) claims that even when there is no apparent loss, a maladaptive reaction may be triggered by anticipation of loss or expectation of nonreinforcement. Considerable empirical evidence supports the notion that environmental stressors are associated with problems in living and will not be reviewed here (e.g., Cutrona, 1982; O'Hara, Rehm, & Campbell, 1982; Paykel et al., 1969).

A number of researchers, however, have noted that stressful experiences do not always produce maladaptive reactions. Events that precipitate depression in some people, for instance, apparently are successfully negotiated by others. Paykel (1974) proposed that such differences are due to individual vulnerability or predisposition. Some personality types may be more vulnerable to certain kinds of stresses than other types. (See R. S. Lazarus, 1966, and Brown, 1974, for similar analyses.) In addition, the effects of a given stressor appear to depend upon the coping resources available, including intrapersonal factors (e.g., health, energy, self-esteem, problem-solving skills) and situational and environmental factors (e.g., time, money, information, social status, social support). Furthermore, the individual's appraisal of available coping resources may be influenced by the presence of cumulative stress from other recent experiences and by previous successful or unsuccessful coping with a similar source of stress. (See Dohrenwend & Dohrenwend, 1974; Folkman, Schaefer, & Lazarus, 1979; Paykel, 1974, for discussions of these factors.) In sum, stress factors are very important in problems in living, but the effects of such stressors depend to a great extent on other mediating variables.

Skill Factors

A second set of factors consists of deficits in a person's skills. These factors are seen, typically, as interacting with stress factors. A person may receive few positive reinforcements because he or she lacks the skills necessary for producing successes in various domains.

A number of studies have, in fact, shown that people suffering from one or more everyday problems in living (i.e., depression, loneliness, shyness) often perform less well at various tasks than their nondebilitated counterparts. Horowitz et al. (1982) had lonely and nonlonely subjects generate solutions to hypothetical problem situations. Most of the situations were of an interpersonal nature, such as making new friends in a new neighborhood. One situation was noninterpersonal; it involved a person attempting to find a lost watch. On the noninterpersonal situation, lonely and nonlonely subjects did not differ in the number or the rated quality of proposed solutions. On the interpersonal situations, however, lonely subjects generated significantly fewer solutions and their solutions were rated as being of poorer overall quality than those of nonlonely subjects.

W. Jones and colleagues (Jones, 1982; Jones, Hobbs, & Hockenbury,

1982) also report evidence that loneliness is a social-skills problem. In dyadic interactions between new acquaintances, Jones (1982) found that lonely people made more self-statements, asked fewer questions, responded more slowly to their partner's statements, and changed the topic of conversation more often than did nonlonely people. Possible consequences of these behavioral patterns were suggested by the finding that lonely people were perceived as less attractive than nonlonely people.

Pilkonis (1977) has shown performance differences between shy and nonshy people in opposite-sex interactions. Subjects reporting for an experiment were seated next to an opposite-sex confederate for a 5-minute waiting period. During that time, shy subjects took longer for their first utterance, spoke less frequently, allowed more long silences to develop, and were less willing to break silences than the nonshy subjects. Lewinsohn (1974) provides a cogent discussion of the skill deficit–low reinforcement position on depression. Several studies have demonstrated such skills deficits in depressed people. Fisher-Beckfield and McFall (1982) found incompetence (as measured by their Problem Inventory for College Students) to be a concomitant of depression. Gotlib and Asarnow (1979) found a negative relationship between interpersonal problem-solving ability and depression in mildly and clinically depressed college students. Lewinsohn, Mischel, Chaplin, and Barton (1980) had depressed and nondepressed subjects participate in a social interaction task. Observer ratings of the social interactions yielded effects suggestive of social skills deficits in the depressed. Coyne (1976) measured the responses of subjects who interacted with either depressed or nondepressed target subjects. Subjects reported feeling more depressed, anxious, and hostile and were more rejecting of the target when the target was a depressed person. These results all suggest that the behavior of depressed people might lead to less positively reinforcing behavior from others.

However, one major problem with the skills approach is that it is often difficult to know whether a person has failed because of a lack of ability, a lack of motivation, or interfering anxiety. Such different interpretations of the poor performances of depressed, lonely, and shy people yield quite different implications for therapy. We will return to this point later. In sum, though, it appears that at least part of the problems of depressed, lonely, and shy people may be caused by their ineffective behaviors. For some of these people, this may reflect real skill or ability deficits.

Cognitive Factors

Several lines of investigation suggest that cognitive factors underlie problems in everyday living. By cognitive factors we do not mean lack of knowledge (such as social skills). Rather, cognitive factors here refer to beliefs, perceptual styles, or ways of viewing the world. For example, Beck and his colleagues postulate that depressed people have negative beliefs or expectations about themselves, their current situation, and their future (Beck, Rush, Shaw, & Emery, 1979). These negative views can lead one to interpret events in a pessimistically biased fashion and to behave in less than optimal ways. Such a negative world view can also lead, eventually, to poor performances, failures and losses, and ultimately can become a self-fulfilling prophecy.

There are several other cognitive positions that make similar claims. Ellis' rational-emotive approach (1962), for instance, points to irrational belief systems as causes of depressed people's problems. Bandura's social learning theory (1977b), with its emphasis on the causal significance of efficacy and outcome expectancies as determinants of motivation and performance, can also be seen as a cognitive approach.

Although research on these cognitive factors has yielded somewhat mixed results (see Coyne & Gotlib, 1983), most researchers agree that depressed and nondepressed people see their worlds quite differently. For instance, Kuiper and his colleagues have shown that depressed people have a distinctly negative self-schema (see Kuiper, Olinger, & MacDonald, in press, for a review of much of this literature).

A final cognitive factor concerns how people interpret or explain their performance outcomes to themselves. There may be consistent differences in the ways people make attributions for such outcomes, and these individual differences in attributional styles may be important predisposing and maintaining causes of everyday problems in living (e.g., Abramson, Seligman, & Teasdale, 1978; Anderson, 1983b; Anderson & Arnoult, in press; Anderson, Horowitz, & French, 1983; Weiner, 1979).

Before moving on to the attributional style literature, a few concluding comments on causal factors are in order. First, we hasten to point out that the above sketches of stress, skills, and cognitive factors are both brief and selective. The sketches were included merely to draw the reader's attention to a number of the more successful approaches. Second, it should be pointed out that most people working on problems in living acknowledge that all these types of factors (stresses, skills, cognitions) are important. Clearly, one's outcomes in the world (including stresses)

are important in determining one's mood state, motivation, self-beliefs, and so on. Similarly, one's skills influence one's outcomes. Finally, how one interprets an outcome influences whether the outcome is seen as a success or a failure, as well as one's affective reactions and self-beliefs. In short, we claim that cognitive positions also incorporate (often implicitly) the skill and stress positions.

ATTRIBUTIONAL STYLE MODELS AND DATA

An Overview of Attribution Theory

Attribution theory has been of interest to social psychologists for some time (e.g., Bem, 1972; Heider, 1958; E. E. Jones & Davis, 1965; Kelley, 1967, 1973). This work has focussed on a set of attribution-related questions. How do people explain events that they observe happening to themselves or to others? What factors determine whether or not an attribution will be made? How is a particular attribution chosen? What effects do different attributions have on subsequent behaviors, emotions, or beliefs? Although an extensive review of attribution theory is beyond the scope of this chapter, a limited discussion of some of the high points and of our own perspective will facilitate later discussions of the attributional style research.

People do not generate causal explanations or attributions for every observed event. Several recent studies suggest that people are most likely to engage in attributional processes in response to events that are concrete, important, unusual, or surprising (Anderson, 1983a; Pyszczynski & Greenberg, 1981; Wong & Weiner, 1981). The particular attribution that will be made depends upon a host of factors. For instance, Taylor and her colleagues have demonstrated that a variety of perceptual features, such as visual prominence or solo status within a group, influence responsibility attributions (see Taylor & Fiske, 1978). Other well documented attributional determinants include the pattern of prior event outcomes in the same situation (e.g., E. E. Jones & Goethals, 1971), information about event distinctiveness and consistency (e.g., Kelly, 1973), perspective of the attributor, as actor or observer (e.g., E. E. Jones & Nisbett, 1971; Monson & Snyder, 1977), and prior beliefs or expectations concerning the to-be-explained event (e.g., Wetzel, 1982).

The processes through which these factors operate are not well understood. One promising possibility has recently been suggested by Kruglanski (1980) and Anderson (1983c, in press). We may view the attribution

process as a two stage process. In the first stage, problem formulation, plausible causal candidates for an observed event are generated. In the second stage, problem resolution, the generated causal candidates are examined and evaluated until the "best" attribution (or combination) is chosen. Various perceptual (salience) effects on attributions may have their impact on both stages. For example, when an observer must attribute responsibility for a group outcome, a visually prominent person in the group will more likely be included on the plausible-causal-candidate list because he or she easily comes to mind. That person's actual contributions to the group may also be better recalled in the problem resolution stage because of the increased attention elicited by the visual prominence. Other factors may have their impact primarily on one stage only.

There are few directly relevant tests of this model, but two sets of predictions derived from this view have been confirmed. First, this model suggests that different types of situations will lead to generation of different types of plausible causal candidates; that is, each type of situation has its own *causal structure.* Anderson (1983c) has convincingly demonstrated this by finding significant differences in the types of causal candidates generated for the four situation types created by crossing interpersonal versus noninterpersonal with success versus failure situation variables. Second, and as predicted by the model, Anderson (in press) has shown that final attributions of actor and observer subjects are strongly influenced by the causal structure of the target situations.

One final set of questions addressed by attribution researchers concerns the effects of self-attributions on subsequent motivation, performance, and affect. Many relevant data sets come from the achievement domain. Of particular interest here are studies examining the effects of different kinds of attributions for failure on subsequent success expectancies, motivation, and performance. For example, it has been shown that attributing failure to lack of ability often leads to lower success expectancies and motivation than does attributing the same failure to lack of effort (see Weiner, 1972, 1974, 1979, for reviews of much of this literature).

This type of attribution research suggests a possible tie to the problems of depression, loneliness, and shyness. One puzzling feature of these problems is that people suffering from one or more of them frequently fail to attempt to resolve their problem. Depressed people often avoid potentially rewarding activities and give up easily in the face of failure. Lonely people tend to avoid the one-on-one situations that are necessary to the development of close personal relationships. Shy peo-

ple also avoid social situations and seldom attempt to learn or to enact appropriate social behaviors. In sum, these everyday problems in living often appear to be motivational, rather than skill or stress problems. Attribution theory suggests a plausible motivational model for these problems. Different attributional models of the problems differ in their specifics, but overlap considerably in their general form.

Basically, these various models postulate that the debilitated groups (i.e., depressed, lonely, or shy) tend to make maladaptive self-attributions. This maladaptive attributional style presumably contributes to the observed motivational and performance deficits through the process sketched out in Figure 9.1. This attributional model is, of course, oversimplified but it does make clear the assumptions behind the major attributional models of motivation. Attributions for performance outcomes influence a person's success expectancies. These expectancies in turn influence the person's motivation level. Included in the motivation construct may be variables such as persistence, commitment, and attitude or approach to the task. Motivation level, then, influences task performance and outcome. The outcome, of course, can then influence further attributions, completing the cycle.

How does this model explain the motivational and performance deficits of our debilitated groups? Assume for a moment that a hypothetical person A attributes interpersonal failures to unchangeable personal characteristics, such as ability or personality deficits. Further assume that A agrees to work as a volunteer for the Red Cross, with the task of convincing other people to donate blood. This task will result in a high failure rate. When A attributes such failures to ability deficits, his or her success expectancies will decrease. Failure becomes expected; there is no perceived possibility of improvement. These low success expectancies will lead to low motivation, indicated perhaps by low persistence, unenthusiastic persuasion attempts, and lack of effort to learn how to do better. Such a behavior pattern will lead to an even higher failure rate, which would seem to confirm the initial ability attribution.

Consider now person B, who attributes failure to strategic behavioral errors. When faced with the Red Cross failures, B will assume he or she did something wrong in the persuasion attempts and will try to learn how to do better. Success expectancies will remain fairly high, as will

Figure 9.1 The generalized attribution model of motivation and performance.

motivation, indicated by high persistence, enthusiastic persuasion attempts, and efforts to improve. This behavior pattern will lead to more successes, both in absolute and relative terms.

Note that in Figure 9.1 and in the previous scenarios there is no mention of affective reactions. Most researchers in this area agree that the affective component is a major part of the problems in living, and that it is strongly influenced by some component in this model. There is disagreement on where affect should be placed in the model. Some see affect as resulting primarily from the performance outcome—success leads to positive mood, failure to negative mood. Others suggest that the attribution in combination with the performance outcome determines the affective response. Finally, recent data suggest that some affects are outcome bound (e.g., happiness—success; frustration—failure), whereas some are tied to more specific attributions for an outcome (e.g., pride—success due to ability; incompetence—failure due to lack of ability) (Weiner, Russell & Lerman, 1979). It is also not clear whether affective reactions have any direct, causal impact on other components in this model, or whether they are best viewed as by-products of the other components. Although answers to these affect questions are important, they are not essential for our present purpose of examining attributional models of those problems. We now turn to those models and relevant data.

Weiner's Attribution Model

For a more complete statement of Weiner's attribution model, the reader is referred to several of his summary statements (Weiner, 1972, 1974, 1979).

Most of the early research in this area used various achievement tasks. Early researchers examining achievement motivation and responses to success and failure focussed on the locus of the perceived causes. Weiner challenged this focus, noting that much research confounded the locus dimension (internal versus external) with the stability dimension (stable versus unstable). Weiner suggested that these dimensions be factorially crossed, producing four attributions that were prototypes for the resulting four-cell table. Ability was seen as stable and internal; effort as unstable and internal; task difficulty as stable and external; luck as unstable and external. More recently a third attributional dimension, control, has been proposed. This produces an eight-cell, three dimension model (Locus × Stability × Control). It is important to note that Weiner's control dimension is not restricted to the actor's control over the cause. This shift in focus for the control dimension resulted from

the difficulty in conceptualizing an external but controllable cause. This problem is supposedly resolved by noting that an external cause (e.g., a teacher's bias) may be controlled by the external agent (e.g., the teacher), even though the actor-attributor (the student) can not control it (see Weiner, 1979). Weiner is not convinced of the value of the control dimension, however, because it is clearly not orthogonal to stability and locus (Weiner & Litman-Adizes, 1980). In addition to classifying attributions, this model also posits that attributions varying along these three dimensions produce consistent effects on several kinds of variables. Specifically, the stability dimension is linked to expectancy changes, the locus dimension is linked to esteem-related emotions, and control is linked to certain interpersonal judgments.

Finally, although this model was originally developed in achievement settings, Weiner and others have explicitly applied it to the problems of loneliness and depression (Peplau, Russell, & Heim, 1979; Weiner, 1979; Weiner & Litman-Adizes, 1980). Both the locus and the stability dimensions are linked to these problems through their impact on motivation. The stability of attributions influences motivation through success expectancies. The locus of attributions influences motivation by influencing the value of the consequences (affective reactions) of various outcomes. Weiner bases such predictions on an expectancy-value model of motivation (Atkinson, 1964; Weiner, 1972, 1974) in which the intensity of motivation is jointly determined by the success expectancies and the value of the goal object. (Note that the generalized attribution model in Figure 9.1 implicitly adopts a similar expectancy-value model, but does not necessarily assume that affective reactions directly influence the value of a goal object.) The control dimension is not explicitly linked to problems in living by Weiner, primarily because it appears to be related to locus and stability. Overall, then, the Weiner model predicts that attributional style differences on the locus and stability dimensions (and by inference the control dimension) will correlate with levels of everyday problems in living.

Learned Helplessness

Learned helplessness originally referred to a laboratory phenomenon in which animals exposed to uncontrollable (inescapable) aversive stimuli in one setting displayed "helpless" behavior in another setting. That is, even when the animal could escape aversive stimulation in the second setting, it typically would fail to do so. Noting the similarities to the behavior pattern of depressed people, Seligman proposed that some types of depression may essentially be a human learned helplessness

behavior pattern resulting from uncontrollable experiences (Seligman, 1975). This model of depression underwent a radical change in 1978, primarily because the learned helplessness–depression data from humans did not fit the (original) animal model very well. Excellent presentations of these problems and of the reformulated learned helplessness model may be found in Abramson et al., (1978) and in Abramson, Garber, and Seligman (1980).

The reformulated model is an attributional one and draws heavily on Weiner's work. The model posits that exposure to uncontrollable events elicits attributions that vary on three critical dimensions. Two of the dimensions, locus (internal–external) and stability (stable–unstable) are essentially the same as in Weiner's model. (Note that the locus dimension was relabeled "internality" by Abramson et al. (1978). We will use "locus.") The third dimension, globality (global–specific), refers to the range of situations to which the attribution is seen as applicable. Global causes are important in a wide range of situations, whereas specific ones are tied to a few situations (or one).

Perceiving and expecting response-outcome noncontingency (uncontrollability) leads to four types of depression-related components—depressed affect, lowered motivation, cognitive deficits (e.g., inability to learn response contingencies), and lowered self-esteem. The generality of the depression is influenced by the globality of the attributions. The chronicity (or duration) is influenced by the stability of the attributions. The self-esteem component is influenced by the locus of the attributions. Presumably, the motivational and cognitive deficits are influenced by the attributions through the person's expectations concerning likely future success or failure.

The experimental orientation of the learned helplessness tradition implies a situationist position on depression. That is, depression is largely a result of situational factors that influence outcomes (positive or negative), perceptions of uncontrollability, and attributions for those outcomes. In addition, the model explicitly predicts the existence of a maladaptive attributional style that is associated with depression. Specifically, depressed people are predicted to make more internal, global, and stable attributions for negative outcomes and more external, specific, and unstable attributions for postive outcomes, relative to nondepressed people. Similar predictions would seem to apply to the problems of loneliness and shyness.

Although this model clearly states that attributional style is a causal factor in depression, it does not state what type of causal factor it is. The model certainly implies that it is a maintaining cause. The maladaptive attributional style would tend to lead to continued failure or

negative outcomes in many situations, as suggested earlier in Figure 9.1. If such a maladaptive style is acquired in the absence of depression, it may also serve as a predisposing cause. Data relevant to these two questions will be considered later.

Controllability as an Attributional Dimension

Weiner's model and the reformulated learned helplessness model are extremely similar in form and content. Weiner is not sure that a third attributional dimension (in addition to locus and stability) is needed, but postulates that controllability is important. The learned helplessness model postulates a third dimension of globality and excludes controllability as an attributional dimension. It appears that the learned helplessness theorists prefer to think of controllability (and uncontrollability) as a characteristic of events, rather than of attributions. The notion is that the dimensions of locus, stability, and globality capture any controllability differences in attributions, making it superfluous as an attributional dimension.

Other researchers have questioned this dismissal of controllability as an attributional dimension. Indeed, several have suggested that the perceived controllability of a cause may be the most important factor in determining future motivational, cognitive, and performance effects of negative outcomes (e.g., Anderson & Arnoult, in press; Anderson et al., 1983; Wortman & Dintzer, 1978). We suggest that changes in success expectancies as a result of an outcome depend primarily on the extent to which the perceived cause of the outcome is seen as modifiable, changeable, or controllable by the person.[2] If a negative outcome is seen as being caused by a controllable factor, subsequent success expectancies (hence, motivation and performance) should not be adversely affected. If controllability explains the various attributional style–problems in living data as well as the locus and stability and globality dimensions, then there is no reason to adopt the more complex models. That is, the controllability of attributions may determine success expectancy changes, motivation, performance, and affect (including self-esteem). On the other hand, the controllability dimension may not be sufficient. Locus may be particularly important in determining affective reactions.

[2]We prefer the term changeability (Anderson et al., 1983) because it implies some control in the future, whereas controllability may be either future or past directed. Because of the popularity of the control concept, and because data shows that subjects see the two as having the same meaning (when the control questions are future oriented, Anderson, 1983c), we have decided to use controllability with this future-oriented focus.

In any case, an examination of the empirical relationships between these attributional style dimensions and depression, loneliness, and shyness is warranted.

Success of Various Causal Dimensions in Past Research

The overriding attributional style model of problems in living, as presented in Figure 9.1, explicitly predicts that measures of problems in living will correlate significantly with measures of attributional style. Four dimensions have emerged as the major contenders; these are locus, stability, globality, and controllability. For negative outcomes, the models predict that the debilitated people (the depressed, lonely, or shy) will make relatively more internal, stable, global, and uncontrollable attributions than the nondebilitated. For positive outcomes, the predictions have been less clear. Positive outcomes do not typically yield depressed affect, regardless of the attribution. One might thus expect little relationship between attributional style for positive outcomes and problems like depression. Consider, though, a lonely person who views herself as socially inept. She may attribute an enjoyable experience on a blind date to the extraordinary social skills of the dating partner. By attributing the positive outcome to such a personally uncontrollable cause, she will still have low expectations for future dates (with other people) and may display the low motivation and the consequent poor social performance that frequently lead to her social failures. Thus, the attributional models may be seen as predicting debilitated people to make relatively more external, unstable, specific, and uncontrollable attributions for positive outcomes than the nondebilitated.

The prototype approach to these everday problems in living suggests which types of situations will most likely lead to the predicted attributional style-problems in living correlations. The depression prototype contains both interpersonal and noninterpersonal features; thus, we expect depression to correlate with attributional style for both interpersonal and noninterpersonal situations. However, most problems presented in therapy are interpersonal (Horowitz, 1979), and the depression prototype is more interpersonal than not. The attributional style-depression relationship may thus be stronger for interpersonal situations than for noninterpersonal ones. The loneliness prototype was almost exclusively interpersonal. This suggests that the attributional style-loneliness relationship will be considerably stronger for interpersonal situations than for noninterpersonal ones. As pointed out earlier, shyness seems to overlap with both loneliness and depression, though

no prototype data exist to test this notion. The interpersonalness of shyness seems to suggest, however, that its relationship to attributional style will be strongest in interpersonal situations.

Before examining the data on the attributional style relationships, consider how attributions and attributional styles are measured. Early researchers simply presented subjects with two or more causes that were to be rated, checked, or compared. One popular approach had subjects rate the importance of ability and luck as determinants of their outcome. A better, but still inadequate, approach used the four attributional factors from Weiner's early Locus × Stability model. These approaches suffered from several major problems. First, subjects were restricted to causes that may not have been relevant to them or to their task. Second, many of the researchers made claims about the effects of different causal dimensions, but dimensionality was never directly assessed. Third, by presenting a list of causal factors the researchers may have made salient one or more causes that the subject would not ordinarily consider. If we adopt the two-stage attribution process presented earlier it becomes clear that these methods permit the researcher to influence the attributions at the problem-formulation stage. Other problems with these and similar measurement approaches are cogently discussed by Elig and Frieze (1979), and Deaux and Farris (1980).

One solution to several of these problems is to gather only open-ended attributions. That is, one simply asks the subject to write out the cause or causes of the event in question. These open-ended causes may then be classified or rated by other judges. This technique is usually considered too time consuming and is sometimes plagued with interrater reliability problems. A related solution is to use a forced-choice type format, but to derive the experimenter-provided list of causes from an open-ended pretest study. This technique also has drawbacks. The researcher cannot make unambiguous statements about the dimensionality of the attributions. Also, the problem of making all the listed attributions equally salient exists. This technique does allow the researcher to get fairly naturalistic attributions with an objective measurement technique, which may be sufficient for many research questions (see Anderson et al., 1983).

For research primarily directed at causal dimension questions, the best solution appears to be to have subjects generate open-ended attributions, which they then rate on the causal dimensions of interest. In the typical attributional style study, subjects imagine themselves in hypothetical situations, write out the major cause of each situation outcome, and then rate each cause on the relevant causal dimensions (see Anderson & Arnoult, in press; Seligman, Abramson, Semmel, & von Baeyer,

1979). The one major problem with this technique is that the experimenter selects the causal dimensions. The dimensions selected may not be the most relevant to the particular question or phenomenon under study. If, for instance, controllability is the best underlying dimension for understanding depression, the learned helplessness researchers will fool themselves and mislead others by measuring only locus, stability, and globality. The bulk of the attributional style research has been guided by the learned helplessness model of depression.

Several studies have examined controllability (or similar notions) for depression. Most such studies, however, have adopted a *past-oriented* perspective to the attributional dimension of controllability. We suspect this orientation (e.g., "Could you have controlled . . ." or "How much control did you have . . .") derives from viewing controllability as a feature of situations. The attributional model, though, implies a future-oriented view of controllability. That is, people's success expectancy changes, and subsequent motivation and performance, should be linked to their perceptions of how much they believe they can change, modify, or control, *in the future,* the causal factors that led to past successes or failures. Past-oriented assessments of controllability may reflect self-blame or self-credit tendencies, rather than expectancy-relevant attributional features. For example, two adolescent males may both attribute an interpersonal failure (e.g., getting turned down for a date) to a cause they had been unable to control (e.g., not being able to ask for the date in a self-assured manner). But this past-orientation does not predict their expectancy changes, motivation, or performance in the future. One may believe that he can change his self-presentation by practice; from the future perspective, this cause is seen as controllable, and future successes may be expected. The other may believe that he cannot improve with practice; this cause is uncontrollable from both the past and the future perspectives, and only more failure is expected. In our view, then, controllability as an attributional style dimension must be assessed from a future-oriented perspective. This can be done with several types of questions, such as "How controllable is this cause?", "To what extent can you change this factor?", or "Do you expect to be able to modify this cause in similar situations in the future?".

We reviewed all the available studies of attributional style and depression. The results are summarized in Table 9.3.[3] Several rather strict criteria were used in selecting these results from the myriad studies

[3]In any such tabulation, there are always arbitrary decisions concerning inclusion versus exclusion of borderline studies. Since the results are generally the same regardless of inclusion criteria, we are confident that our summary is accurate.

Table 9.3

STUDIES OF DEPRESSIVE ATTRIBUTIONAL STYLE

Study	Subjects[a]	*n*	Outcome[b]	Locus	Globality	Stability
		CORRELATIONAL ANALYSES: CORRELATIONS OF ATTRIBUTIONAL STYLE MEASURES WITH DEPRESSION				
Blaney et al., 1980	Students, sample 2	322–379	P	−.19**	.02	−.14**
			N	.07	.23**	.14**
Feather, 1983[c]	Students and other adults	248	P	−.16*	−.11	−.18**
			N	.11	.17**	.15*
Golin et al., 1981[d]	Students	180				
First session			P	−.17*	.02	−.05
			N	.10	.11	.20**
Second session			P	−.22**	−.13	−.16*
			N	.18*	.16*	.23**
Hammen & deMayo, 1982	Teachers	75	N	.10	—	.16
Johnson et al., 1983[c]	Students	144	P	.00	−.07	−.14
			N	.17*	.16	−.05
Manly et al., 1982	Pregnant women	55	P	.04	.14	−.09
			N	.10	.10	−.03
Metalsky et al., 1982	Students	277	N	.08	.19**	.24**
Seligman et al., 1979	Students	143	P	−.22**	−.04	−.28**
			N	.41**	.35**	.34**

GROUP DIFFERENCES ANALYSES: MEAN ATTRIBUTIONAL STYLE SCORES FOR DEPRESSED AND NONDEPRESSED GROUPS

Harvey, 1981[e]	Female students					
	D	45	P	.46	—	.46
	ND	46	P	.59	—	.45
	F			8.63**	—	.00
	D	45	N	.51	—	.44
	ND	46	N	.40	—	.43
	F			6.71**	—	.13
Raps et al., 1982	Male inpatients					
	D	30	P	4.93	5.10	4.90
	NDS	15	P	5.67	5.27	5.57
	NDM	61	P	5.49	5.31	5.53
	F			3.60*	.30	4.08*
	D	30	N	4.90	4.84	4.89
	NDS	15	N	3.51	4.10	4.01
	NDM	61	N	4.30	3.65	4.06
	F			7.34**	8.25**	7.67**
Sweeney et al., 1982[f]	Students					
	D	20	P	5.18	5.33	5.47
	ND	20	P	5.92	5.42	5.88
	F			5.84*	.15	4.16*
	D	20	N	4.85	4.34	4.80
	ND	20	N	4.38	3.48	3.87
	F			1.98	5.71*	8.43**

[a]D, depressed; ND, nondepressed; NDS, nondepressed schizophrenic; NDM, nondepressed medical; *F*, *F*-test.

[b]P, positive outcome; N, negative outcome.

[c]One-tailed tests were converted to two-tailed tests for consistency with results of the other studies.

[d]Some *p*s reported by Golin et al. were apparently incorrect. Therefore, we are reporting here the results of our tests of these correlations ($df = 178$).

[e]Harvey reported mean proportions of internal and stable causes given for an event.

[f]These results were not presented in the article, but were obtained in a personal communciation with Paul Sweeney, March 30, 1984. We thank him for his assistance.

*$p < .05$. **$p < .01$.

addressed to attributional style issues. These criteria were (1) individual dimensions were reported, (2) dimensional locations of causes were empirically determined, not interpreted (e.g., ability and effort versus luck and task difficulty as the internal-external locus constitutes an interpretation), (3) positive (success) and negative (failure) situations were distinguished, (4) depression and attributional style were measured concurrently, and (5) a given administration of a measure was used only once (e.g., attributional style correlations with two different depression measures were not both included in the table; when both the Beck Depression Inventory (Beck et al., 1961) and the Multiple Affect Adjective Checklist (Zuckerman, Lubin, Vogel, & Valerius, 1964) were used, only the BDI results were included), (6) when both correlational and extreme groups analyses were reported, only the correlational results were included, (7) only published studies were included, (8) controllability results assessed in a past-oriented focus were excluded, (9) studies with unselected samples smaller than 50 or with selected samples smaller than 15 were excluded. These criteria eliminated studies examining controllability in all cases except one, which we consider shortly.

Table 9.3 is divided into two sections. The top reports the zero-order correlations between attributional style measures and depression. The bottom presents means for depressed versus nondepressed groups on attributional style measures.

Overall, the results suggest that there is at least a weak relationship between attributional style and depression. For positive outcomes, increasing levels of depression are associated with more external and unstable attributions. For negative outcomes, increasing levels of depression are associated with more internal, global, and stable attributions. Globality of attributional style for positive outcomes does not appear to be related to depression. In addition, the attributional style–depression relationships displayed in Table 9.3 are quite weak, and there are reversals for each of the dimensions.

Hammen and deMayo (1982) had subjects rate the controllability of their attributions for negative outcomes with a future-oriented focus. In addition, subjects rated the locus and the stability of their attributions. Whereas neither locus nor stability correlated significantly with depression (as in Table 9.3 above), controllability was highly correlated ($r = .42$, $p < .01$). As our model predicts, those who felt they could control the factors leading to the negative events were less depressed than those who felt they had less (or no) control.

There have been few studies of the relationship between attributional style and loneliness or shyness. Anderson et al. (1983) showed that lonely people attribute interpersonal failures more to character deficits and less to behavioral mistakes than do nonlonely people. Teglasi and

Hoffman (1982) found evidence of locus and stability differences in attributional style between shy and nonshy subjects. These two studies suggest that our attributional model is relevant to loneliness and shyness, but more data are needed.

Confounding of Dimensions of Causality

Although the research on the relationships between attributional style and problems in living supports the generalized attributional model, it does not provide confirmation of the specific models. One major problem in choosing between the various dimensions is their apparent interrelatedness. Indeed, if these four dimensions were truly independent of each other, we would have no selection problem—all four would be kept on the basis of the reviewed results. The practice of creating factorial models of these dimensions and then filling in each of the resulting cells with one or more intuitive examples has misled some people into viewing the dimensions as orthogonal. The difficulty in creating causes that are external, stable, and controllable has led some researchers (e.g., Weiner, 1979) to point out the probable nonorthogonality of dimensions of causality. A common distinction frequently made now is between logical and empirical orthogonality. Two (or more) dimensions are said to be *logically* orthogonal if there exists at least one cause in each cell of the relevant factorial model. Two (or more) dimensions are *empirically* orthogonal if the population of causes is uniformly (or equally) distributed among the cells (or if they do not correlate significantly).

Although the logical orthogonality concept may at first appear both arbitrary and vacuous, it serves one important function. By manipulating causal attributions (experimentally or statistically) in a dimensionally orthogonal way, researchers may be able to examine the effects of different attributional dimensions on different outcome measures. For example, one might want to test the prediction that the stability of attributions determines the change in expectancies resulting from success or failure. Both the Weiner and the learned helplessness models suggest that one such test would entail manipulating ability versus effort attributions. This manipulation presumably controls for locus, since both ability and effort are internal. However, ability and effort clearly differ on controllability. Should results be assigned to stability or to controllability effects? In addition, past researchers using this approach have failed to assess the dimensional locations of the specific attributions being manipulated. Many assume, for instance, that both ability and effort are internal. But are they equally internal? Because we do not know, dimensional statements regarding the outcome are speculations at best.

We do not mean to imply that this approach is hopeless. With proper methodological refinements, such as assessing the dimensional locations of various attributions, attempts to control for the effects of various causal dimensions will likely lead to considerable advances in attributional models. This may be accomplished either by choosing empirically determined orthogonal manipulations or by statistically controlling for different dimensions. Our current concern, however, is with the extent of empirical relatedness in these causal dimensions. Two rather different techniques have been used to address this question. One methodological feature required for examination of this question is that the causes examined for dimensional interrelatedness must be generated by subjects in an unbiased format. The approach taken by the three studies to be examined here was to have subjects consider a set of hypothetical situations and to write down the major cause of the outcome for each situation. The dimensional locations of these causes were assessed and correlated.

In the first study to address this issue explicitly, Anderson (1983c) asked a group of subjects to examine the 20 hypothetical situations from the Attributional Style Assessment Test-I (ASAT-I, Anderson et al., 1983) and to list possible reasons for the outcome of each. The ASAT-I situations encompass a broad range of situations divided into four types—interpersonal failure, noninterpersonal failure, interpersonal success, and noninterpersonal success. Abstract versions of the causes were created and identical causes combined, resulting in a total of 63 different causes. Another group of subjects rated these 63 different causes on each of six causal dimensions, including locus, stability, globality, and controllability. The average dimensional ratings of the causes thus defined the dimensional locations of each cause. The cause "worked hard" could thus be located on each of six causal dimensions. The dimensional locations of the 63 causes were then correlated and yielded strong patterns of intercorrelations. These results for the four dimensions of present interest are listed in Table 9.4. Briefly, the only correlation that was not statistically significant was between stability and globality.

The other two studies relevant to the orthogonality question used quite different techniques (Anderson, in press; Anderson & Arnoult, in press). Anderson (in press) had subjects, both as actors and as observers, generate open-ended attributions for each of the 20 ASAT-I situations. Judges then classified each attribution as being one of the 63 causes identified by Anderson (1983c), and dimension scores were assigned accordingly. For each of the 40 items (20 actor attributions, 20 observer), the dimensional correlations were calculated across subjects. The average interdimensional correlations were all highly significant. As can be

Table 9.4

INTERCORRELATIONS OF CAUSES ON THE DIMENSIONS OF LOCUS, STABILITY, GLOBALITY, AND CONTROLLABILITY[a]

	Locus			Stability			Globality		
	r (61)[b]	r (76)[c]	r (205)[d]	r (61)[b]	r (76)[c]	r (205)[d]	r (61)[b]	r (76)[c]	r (205)[d]
Controllability	.68***	.75***	.48***	.45***	.46***	.17*	.42***	.55***	.20**
Globality	.40**	.49***	.25***	.19	.25*	.33***			
Stability	.66***	.70***	.22**						

[a]In all studies, larger dimension scores indicate a cause to be more internal, stable, global, and controllable. Numbers in parentheses indicate degrees of freedom.

[b]From Anderson, C. A. (1983[c]). The causal structure of situations: The generation of plausible causal attributions as a function of type of event situation. *Journal of Experimental Social Psychology, 19,* 185–203. Copyright 1983 by Academic Press. Adapted by permission.

[c]From Anderson, C. A. (in press). Actor and observer attributions for different types of situations: Causal structure effects, individual differences, and the dimensionality of causes. *Social Cognition.*

[d]From Anderson, C. A., & Arnoult, L. H. (in press). Attributional style and everday problems in living: Depression, loneliness, and shyness. *Social Cognition.*

*$p < .05$. **$p < .01$. ***$p < .001$.

seen in Table 9.4, the pattern was very similar to that found in Anderson (1983c).

In the final study, Anderson & Arnoult (in press) had subjects generate open-ended self attributions for each of the 20 ASAT-I situations. Subjects then rated their own causes on five dimensions—locus, stability, globality, controllability, and intent. In this study, then, the dimensional locations of subject-generated attributions were determined entirely by the subjects who generated the causes. Again, for each situation, the interdimensional correlations were calculated across subjects and averaged across situations. The correlations were all significant and as shown in Table 9.4, were similar to results of the previous studies. Overall, then, the results conclusively demonstrated that the four dimensions of primary interest are not empirically orthogonal. Internal causes are also relatively more stable, controllable, and global than are external causes, for example.

What does this tell us about attributional models of problems in living? The main point is that any simple zero-order correlation between a dimension of attributional style and some problem in living is subject to serious confounding. Is a correlation between globality and depression, for instance, due to globality of attributional style or to the controllability component of the globality measure? Two implications follow from this confounding. First, the presence of a significant zero-order correlation between a problem in living and a dimensional measure of attributional style does not unequivocally support that causal dimension as a factor in the problem. Any such zero-order correlation may be entirely spurious. Second, the models proposed by Weiner and the learned helplessness theorists may be too complex. There may be a single underlying causal dimension that relates to the motivational, cognitive, and affective features of various problems in living. Of course, two or more dimensions may be needed. We propose that controllability is the primary dimension affecting success expectancies, motivation, and performance (hence, outcomes and affect). It also seems reasonable to postulate an additional need for the locus dimension, related primarily to affect. In the next section we present an empirical test of these predictions.

An Empirical Test of Unconfounded Attributional Style Dimensions

To address the dimensionality question we recently conducted a large scale questionnaire study (Anderson & Arnoult, in press). College students completed the modified depression scale (MDS), the modified loneliness scale (MLS), and the modified shyness scale (MSS) proposed

by Anderson and Harvey (1984). These scales are modifications of the Beck Depression Inventory (short form; Beck & Beck, 1972), the UCLA Loneliness Scale, and the Shyness and Social Anxiety scales, as mentioned earlier in this chapter.

In addition, subjects completed an open-ended version of the ASAT-I (Anderson et al., 1983). In this version, subjects examined each of 20 hypothetical situations, wrote down a self-attribution for each situation, and rated their attributions on the five causal dimensions of locus, stability, globality, controllability, and intentionality. Intentionality attributional style did not reliably predict the problems in living; it will therefore not be considered in the remainder of this chapter.

As previously mentioned, there are four types of situations sampled by the ASAT-I. These are interpersonal failure (e.g., "While working as a volunteer caller for the American Red Cross, you failed to persuade very many people to donate blood"); noninterpersonal failure (e.g., "You have just failed the midterm test in a class"); interpersonal success (e.g., "You have just attended a party for new students and made some new friends"); and noninterpersonal success (e.g., "You have just won a competitive match in a sporting event"). By examining the relationships between attributional style and problems in living separately for each situation type and each problem, we were able to test the prototype-derived notions of loneliness as primarily interpersonal and depression as both interpersonal and noninterpersonal. We also tested for attributional style effects in both success and failure situations. The most important feature of this study, though, was that we were able to test the suitability of various causal dimensions for inclusion in attributional models of depression, loneliness, and shyness. We assessed attributional style for all four major causal dimensions and used the intercorrelations of these dimensional attributional styles to examine the predictive value of each dimension while statistically controlling for the others.

Regression analyses were conducted to see whether each causal dimension of attributional style could, by itself, predict each of the three problems in living. To test this, the four attributional style measures of each dimension (e.g., interpersonal failure locus, noninterpersonal failure locus, etc.) were entered as predictors of each problem in living in separate multiple regressions. As expected, each dimension yielded a significant multiple correlation for each of the problems, all $ps < .05$. The largest R (.35) was between stability attributional style and shyness. The smallest (.22) was between globality attributional style and loneliness.

These significant Rs indicate that each dimension *could* belong in the attributional model of problems in living. They do not demonstrate

which ones *do* belong. What is needed is an examination of the *unique* predictiveness of each causal dimension independent of the other dimensions. We conducted a series of regression analyses to determine the unique (or independent) contribution of each dimension as predictors of the problems in living. That is, we calculated the predictive increment in R^2 of each dimension, controlling for the other three dimensions. This was done separately for each situation type and for each problem in living. There were, thus, 12 separate tests (4 situation types $\times$ 3 problems in living) of significance of the unique or unconfounded explained variance for each dimension.

The results of these analyses were quite clear. Controllability was the most important dimension, yielding significant increments in 7 of the 12 possible cases (3 for depression, 2 each for loneliness and shyness). Globality and stability added little predictive power. Globality yielded no significant increments to the prediction of any of the problems; stability yielded only 1 barely significant increment out of 12 tests, and this was for shyness. Locus appeared to be of marginal utility, adding significant increments in 3 of 12 tests (2 for depression, 1 for shyness). A fourth increment, interpersonal failure locus predicting loneliness, was marginally significant ($p < .07$).

Perhaps the most convincing finding was the result of analyses pitting the controllability dimension against the other three combined (which, of course, constitutes the learned helplessness model). This procedure gives a great advantage to the learned helplessness model, because it allows confounded variance to count for the learned helplessness dimensions, whereas only unconfounded variance counts for controllability. That is, the learned helplessness increment includes the confounded locus-stability, locus-globality, and stability-globality variance as well as unconfounded variance from locus, stability, and globality. The controllability increment includes only the unconfounded variance of controllability. Despite this advantage, the learned helplessness dimensions did not fare well against controllability. As shown in Table 9.5, controllability contributed significant predictive increments in 7 of 12 tests (as mentioned earlier), but the combined learned helplessness dimensions yielded only two significant increments.

Subsequent analyses revealed that dropping the globality and stability dimensions from the attributional model yielded no significant decrements in predictive power (in 12 such tests). Interestingly, locus did add significant predictive power to controllability but only for failure situations. For depression, locus attributional style added significant increments when assessed for both interpersonal and noninterpersonal situations. For loneliness and shyness, however, locus attributional style added significantly only when assessed for interpersonal failures.

Table 9.5

INCREMENTS IN R^2 FOR THE LEARNED HELPLESSNESS DIMENSIONS (INCLUDING CONFOUNDED VARIANCE) VERSUS CONTROLLABILITY (UNCONFOUNDED VARIANCE ONLY)

Problem	Interpersonal failure	Noninterpersonal failure	Interpersonal success	Noninterpersonal success
Depression				
Locus, stabililty, and globality[a]	.058**	.026	.020	.008
Controllability[b]	.056***	.040**	.012	.045**
Loneliness				
Locus, stability, and globality	.029	.005	.021	.008
Controllability	.043**	.002	.022*	.017
Shyness				
Locus, stabililty, and globality	.058**	.022	.015	.024
Controllability	.033**	.013	.028*	.010

[a]Significance tested by $F(3,202)$.
[b]Significance tested by $F(1,202)$.
$^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

In sum, these results support the general attributional style model presented in Figure 9.1. In addition, the causal dimensions of attributional style best suited for models of problems in living are controllability and locus. Table 9.6 contains the beta weights and the multiple correlations obtained by entering both locus and controllability attributional styles as predictors of the three problems in living. The directions of the attributional style relationships with depression, loneliness, and shyness were as expected. The signs of beta weights indicated that people with high levels of these problems tended to attribute failures to more uncontrollable, internal causes than did people not suffering from the problems. Also, the debilitated tended to attribute successes to more uncontrollable, external causes relative to the nondebilitated people. A simpler approach to combining these attributional style dimensions is to compute a unit-weighted composite, based on the predicted relationship for each dimension. For success situations both controllability and locus were expected to correlate negatively with problems in living (and they did), so the success composites were formed by summing the dimensions. For failure situations, controllability was again expected to correlate negatively with the problems, but locus was expected to correlate positively (i.e., more internal attributions for failure by the debilitated). Thus, the failure composites were formed by subtracting the locus scores from the controllability scores. The composite attributional style correlations with problems in living were therefore expected to be negative. Table 9.6 also contains these correlations.

Examination of these composite correlations reveals several interesting points. All the correlations were negative (as predicted), and most were highly significant. The magnitude of the correlations within each problem is also informative. For depression, there were no significant differences between the correlations as a function of situation type. For both loneliness and shyness, however, attributional style for interpersonal situations produced larger correlations than did the corresponding attributional style for noninterpersonal situations. These patterns support our earlier speculations, from the prototype approach, that interpersonal attributional styles would be relatively more important for loneliness and shyness. However, this distinction produced a significant difference in correlations only between the loneliness–failure correlations ($p < .02$).

THE CAUSALITY ISSUE

The attributional style model of problems in living, depicted in Figure 9.1, suggests examination of three kinds of evidence. First, if attributional style is a cause (maintaining, predisposing, or both), then there

Table 9.6

RESULTS FROM THE TWO-DIMENSION CONTROLLABILITY–LOCUS MODEL OF ATTRIBUTIONAL STYLE

	Interpersonal failure			Noninterpersonal failure			Interpersonal success			Noninterpersonal success		
Problem	Beta[a]	R^b	r^c	Beta[a]	R^b	r^c	Beta[a]	R^b	r^c	Beta[a]	R^b	r^c
Depression												
Controllability	−.16***	.26***	−.25***	−.14**	.20*	−.20**	−.08	.22**	−.22**	−.16***	.26***	−.22**
Locus	.13**			.10*			−.08			.02		
Loneliness												
Controllability	−.30**	.21**	−.20**	−.07	.06	−.02	−.23*	.28***	−.27***	−.22*	.20*	−.20**
Locus	.21*			−.02			−.20			.07		
Shyness												
Controllability	−.38**	.22**	−.22**	−.24	.12	−.12	−.35**	.26***	−.26***	−.26	.23**	−.22**
Locus	.35**			.20			−.19			−.20		

[a]Beta weights when both predictors are in the regression equation.
[b]Multiple correlation; problem predicted by locus and controllability attributional style.
[c]Unit-weight attributional style correlation with problem.
*$p < .05$. **$p < .01$. ***$p < .001$.

should be significant, meaningful correlations between attributional style and concurrent problems in living. The data we've reviewed provide strong support for this prediction. Second, the model implies that appropriate attributional interventions should lead to predictable changes in problem-related features, (i.e., success expectancies, motivation, performance, and by implication, affect). This prediction holds, of course, only if attributional style is a maintaining cause. Third, problems in living at one point in time should be predictable by an attributional style that has developed (and been measured) at an earlier point in time. This prediction holds only if attributional style is a predisposing cause. We will consider this predispositional prediction first.

Correlational Data for a Causal Model

Concurrent correlational data, such as those presented in the previous section, cannot reveal the direction of causality. It may be that problems in living cause people to develop the maladaptive attributional styles rather than vice versa. A number of statistical techniques have been developed that purportedly allow causal inferences from correlational data, for example, path analysis, cross-lagged correlation analysis, and various hierarchical regression analyses on longitudinal data. In our view, the assumptions required for these models to be valid are virtually never met in this domain. On the other hand, we agree with many researchers that these and similar techniques may be useful in the examination of complex domains, as long as it is clear that causality cannot be unequivocally established by the techniques.

A number of researchers have turned to these approaches in this area with mixed results. Several studies purportedly show attributional style to be a predisposing cause of problems in living (e.g., Firth & Brewin, 1982; Metalsky et al., 1982; O'Hara et al., 1982), while others claim to have demonstrated that attributional style is not a predisposing cause (e.g., Lewinsohn, Steinmetz, Larson, & Franklin, 1981; Manly, McMahon, Bradley, & Davidson, 1982; Peterson, Schwartz, & Seligman, 1981). Interestingly, one of the studies that failed to support the predisposition causal prediction did provide some support for the maintaining cause position (Lewinsohn et al., 1981).

Our examination of these and related studies yielded no clear answer to the predisposition question. We feel there is some indication that attributional style is a predisposing cause of problems in living, but the evidence is not strong enough to provide a conclusive answer.

Experimental Analogues

The ideal methodology for addressing the causality questions is experimental. A simple three-group experiment could answer many of our questions. We might randomly assign subjects to a maladaptive attributional style, a no-manipulation, or an adaptive attributional style condition. We could then gather follow-up measures of problems in living at periodic intervals and see if significant differences emerge.

Obviously, such an experiment is impossible for ethical reasons. A number of analogues to this have been conducted over the years. In some studies, attributions for performance at a particular task have been manipulated and subsequent success expectancies, motivation, or performance assessed. Much of the work summarized earlier is of this type. (See Weiner, 1979, for a recent review.) Admittedly, many of these studies involve rather trivial experimental tasks such as solving anagrams. But the results from experiments using more complex tasks are pretty similar and generally support the idea that attributions are important determinants of motivation (including success expectancies), performance, and affective reactions.

In one such study, Anderson and Jennings (1980) induced subjects to attribute initial failures at interpersonal persuasion either to lack of ability or to use of an ineffective strategy. The persuasion task was getting college students to donate blood to a local blood bank. The results were that after initial failures, strategy condition subjects had higher success expectancies and expected considerably more improvement with practice than did ability condition subjects.

In a follow-up study, Jennings (1980) used a similar manipulation and task but also assessed actual performance (observer ratings). He replicated the expectancy difference between ability and strategy attribution subjects. Jennings also found that subjects led to attribute initial failures to ineffective strategies later changed their strategies more often and improved their persuasive appeals significantly more than did subjects led to attribute initial failures to lack of ability.

We may also view a number of therapy-type studies as analogues to our ethically impossible ideal experiment. In the achievement domain, several researchers have successfully modifed "helpless" behaviors by use of an attribution retraining program (e.g., Andrews, & Debus, 1978; Chapin & Dyck, 1976; Dweck, 1975). For example, Fowler and Peterson (1981) preselected grade school children on the basis of reading difficulties and maladative attributional styles. During the training period these children attempted to read easy and difficult sentences arranged

in two different partial reinforcement schedules. Some subjects also received either direct or indirect attribution instructions emphasizing effort for successes and lack of effort for failures. The results, measured by persistence at a reading task, indicated that the attribution manipulations produced significant increases in motivation.

In the clinical domain, several therapy studies on depression suggest that attributional style change is important to alleviation of depression (e.g., see Layden, 1982; Rehm, 1977; Rehm, 1982; Rehm & O'Hara, 1979). In addition, a number of the more successful cognitive and cognitive-behavior therapies seem to have built-in attributional manipulations. For example, both in Beck's cognitive therapy and in Bandura's self-efficacy therapy clients are led through success experiences designed to demonstrate that they have the capacity to succeed. These approaches also emphasize a problem-solving, effortful approach that looks very much like an attempt to provide clients with perceptions of controllability. (See Bandura, 1977a, for an overview of self-efficacy theory; see Beck et al., 1979, for a look at cognitive therapy for depression. See also Mahoney, 1974, and Meichenbaum, 1977, for similar cognitive behavioral approaches.) Rehm's self-management therapy for depression explicitly incorporates attributional components (Rehm, 1977).

To date, however, the specific effects of the attributional components in these therapies have not been clearly tested. In addition, there are logical problems in this approach. The attribution model predicts that giving subjects the adaptive attributional style should yield especially large increases in success expectancies, motivation, and performance of initially debilitated subjects. Since nondebilitated subjects presumably make such attributions already, the manipulation designed to give them adaptive ones should have little impact. The therapy studies, both in achievement and clinical contexts, have not examined this is detail. It may be that "effort" exhortations, for instance, will yield equally impressive improvement in debilitated and nondebilitated subjects, indicating a lack of specificity of effect predicted by the model. Obviously, the simple experimental analogue studies with nondebilitated subjects (e.g., Anderson & Jennings, 1980) do not address this specificity of effects notion either.

The Correlational Experiment

To establish that attributional style is a maintaining cause of problems in living, one needs to show three effects. First, one must show a relationship between attributional style and the problems in living (or pri-

mary characteristics of the problems, such as the motivational or performance deficits). Second, changes in attributional style brought about by some intervention must yield corresponding changes in the problems (or in the related characteristics). Third, these attribution induced changes must be larger for those subjects given attributions that differ from their typical style than for subjects given attributions that are similar to their typical style.

The minimal design for testing these notions is what we call the *correlational experiment*. In this design, subjects are preselected on the basis of the hypothesized causal factor. Both high- and low-scoring subjects are selected. In the present context, the preselection factor would be controllability attributional style. Subjects in each of these *correlationally* selected groups are then assigned to one of three experimental treatments. One treatment is a no-manipulation control. A second treatment manipulates the hypothesized causal factor to be high. The third treatment manipulates that factor to be low. In our present case, the second and third treatments would be attribution manipulations providing either controllable (adaptive) or uncontrollable (maladaptive) attributions for some task or set of outcomes. All subjects perform the relevant tasks under these conditions, and the hypothesized affected variables are assessed. In this case, these dependent variables might be global problems in living or more specific related variables such as success expectancies, motivation, and performance. By use of appropriate statistical contrasts, one can then assess the fit between the obtained results and those predicted by the causal model.

This type of correlational experiment could not be conducted in a clinical setting, for it would require a manipulation designed to make some people more depressed, lonely, or shy. It can be conducted in more limited laboratory settings where the manipulations are likely to be less powerful, less enduring, and more easily eradicated.

Anderson (1983b) has examined the attribution model in Figure 9.1 with such a correlational experiment. College student subjects were preselected on the basis of the controllability (or changeability) of their attributional styles for interpersonal failures (Anderson et al., 1983). Half of the subjects made relatively frequent attributions to uncontrollable, characterological causes (ability and personality traits) and relatively infrequent attributions to controllable, behavioral causes (strategy and effort). The other half of the subjects had the reverse attributional style. Subjects participated in an interpersonal persuasion task under one of three randomly assigned attribution manipulations. The manipulations consisted of suggesting that performance (success or failure) on the upcoming task depended upon a person's persuasive abilities and relevant

personality traits (i.e., the character style), persuasive strategies and effort (i.e., the behavior style), or no attributions were mentioned.

The specific task was to contact other university students by telephone and to try to convince them to donate blood to a local blood bank. The subjects were given one week to work on this task after which they returned to the lab and completed several questionnaires. This task was chosen for several reasons. First, it is a complex, interpersonal task of the type that is especially difficult for people with the problems in living (Horowitz et al., 1982). Second, the task guarantees fairly high-failure rates, which is important since people with problems in living often show heightened deficits after initial failures. Third, the task allowed the collection of fairly straightforward success expectancy, motivation, and performance measures. Success expectancies were assessed by asking subjects to predict their success rate in an upcoming blood drive. A task persistence measure (number of calls made during the experimental week) and a commitment measure (willingness to participate as a caller in an upcoming blood drive) were combined as a measure of motivation. Actual success rate during the experiment consitituted the performance measure.

The results, presented in Figure 9.2, strongly supported our attributional model. (Note that Figure 9.2 presents the results of a composite index of the success expectancy, motivation, and performance measures; the results for each of these measures were individually significant as predicted, as well.) When attributions were not manipulated, behavior style subjects had higher success expectancies, demonstrated greater motivation, and produced better success rates than did character style subjects. When attributions were experimentally manipulated, corresponding behavior and character style subjects were not significantly different from each other. Instead, success expectancies, motivation, and success rates were all determined by the attribution manipulation. Finally, note that effects of the attribution manipulation were specific to the groups for which the manipulations were different from the customary attributional style. That is, the strategy–effort manipulation had a large impact on character style subjects but little impact on behavior style subjects. Similarly, the ability–trait manipulation had a large impact on behavior style subjects but no impact on character style subjects. Overall, the observed pattern of means conformed quite closely to the pattern predicted by the attributional style model, as was shown by the highly significant predicted contrast effect ($p < .001$) and the nonsignificant residual variance ($p > .50$).

These results demonstrated attributional style to be a maintaining cause of the motivational and performance deficits of people with these

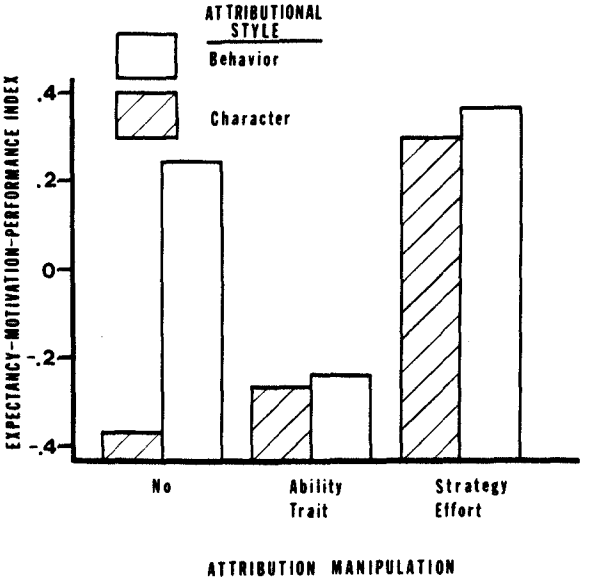

Figure 9.2 Composite index of success expectancies, motivation, and performance as a function of attributional style and attribution manipulation. (From Anderson, C. A. [1983b]. Motivational and performance deficits in interpersonal settings: the effect of attributional style. *Journal of Personality and Social Psychology, 45,* 1136–1147. Copyright 1983 by American Psychological Association.)

problems in living. It is important to note that the attributional styles examined by Anderson (1983b) had previously been found to correlate with depression and loneliness (Anderson et al., 1983). Furthermore, premeasures of depression and loneliness indicated that the character style groups were more depressed and lonely than the behavior style groups (Anderson, 1983b). Although shyness was not assessed in either of those studies, the results of Anderson and Arnoult (in press) in conjunction with the results shown in Figure 9.2 clearly suggest that attributional style is a maintaining cause of all three types of problems in living.

The success rate results of Anderson (1983b) have additional implications about the causes of these problems in living. If depressed, lonely, and shy people experience frequent interpersonal failure because of true skill deficits, then a strategy–effort attribution manipulation should not improve their success rate but only their motivation. However, the character style subjects in the strategy–effort manipulation group had significantly higher success rates than their ability–trait and no-manipulation counterparts; indeed, their success rates were not reliably

different from the best performing group of behavior style subjects. This suggests that a significant portion of people suffering from these various problems in living obtain their high failure rates because of motivational rather than skill deficits.

SUMMARY AND CONCLUSIONS

We have covered a great deal of material in this chapter, ranging from the definitions of problems in living, through assessement techniques and attribution theory, to attributional models and empirical tests of those models. In any chapter of this sort, differences between the theories of different research groups tend to be over-emphasized. Although we feel that our emphasis on controllability as an attributional dimension represents a definite improvement over earlier attribution models, we would like to point out that the major tenets of those models remain unchanged. The common model is a motivational one that adapts many ideas from expectancy-value theory. Attributions affect expectancies (and possibly goal values), subsequent motivation, and performance. In short, our approach differs little from and owes an intellectual debt to the Weiner group and the learned helplessness group.

We have additionally emphasized the attributional aspects of problems in living at the expense of the stress and skills aspects. Once again, this is a function of chapter writing and not a negative assessment of the value of these different aspects. Clearly, depression, loneliness, and shyness result from a host of intra- and interpersonal factors. Which factors are most important for a specific client in therapy or for a broader population of people must be determined before appropriate therapy or social intervention can be created.

In reviewing the relevant theoretical and empirical literatures for this chapter, we were struck by the relative lack of high quality research and the difficulty of conducting such research. We include our own studies among those that could, retrospectively, have been better conceived or conducted. But on the whole, the set of studies reviewed here, each with its own particular strengths and weaknesses, has produced a fairly convincing picture of problems in living. There are a number of gaps in the research, however, that offer exciting research possibilities. We will mention only a few.

The prototype approach to the study of depression and loneliness has proved useful in helping define these problems. A similar analysis of shyness would improve our understanding of this problem and would suggest therapeutic strategies for it. (See Horowitz, Weckler & Doren,

1983, for a discussion of therapeutic implications deriving from the prototype approach.)

Although our data suggest that controllability and locus attributional styles are of primary importance in everyday problems in living, much work remains to be done on this model. We have not, for instance, identified specific effects of attributional dimensions on specific dependent variables. Is locus primarily related to self-esteem and other affective variables? Does controllability primarily influence changes in success expectancies? Related questions concerning affect remained unanswered. Where does affect fit in the model? Is affect a direct cause as well as an effect? If so, how does it influence motivation, performance, or attributional style?

The development of different attributional styles is also an area that requires further investigation. What kind of child-rearing practices, family environments, and life experiences lead to particularly adaptive or maladaptive attributional styles? At the present time, it is not even clear that attributional styles are predisposing causes of problems in living. It may be that the maladaptive style develops concurrently with the problems, serving only as a maintaining cause. Or, the style may be dormant in depression-prone individuals until negative life events begin to overwhelm them.

More and better longitudinal studies may help answer some of these developmental and causal questions. More experiments with clinical populations are also needed. To conduct these studies properly, though, we need to have a better idea of the dimensional locations of different types of causes. Otherwise, manipulations of different attributions in the clinic or the lab may confound several dimensions, severely limiting theoretical gains. In addition, the specific effects of the attributional components of various therapies need more investigation.

Finally, the notion of "adaptive" versus "maladaptive" attributional styles needs to be examined carefully. Throughout much of this chapter we have implied that there exists such a simple dichotomy. However, what is adaptive for one person in one situation may be maladaptive for another. For example, a first-semester freshman may attribute his feelings of depression and loneliness to a lack of effort in making new friends. He may then make more of an effort by attending various social functions, organizing small pizza parties, and trying hard to behave in a friendly fashion. If the person has the requisite social skills, the effort attribution is probably more adaptive than an ability attribution for the initial problem. Another person in the same situation but without necessary social skills may be better off making an ability attribution for the situation. An effort attribution may induce the same type of high mo-

tivation, but the lack of skills may cause these efforts to result in more frequent and more devastating failures. Also, the effort attributions may lead the person to ignore academic demands as "just one more party" may be desired to attempt to make new friendships. An ability attribution may be more adaptive here by preventing more social embarrassments or by leading the person to seek social skills assistance.

The adaptive-maladaptive question may simply be an issue of attributional accuracy. We suspect that accurate attributions are usually more adaptive than inaccurate ones (assuming one can identify what is accurate). But in some cases, an inaccurate attribution may be more beneficial in the long run. For instance, attributions to controllable causes (e.g., strategy) may maintain high motivation longer than attributions to uncontrollable ones (chance). In some truly uncontrollable situations, persistence for whatever reason, including an inaccurate attribution, may ultimately yield success.

A better understanding of these various questions will, we feel, lead to improvements in therapy, in the socal structuring of our institutions (e.g., universities), and in the quality of life in general.

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