

Learned Helplessness in Humans: Critique and Reformulation

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The learned helplessness hypothesis is criticized and reformulated. The old hypothesis, when applied to learned helplessness in humans, has two major problems: (a) It does not distinguish between cases in which outcomes are uncontrollable for all people and cases in which they are uncontrollable only for some people (universal vs. personal helplessness), and (b) it does not explain when helplessness is general and when specific, or when chronic and when acute. A reformulation based on a revision of attribution theory is proposed to resolve these inadequacies. According to the reformulation, once people perceive noncontingency, they attribute their helplessness to a cause. This cause can be stable or unstable, global or specific, and internal or external. The attribution chosen influences whether expectation of future helplessness will be chronic or acute, broad or narrow, and whether helplessness will lower self-esteem or not. The implications of this reformulation of human helplessness for the learned helplessness model of depression are outlined.

Over the past 10 years a large number of experiments have shown that a variety of organisms exposed to uncontrollable events often exhibit subsequent disruption of behavior (see Maier & Seligman, 1976, for a review of the infrahuman literature). For example, whereas naive dogs efficiently learn to escape shock by jumping over a barrier in a shuttle box, dogs that first received shocks they could neither avoid nor escape show marked deficits in acquisition of a shuttle escape response (Overmier & Seligman, 1967; Seligman & Maier,

1967). Paralleling the experimental findings with dogs, the debilitating consequences of uncontrollable events have been demonstrated in cats (Masserman, 1971; Seward & Humphrey, 1967; Thomas & Dewald, 1977), in fish (Frumkin & Brookshire, 1969; Padilla, 1973; Padilla, Padilla, Ketterer, & Giacalone, 1970), and in rats (Maier, Albin, & Testa, 1973; Maier & Testa, 1975; Seligman & Beagley, 1975; Seligman, Rosellini, & Kozak, 1975). Finally, the effects of uncontrollable events have been examined in humans (Fosco & Geer, 1971; Gatchel & Proctor, 1976; Glass & Singer, 1972; Hiroto, 1974; Hiroto & Seligman, 1975; Klein, Fencil-Morse, & Seligman, 1976; Klein & Seligman, 1976; Krantz, Glass, & Snyder, 1974; Miller & Seligman, 1975; Racinkas, 1971; Rodin, 1976; Roth, 1973; Roth & Bootzin, 1974; Roth & Kubal, 1975; Thornton & Jacobs, 1971; among others). Hiroto's experiment (1974) is representative and provides a human analogue to the animal studies. College student volunteers were assigned to one of three groups. In the controllable noise group, subjects received loud noise that they could terminate by pushing

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Ivan Miller (Note 1) has proposed an almost identical reformulation. We believe this work to have been done independently of ours, and it should be so treated.

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a button four times. Subjects assigned to the uncontrollable noise group received noise that terminated independently of subjects' responding. Finally, a third group received no noise. In the second phase of the experiment all groups were tested on a hand shuttle box. In the shuttle box, noise termination was controllable for all subjects; to turn off the noise, subjects merely had to move a lever from one side of the box to the other. The results of the test phase were strikingly similar to those obtained with animals. The group receiving prior controllable noise as well as the group receiving no noise readily learned to shuttle, but the typical subject in the group receiving prior uncontrollable noise failed to escape and listened passively to the noise.

Although a number of alternative hypotheses (see Maier & Seligman, 1976, for a review) have been proposed to account for the debilitating effects of experience with uncontrollability, only the learned helplessness hypothesis (Maier & Seligman, 1976; Maier, Seligman, & Solomon, 1969; Seligman, 1975; Seligman et al., 1971) provides a unified theoretical framework integrating the animal and human data. The cornerstone of the hypothesis is that learning that outcomes are uncontrollable results in three deficits: motivational, cognitive and emotional. The hypothesis is "cognitive" in that it postulates that mere exposure to uncontrollability is not sufficient to render an organism helpless; rather, the organism must come to expect that outcomes are uncontrollable in order to exhibit helplessness. In brief, the motivational deficit consists of retarded initiation of voluntary responses and is seen as a consequence of the expectation that outcomes are uncontrollable. If the organism expects that its responses will not affect some outcome, then the likelihood of emitting such responses decreases. Second, the learned helplessness hypothesis argues that learning that an outcome is uncontrollable results in a cognitive deficit since such learning makes it difficult to later learn that responses produce that outcome. Finally, the learned helplessness hypothesis claims that depressed affect is a consequence of learning that outcomes are uncontrollable.

Historically, the learned helplessness hypothesis was formulated before helplessness experiments were performed with human subjects. In the main, early studies of human helplessness attempted to reproduce the animal findings in humans and were rather less concerned with theory building. Recently, however, investigators of human helplessness (e.g., Blaney, 1977; Golin & Terrell, 1977; Wortman & Brehm, 1975; Roth & Kilpatrick-Tabak, Note 2) have become increasingly disenchanted with the adequacy of theoretical constructs originating in animal helplessness for understanding helplessness in humans. And so have we. We now present an attributional framework that resolves several theoretical controversies about the effects of uncontrollability in humans. We do not know whether these considerations apply to infra-humans. In brief, we argue that when a person finds that he is helpless, he asks *why* he is helpless. The causal attribution he makes then determines the generality and chronicity of his helplessness deficits as well as his later self-esteem. In developing the attributional framework, we find it necessary to refine attribution theory (cf. Heider, 1958; Weiner, 1972, 1974). Finally, we discuss the implications of the reformulation for the helplessness model of depression (Seligman, 1972, 1975; Seligman, Klein, & Miller, 1976).

Personal Helplessness Versus Universal Helplessness

Inadequacy 1 of the Old Theory

Several examples highlight a conceptual problem encountered by the existing learned helplessness hypothesis when applied to human helplessness. Consider a subject in Hiroto's experiment (1974) who is assigned to the group that received uncontrollable noise. The experimenter tells the subject there is something he can do to turn off the noise. Since the noise is actually uncontrollable, the subject is unable to find a way to turn off the noise. After repeated unsuccessful attempts, the subject may come to believe the problem is unsolvable; that is, neither he nor any other subject can control noise termination. Alternatively, the subject may believe that the prob-

lem is solvable but that he lacks the ability to solve it; that is, although he can't control noise termination, other subjects could successfully control the noise. The old helplessness hypothesis does not distinguish these two states, either of which could be engendered by the procedure of presenting uncontrollable outcomes.

In a recent publication, Bandura (1977) discussed a similar distinction:

Theorizing and experimentation on learned helplessness might well consider the conceptual distinction between efficacy and outcome expectations. People can give up trying because they lack a sense of efficacy in achieving the required behavior, or they may be assured of their capabilities but give up trying because they expect their behavior to have no effect on an unresponsive environment or to be consistently punished. These two separable expectancy sources of futility have quite different antecedents and remedial implications. To alter efficacy-based futility requires development of competencies and expectations of personal effectiveness. By contrast, to change outcome-based futility necessitates changes in prevailing environmental contingencies that restore the instrumental value of the competencies that people already possess. (pp. 204-205)

A final way of illustrating this inadequacy concerns the relation between helplessness and external locus of control. Early perspectives of learned helplessness (Hiroto, 1974; Miller & Seligman, 1973; Seligman, Maier, & Geer, 1968) emphasized an apparent similarity between the helplessness concept of learning that outcomes are uncontrollable and Rotter's (1966) concept of external control. Rotter argued that people's beliefs about causality can be arrayed along the dimension of locus of control, with "internals" tending to believe outcomes are caused by their own responding and "externals" tending to believe outcomes are not caused by their own responding but by luck, chance, or fate. Support for this proposed conceptual similarity of externals and helpless individuals was provided by studies of verbalized expectancies for success in tasks of skill (Klein & Seligman, 1976; Miller & Seligman, 1975). Helpless subjects gave small expectancy changes, which suggests a belief in external control, whereas subjects not made helpless gave large expectancy changes, which suggests a belief in internal control. These findings indicated that helpless sub-

jects perceived tasks of skill as if they were tasks of chance. A puzzling finding, however, was consistently obtained in these studies. On postexperimental questionnaires, helpless and nonhelpless subjects rated skill as playing the same large role in a person's performance on the skill task. Both helpless and nonhelpless subjects said they viewed the skill task as a skill task. Thus, the relation between the concepts of external control and uncontrollability may be more complex than implied by the old hypothesis.

Taken together, these examples point to one conceptual problem concerning the notions of uncontrollability and helplessness. Recall the distinction made by the old helplessness hypothesis between controllable and uncontrollable outcomes. An outcome is said to be uncontrollable for an individual when the occurrence of the outcome is not related to his responding. That is, if the probability of an outcome is the same whether or not a given response occurs, then the outcome is independent of that response. When this is true of all voluntary responses, the outcome is said to be uncontrollable for the individual (Seligman, 1975; Seligman, Maier, & Solomon, 1971). Conversely, if the probability of the outcome when some response is made is different from the probability of the outcome when the response is not made, then the outcome is dependent on that response: The outcome is controllable. The early definition, then, makes no distinction between cases in which an individual lacks requisite controlling responses that are available to other people and cases in which the individual as well as all other individuals do not possess controlling responses. These three examples all illustrate the same inadequacy. In the next section we outline a framework that resolves this inadequacy, and we discuss the implications of this framework.

Resolution of Inadequacy 1

Suppose a child contracts leukemia and the father bends all his resources to save the child's life. Nothing he does, however, improves the child's health. Eventually he comes to believe there is nothing he can do. Nor is there anything anyone else can do since leu-

Objective noncontingency → Perception of present and past noncontingency → Attribution for present or past noncontingency → Expectation of future noncontingency → Symptoms of helplessness.

Figure 1. Flow of events leading to symptoms of helplessness.

kemia is incurable. He subsequently gives up trying to save the child's life and exhibits signs of behavioral helplessness as well as depressed affect. This example fits the specifications of the old learned helplessness hypothesis. The parent believed the course of the child's disease was independent of all of his responses as well as the responses of other people. We term this situation *universal helplessness*.

Suppose a person tries very hard in school. He studies endlessly, takes remedial courses, hires tutors. But he fails anyway. The person comes to believe he is stupid and gives up trying to pass. This is not a clear case of uncontrollability according to the old model, since the person believed there existed responses that would contingently produce passing grades although he did not possess them. Regardless of any voluntary response the person made, however, the probability of his obtaining good grades was not altered. We term this situation *personal helplessness*.

Before discussing the distinction between universal and personal helplessness, it is useful to spell out the flow of events leading to symptoms of helplessness in both examples. First, the person perceived that all of his acts were noncontingently related to the desired outcome; regardless of what the father did, the child's illness did not improve, and the student continued to do poorly no matter how hard he tried. The person then made an attribution for the perceived noncontingency between his acts and the outcome; the father came to believe leukemia was incurable and the student came to believe he was stupid. In each case, the attribution led to an expectancy of noncontingency between future acts of the individual and the outcome. Finally, the symptoms of helplessness were a consequence of the person's expectancy that his

future responses would be futile in obtaining the outcome. The usual sequence of events leading from objective noncontingency to the helplessness is diagrammed in Figure 1.

Both the old and reformulated hypotheses hold the expectation of noncontingency to be the crucial determinant of the symptoms of learned helplessness. Objective noncontingency is predicted to lead to symptoms of helplessness only if the expectation of noncontingency is present (Seligman, 1975, pp. 47-48). The old model, however, was vague in specifying the conditions under which a perception that events are noncontingent (past or present oriented) was transformed into an expectation that events will be noncontingent (future oriented). Our reformulation regards the attribution the individual makes for noncontingency between his acts and outcomes in the here and now as a determinant of his subsequent expectations for future noncontingency. These expectations, in turn, determine the generality, chronicity, and type of his helplessness symptoms. In the context of this general account of the role of attribution in the production of symptoms, the distinction between universal and personal helplessness can now be clarified.

Table 1 explicates the distinction between universal helplessness and personal helplessness and ultimately serves to define our usage of the attributional dimension of internality. We take the self-other dichotomy as the criterion of internality. When people believe that outcomes are more likely or less likely to happen to themselves than to relevant others, they attribute these outcomes to internal factors. Alternatively, persons make external attribution for outcomes that they believe are as likely to happen to themselves as to relevant others.

In the table, the x-axis represents the person's expectations about the relation between the desired outcome and the responses in his repertoire.¹ The person expects the outcome

¹ For the purpose of exposition, dichotomies rather than continua are used. The person expects that the controlling response is or is not available to him and that the controlling response is or is not available to others. These two dichotomies allow for four possible belief states. Strictly speaking, how-

Table 1
Personal Helplessness and Universal Helplessness

Other	Self	
	The person expects the outcome is contingent on a response in his repertoire.	The person expects the outcome is not contingent on any response in his repertoire.
The person expects the outcome is contingent on a response in the repertoire of a relevant other.	1	personal helplessness 3 (internal attribution)
The person expects the outcome is not contingent on a response in the repertoire of any relevant other.	2	universal helplessness 4 (external attribution)

either to be contingent on some response in his repertoire or not to be contingent on any response in his repertoire. The y-axis represents his expectations about the relation between the desired outcome and the responses in the repertoires of relevant others. The person expects the outcome to be either contingent on at least one response in at least one relevant other's repertoire or not contingent on any response in any relevant other's repertoire. Cell 4 represents the universal helplessness case and includes the leukemia example, and Cell 3 represents the personal helplessness case and includes the school failure example. Because the person does not believe he is helpless in Cells 1 and 2, these cells are not relevant here and are not discussed. It should be pointed out, however, that a person in Cell 2 would be more likely to make an internal attribution for his perceived control than would a person in Cell 1.

In Table 1, the y-axis represents the person's expectations about whether someone else, a relevant other, had the controlling response in his repertoire. The following ex-

ample makes it clear why we use a "relevant other" rather than a "random other" or "any other": It is of no solace to a floundering graduate student in mathematics that "random others" are unable to do topological transformations. Crucial to the student's self-evaluation is his belief that his peers, "relevant others," have a high probability of being able to do topological transformations. Nor is it self-esteem damaging for a grade school student to fail to solve mathematical problems that only professional mathematicians can solve, although he may have low self-esteem if his peers can solve them. Therefore, the y-axis is best viewed as representing the person's expectations about the relation between the desired outcome and the responses in the repertoires of relevant others.²

² Our formulation of "internal" and "external" attributions resembles other attributional frameworks. Heider (1958), who is generally considered the founder of attribution theory, made a basic distinction between "factors within the person" and "factors within the environment" as perceived determinants of outcomes. Similarly, in the locus of control literature, Rotter (1966) distinguished between outcomes that subjects perceive as causally related to their own responses and personal characteristics and outcomes that subjects perceive as caused by external forces such as fate. Unlike these previous formulations that ask whether a factor resides "within the skin" or "outside the skin" to determine whether it is internal or external, we define the self-other dichotomy as the criterion of

ever, the x-axis is a continuum. At the far right, the person expects there is a zero probability that the desired outcome is contingent on any response in his repertoire. Conversely, on the far left he expects there is a probability of one that the desired outcome is contingent on a response in his repertoire. Similar considerations apply to the y-axis as a continuum.

Implications

The distinction between universal and personal helplessness resolves the set of inadequacies with which we began the article. Situations in which subjects believe they cannot solve solvable problems are instances of personal helplessness according to the reformulated hypothesis. Alternatively, situations in which subjects believe that neither they nor relevant others can solve the problem are instances of universal helplessness. Similarly, Bandura's (1977) conceptual distinction between efficacy and outcome expectancies relates to the reformulation in the following way: Personal helplessness entails a low efficacy expectation coupled with a high outcome expectation (the response producing the outcome is unavailable to the person), whereas universal helplessness entails a low outcome expectation (no response produces the outcome). Finally, the reformulation regards "external locus of control" and "helplessness" as orthogonal. One can be either internally or externally helpless. Universally helpless individuals make external attributions for failures, whereas personally helpless individuals make internal attributions. The experimental finding that helpless individuals view skill

internality. Although these two formulations may appear to be at odds, analysis reveals strong similarities. For example, Heider (1958) argued that in making a causal attribution, individuals hold a condition responsible for an outcome if that condition is present when the outcome is present and absent when the outcome is absent. Likewise, Kelley (1967) suggested that the procedure individuals use in determining the cause of events is similar to an analysis of variance procedure employed by scientists. The factor that consistently covaries with an outcome is considered to be its cause.

Let us examine the leukemic child and the school failure examples from the perspective of Kelley and Heider. The responses of no person are consistently associated with improvement of the leukemic child's disease. If the father performed Kelley or Heider's causal analysis, he would conclude that his failure was due to some external factor (e.g., leukemia is incurable). Alternatively, in the school example, failing is consistently associated with the student and not associated with his peers. Here, the student would conclude that some internal factor (e.g., stupidity) was the cause of his failure. Thus, Heider and Kelley also rely on social comparison as a major determinant of internality.

tasks as skill tasks, not as chance, is no longer puzzling. The task is one of skill (relevant others can solve it), but they do not have the relevant skill. These subjects view themselves as personally rather than universally helpless.

The distinction between universal helplessness and personal helplessness also clarifies the relation of uncontrollability to failure. In the literature these two terms have often been used synonymously. Tennen (Note 3), arguing from an attributional stance, suggested that the terms are redundant and that we abandon the concept of uncontrollability for the simpler concept of failure. We believe this suggestion is misguided both from the point of view of attribution theory and from common usage of the term *failure*.

In current attribution theories (e.g., Weiner, 1972) success and failure refer to outcomes. Success refers to obtaining a desired outcome and failure to not obtaining a desired outcome. According to this framework, then, the term *failure* does not embrace all cases of uncontrollability. Thus, from a strict attributional point of view, failure and uncontrollability are not synonymous: Failure is a subset of uncontrollability involving bad outcomes. Early theoretical accounts of helplessness suggested that good things received independently of responding should lead to helplessness deficits. Recent evidence bears this out: Uncontrollable positive events produce the motivational and cognitive deficits in animals (Goodkin, 1976; Welker, 1976) and in humans (Griffiths, 1977; Eisenberger, Mauriello, Carlson, Frank, & Park, Note 4; Hirsch, Note 5; Nugent, Note 6; but see Benson & Kennelly, 1976, for contrary evidence) but probably do not produce sad affect. Similarly Cohen, Rothbart, and Phillips (1976) produced helplessness effects in the absence of perceived failure. In the future, such studies should measure perception of noncontingency as well as performance, since Alloy and Abramson (Note 7) found that noncontingency is more difficult to perceive when one is winning than when one is losing. So the notion of uncontrollability means more than just failure, and it makes predictions concerning both failure and noncontingent success.

In ordinary language, failure means more than merely the occurrence of a bad outcome. People say they have failed when they have tried unsuccessfully to reach a goal and attribute this to some internal factor. Obtaining poor grades in school is considered failure, but being caught in a flash flood is generally considered misfortune. The concepts of trying and personal helplessness are both necessary to analyze failure in the ordinary language sense. According to the reformulated model, then, failure, seen from the individual's point of view, means the subset of personal helplessness involving unsuccessful trying.

The final ramification of the distinction between universal and personal helplessness is that it deduces a fourth deficit of human helplessness—low self-esteem. A major determinant of attitudes toward the self is comparison with others (Clark & Clark, 1939; Festinger, 1954; Morse & Gergen, 1970; Rosenberg, 1965). Our analysis suggests that individuals who believe that desired outcomes are not contingent on acts in their repertoires but are contingent on acts in the repertoires of relevant others, will show lower self-esteem than individuals who believe that desired outcomes are neither contingent on acts in their repertoires nor contingent on acts in the repertoires of relevant others. That is, an unintelligent student who fails an exam his peers pass will have lower self-esteem than a student who fails an exam that all of his peers fail as well.

The dichotomy between universal and personal helplessness determines cases of helplessness (and depression, see below) with and without low self-esteem. But it is neutral with regard to the cognitive and motivational deficits in helplessness. It is important to emphasize that the cognitive and motivational deficits occur in both personal and universal helplessness. Abramson (1977) has demonstrated this empirically while showing that lowered self-esteem occurs only in personal helplessness. According to both the old and the new hypotheses, the expectation that outcomes are noncontingently related to one's own responses is a sufficient condition for motivational and cognitive deficits.

We now turn to the second set of inadequacies. The old hypothesis was vague about when helplessness would be general across situations and when specific, and when it would be chronic and when acute. We now formulate this inadequacy and develop an attributional framework that resolves it.

Generality and Chronicity of Helplessness

Inadequacy 2 of the Old Theory

A second set of examples point to the other inadequacy of the old helplessness hypothesis. Consider debriefing in a typical human helplessness study: The subject is presented with an unsolvable problem, tested on a second solvable task, and finally debriefed. The subject is told that the first problem was actually unsolvable and therefore no one could have solved it. Experimenters in human helplessness studies seem to believe that telling a subject that no one could solve the problem will cause helplessness deficits to go away. The prior discussion suggests that convincing a subject that his helplessness is universal rather than personal will remove self-esteem deficits suffered in the experiment. Neither the old nor the new hypothesis, however, predicts that such debriefing will remove the cognitive and motivational deficits. What does debriefing undo and why?

A second way of illustrating this inadequacy is the following: A number of investigators (Hanusa & Schulz, 1977; Tennen & Eller, 1977; Wortman & Brehm, 1975) have emphasized those cases of learned helplessness in which a person inappropriately generalizes the expectation of noncontingency to a new, controllable situation. It is important to point out that the old hypothesis does not require an inappropriate generalization for helplessness. Helplessness exists when a person shows motivational and cognitive deficits as a consequence of an expectation of uncontrollability. The veridicality of the belief and the range of situations over which it occurs are irrelevant to demonstrating helplessness. But the old hypothesis does not specify where and when a person who expects outcomes to be uncontrollable will show deficits. In keeping with the resolution of the first inadequacy, an

attributional framework is now presented to resolve the second inadequacy by explaining the generality and chronicity of deficits associated with helplessness.

A Resolution: The Attributional Dimensions of Stability and Generality

Helplessness deficits are sometimes highly general and sometimes quite specific. An accountant, fired from his job, may function poorly in a broad range of situations: he cannot get started on his income tax, he fails to look for a new job, he becomes impotent, he neglects his children, and he avoids social gatherings. In contrast, his helplessness may be situation specific: He does not do his income tax and fails to look for a new job, but he remains an adequate lover, father, and party-goer. When helplessness deficits occur in a broad range of situations, we call them *global*; when the deficits occur in a narrow range of situations, we call them *specific*.

The time course of helplessness (and depression, see below) also varies from individual to individual. Some helplessness deficits may last only minutes and others may last years. Helplessness is called *chronic* when it is either long-lived or recurrent and *transient* when short-lived and nonrecurrent.

The old hypothesis was vague about generality and chronicity. The helpless person had learned in a particular situation that certain responses and outcomes were independent. The deficits resulting could crop up in new situations if either the responses called for or the outcomes desired were similar to the responses and outcomes about which original learning had occurred. Helplessness was global when it depressed responses highly dissimilar to those about which original learning had occurred or when it extended to stimuli highly dissimilar to those about which original learning had occurred. No account was given about why helplessness was sometimes specific and sometimes global.

When helplessness dissipated in time, forgetting produced by interference from prior or later learning was invoked (e.g., Seligman, 1975, pp. 67-68). Forgetting of helplessness could be caused either by earlier mastery learning or by subsequent mastery learning.

Again, the explanation was largely post hoc. Helplessness that dissipated rapidly was assumed to have strong proactive or retroactive interference; that which persisted was not.

The reformulated hypothesis makes a major new set of predictions about this topic: The helpless individual first finds out that certain outcomes and responses are independent, then he makes an attribution about the cause. This attribution affects his expectations about future response-outcome relations and thereby determines, as we shall see, the chronicity, generality, and to some degree, the intensity of the deficits. Some attributions have global, others only specific, implications. Some attributions have chronic, others transient, implications. Consider an example: You submit a paper to a journal and it is scathingly rejected by a consulting editor. Consider two possible attributions you might make: "I am stupid" and "The consulting editor is stupid." The first, "I am stupid," has much more disastrous implications for your future paper-submitting than the second. If "I am stupid" is true, future papers are likely to be rejected as well. If "The editor is stupid" is true, future papers stand a better chance of being accepted as long as you do not happen on the same consulting editor. Since "I" is something I have to carry around with me, attributing the cause of helplessness internally often but not always (see below) implies a grimmer future than attributing the cause externally, since external circumstances are usually but not always in greater flux than internal factors.

Recent attribution theorists have refined the possible attribution for outcomes by suggesting that the dimension "stable-unstable" is orthogonal to "internal-external" (Weiner, 1974; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971). Stable factors are thought of as long-lived or recurrent, whereas unstable factors are short-lived or intermittent. When a bad outcome occurs, an individual can attribute it to (a) lack of ability (an internal-stable factor), (b) lack of effort (an internal-unstable factor), (c) the task's being too difficult (an external-stable factor), or (d) lack of luck (an external-unstable factor).

Table 2
Formal Characteristics of Attribution and Some Examples

Dimension	Internal		External	
	Stable	Unstable	Stable	Unstable
Global				
Falling student	Lack of intelligence (Laziness)	Exhaustion (Having a cold, which makes me stupid)	ETS gives unfair tests. (People are usually unlucky on the GRE.)	Today is Friday the 13th. (ETS gave experimental tests this time which were too hard for everyone.)
Rejected woman	I'm unattractive to men.	My conversation sometimes bores men.	Men are overly competitive with intelligent women.	Men get into rejecting moods.
Specific				
Falling student	Lack of mathematical ability (Math always bores me.)	Fed up with math problems (Having a cold, which ruins my arithmetic)	ETS gives unfair math tests. (People are usually unlucky on math tests.)	The math test was from No. 13. (Everyone's copy of the math test was blurred.)
Rejected woman	I'm unattractive to him.	My conversation bores him.	He's overly competitive with women.	He was in a rejecting mood.

Note. ETS = Educational Testing Service, the maker of graduate record examinations (GRE).

While we applaud this refinement, we believe that further refinement is necessary to specify the attributions that are made when an individual finds himself helpless. In particular, we suggest that there is a third dimension—"global-specific"—orthogonal to internality and stability, that characterizes the attributions of people. Global factors affect a wide variety of outcomes, but specific factors do not.³ A global attribution implies that helplessness will occur across situations, whereas a specific attribution implies helplessness only in the original situation. This dimension (like those of stability and internality) is a continuum, not a dichotomy; for the sake of simplicity, however, we treat it here as a dichotomy.

Consider a student taking graduate record examinations (GREs) measuring mathematical and verbal skills. He just took the math test and believes he did very poorly. Within the three dimensions, there are eight kinds of attribution he can make about the cause of his low score (Internal-External \times Stable-Unstable \times Global-Specific). These attributions have strikingly different implications for how he believes he will perform in the next hour on the verbal test (generality of the helplessness deficit across situations) and for how he believes he will do on future math tests when he retakes the GRE some months hence (chronicity of the deficit over time in the same situ-

ation). Table 2 describes the formal characteristics of the attributions and exemplifies them. Table 1 relates to Table 2 in the following way: Table 2 uses the attributional dimensions of stability and generality to further subdivide the cases of personal helplessness (Cell 3—internal attribution) and universal helplessness (Cell 4—external attribution) in Table 1.

According to the reformulated hypothesis, if the individual makes any of the four global attributions for a low math score, the deficits observed will be far-reaching: Global attributions imply to the individual that when he confronts new situations the outcome will again be independent of his responses. So, if he decides that his poor score was caused by his lack of intelligence (internal, stable, global) or his exhausted condition (internal,

³ In principle, there are a large number of dimensions on which attributions can be specified. Weiner (Note 8) suggested that the criterion for a dimension, as opposed to a mere property, of attribution be that we can sensibly ask, Does it apply to all the causes that we assign to behavior? So stable-unstable is a dimension because we can sensibly ask, Is ability a factor that persists stably over time? Is patience a factor that persists stably?, and so on. Similarly, global-specific qualifies as a dimension since we can ask sensibly, Is ability a factor that affects many situations or only few? Is patience a factor that affects many situations?, and so on.

unstable, global) or that the Educational Testing Service (ETS; the creator of GREs) gives unfair tests (external, stable, global) or that it is an unlucky day (external, unstable, global), when he confronts the verbal test in a few minutes, he will expect that here, as well, outcomes will be independent of his response, and the helplessness deficits will ensue. If the individual makes any of the four specific attributions for a low math score, helplessness deficits will not necessarily appear during the verbal test: i.e., lack of mathematical ability (internal, stable, specific) or being fed up with math problems (internal, unstable, specific) or that ETS asks unfair math questions (external, stable, specific) or being unlucky on that particular math test (external, unstable, specific).

In a parallel manner, chronicity of the deficits follows from the stability dimension. Chronic deficits (he will be helpless on the next math GRE when he retakes it at a later time) will ensue if the attribution is to stable factors: lack of intelligence, lack of mathematical ability, ETS gives unfair tests, ETS gives unfair math tests. Attribution to stable factors leads to chronic deficits because they imply to the individual that he will lack the controlling response in the future as well as now. If the attribution is to an unstable factor—exhaustion, fed up with the math problems, unlucky day, or unlucky on the math tests—he will not necessarily be helpless on the next math GRE. If he makes any of the internal attributions—lack of intelligence, lack of math ability, exhaustion, or fed up with math problems—the self-esteem deficits will occur. In contrast, none of the external attributions will produce self-esteem deficits.⁴

Because so much real-life helplessness stems from social inadequacy and rejection, Table 2 illustrates a social example. Here a woman is rejected by a man she loves. Her attribution for failure will determine whether she shows deficits in situations involving most other men (global) and whether she shows deficits in the future with this particular man or with other men (chronic). She might select any of four types of global attributions: I'm unattractive to men (internal, stable, global); my conversation sometimes bores

men (internal, unstable, global); men are overly competitive with intelligent women (external, stable, global); men get into rejecting moods (external, unstable, global). All four of these attributions will produce helplessness deficits in new situations with most other men. The four specific attributions will produce deficits only with this particular man: I'm unattractive to him (internal, stable, specific); my conversation sometimes bores him (internal, unstable, specific); he is overly competitive with intelligent women (external, stable, specific); he was in a rejecting mood (external, unstable, specific). Any of the four stable attributions will produce chronic deficits either with that man (if specific) or with most men (if global); the four unstable attributions will produce transient deficits. The four internal attributions will produce self-esteem deficits; the four external attributions will not.

Having stated what we believe are the determinants of the chronicity and generality of helplessness deficits, a word about intensity or severity is in order. Severity is logically inde-

⁴ A critical remark is in order on the adequacy of ability, effort, task difficulty, and luck as embodying, respectively, internal-stable, internal-unstable, external-stable, external-unstable attributions (Weiner et al., 1971). While we find the orthogonality of internality and stability dimensions useful and important, we do not believe that the ability-effort/task difficulty-luck distinctions map into these dimensions. Table 2 presents (in parentheses) attributions that systematically violate the mapping. An internal-stable attribution that were helplessness need not be to lack of ability; it can be to lack of effort: laziness (global), math always bores me (specific). An internal-unstable attribution need not be to lack of effort, it can be to (temporary) inabilities: I have a cold, which makes me stupid (global); I have a cold, which ruins my arithmetic ability (specific). An external-stable attribution need not be to task difficulty; it can be to lack of luck: Some people are always unlucky on tests (global); people are always unlucky on math tests (specific). An external-unstable attribution need not be to bad luck; it can be to task difficulty: ETS gave experimental tests this time that were difficult for everyone (global); everyone's copy of the math test was blurred (specific). So, ability and effort are logically orthogonal to internal-stable and internal-unstable attributions, and luck and task difficulty are orthogonal to external-stable and external-unstable attributions.

pendent of chronicity and generality; it refers to how strong a given deficit is at any one time in a particular situation. We believe that the intensity of the motivational and cognitive deficits increases with the strength or certainty of the expectation of noncontingency. We speculate that intensity of self-esteem loss and affective changes (see Implications of the Reformulated Model for the Helplessness Model of Depression below) will increase with both certainty and importance of the event the person is helpless about. We also speculate that if the attribution is global or stable, the individual will expect to be helpless in the distant future (both across areas of his life and across time) as well as in the immediate future. The future will look black. This expectation will increase the intensity of the self-esteem and affective deficits. If the attribution is internal, this may also tend to make these deficits more severe, since internal attributions are often stable and global.

Attribution and Expectancy

In general, the properties of the attribution predict in what new situations and across what span of time the expectation of helplessness will be likely to recur. An attribution to global factors predicts that the expectation will recur even when the situation changes, whereas an attribution to specific factors predicts that the expectation need not recur when the situation changes. An attribution to stable factors predicts that the expectation will recur even after a lapse of time, whereas an attribution to unstable factors predicts that the expectation need not recur after a lapse of time. Whether or not the expectation recurs across situations and with elapsed time determines whether or not the helplessness deficits recur in the new situation or with elapsed time. Notice that the attribution merely *predicts* the recurrence of the expectations but the expectation *determines* the occurrence of the helplessness deficits. New evidence may intervene between the initial selection of an attribution and the new and subsequent situation and change the expecta-

tion. So the person may find out by intervening successes that he was not as stupid as he thought, or he may gather evidence that everyone obtained low scores on the math GRE and so now ETS is under new management. In such cases, the expectation need not be present across situations and time. On the other hand, if the expectation is present, then helplessness deficits must occur (see Weiner, 1972, for a related discussion of achievement motivation).

Implications

The attributional account of the chronicity and generality of the symptoms of helplessness explains why debriefing ensures that deficits are not carried outside the laboratory. The debriefing presumably changes the attribution from a global (and potentially harmful outside the laboratory) and possibly internal (e.g., I'm stupid) one to a more specific and external one (e.g., psychologists are nasty: They give unsolvable problems to experimental subjects). Since the attribution for helplessness is to a specific factor, the expectation of uncontrollability will not recur outside the laboratory anymore than it would have without the experimental evidence.

These attributional dimensions are also relevant to explaining when inappropriate, broad generalization of the expectation of noncontingency will occur. Broad transfer of helplessness will be observed when subjects attribute their helplessness in the training phase to very global and stable factors. Alternatively, attributing helplessness to very specific and unstable factors predicts very little transfer of helplessness.

A final question concerns the determinants of what particular attribution people make for their helplessness. Attribution theorists (e.g., Heider, 1958; Kelley, 1967; Weiner, 1974) have discussed situational factors that influence the sort of attribution people make. In addition, Heider and Kelley pointed to systematic biases and errors in the formation of attributions. Later, we discuss an "attributional style" that may characterize depressed people.

Validity of the Reformulated Model

The validity of the new hypothesis must ultimately be assessed by its ability to generate novel predictions that survive attempts at experimental disconfirmation. As it is a new hypothesis, no results from such attempts are yet available. However, a minimum requirement is that this hypothesis should be consistent with the available experimental evidence. Although such consistency can lend only limited support to the hypothesis (as the available evidence has been one factor shaping the hypothesis), inconsistency might seriously embarrass the hypothesis.

Is the Reformulated Hypothesis Consistent with the Experimental Evidence on Learned Helplessness in Humans?

Three basic classes of evidence are covered: (a) deficits produced by learned helplessness, (b) attributional evidence, and (c) skill/chance evidence.

Deficits produced by learned helplessness. Nondepressed students given inescapable noise or unsolvable discrimination problems fail to escape noise (Glass, Reim, & Singer, 1971; Hiroto & Seligman, 1975; Klein & Seligman, 1976; Miller & Seligman, 1976), fail to solve anagrams (Benson & Kennelly, 1976; Gatchel & Proctor, 1976; Hiroto & Seligman, 1975; Klein et al., 1976), and fail to see patterns in anagrams (Hiroto & Seligman, 1975; Klein et al., 1976). Escapable noise, solvable discrimination problems, or no treatment does not produce these deficits. Both the old and the reformulated hypotheses explain these deficits by stating that subjects expect that outcomes and responses are independent in the test situation. This expectation produces the motivational deficit (failure to escape noise and failure to solve anagrams) and the cognitive deficit (failure to see patterns). The reformulated hypothesis adds an explanation of why the expectation for the inescapability of the noise or the unsolvability of the discrimination problems must have been global enough to transfer across situations (e.g., I'm unintelligent; problems in this laboratory are

impossible) and stable enough to survive the brief time interval between tests. The data are ambiguous about whether the global, stable attribution is internal (e.g., I'm stupid) or external (e.g., laboratory problems are impossible); self-esteem changes would have been relevant to this determination. Nondepressed students who escape noise, solve problems, or receive nothing as pretreatment do not perceive response-outcome independence and do not, of course, make any attribution about such independence.

For a control procedure, subjects have been told to listen to noise (which is inescapable) but not to try to do anything about it (Hiroto & Seligman, 1975); similarly, subjects have been given a panic button that "will escape noise if pressed" but have been successfully discouraged from pressing ("I'd rather you didn't, but it's up to you"; (Glass & Singer, 1972). These subjects do not become helpless. Both the old and reformulated hypotheses hold that these subjects do not perceive noncontingency (in this latter case, they perceive potential response-outcome contingency; in the first case, they have no relevant perception) and so do not form the relevant expectations and attributions.

A number of studies on human helplessness have obtained findings that are difficult to explain with the old helplessness hypothesis. Examination of these studies suggests that investigators may have tapped into the attributional dimensions of generality and stability. For example, Roth and Kubal (1975) tested helplessness across very different situations: Subjects signed up for two separate experiments that happened to be on the same day in the same building. They failed on the task in Experiment 1 (pretraining) and then wandered off to Experiment 2 (the test task). When subjects were told in Experiment 1 that they had failed a test that was a "really good predictor of grades in college" (important), they showed deficits on the cognitive problem of Experiment 2. When told that Experiment 1 was merely "an experiment in learning" (unimportant), they did better on Experiment 2. In the case of "good predictor of grades," subjects probably made a more global, internal, and possibly more stable at-

tribution (e.g., I'm stupid enough to do badly on this, therefore on college exams as well). The expectation therefore recurred in the new situation, producing deficits. In the unimportant condition, subjects probably made a more specific and less stable attribution, so the expectation of failure was not present in Experiment 2. (See Cole and Coyne, 1977, for another way of inducing a specific, rather than a global, attribution for failure.)

Similarly, Douglas and Anisman (1975) found that failure on simple tasks produced later cognitive deficits but that failure on complex tasks did not. It seems reasonable that failure on simple tasks should produce a more global and internal attribution (e.g., I'm stupid) whereas failure on the complex tasks could be attributed to external and more specific factors (e.g., these problems are too difficult).

An important advantage of the reformulation is that it better explains the effects of therapy and immunization than does the old hypothesis. The key here is the attributional dimension of generality. Helplessness can be reversed and prevented by experience with success. Klein and Seligman (1976) gave non-depressed people inescapable noise and then did "therapy," using 4 or 12 cognitive problems, which the subjects solved. (Therapy was also performed on depressed people given no noise.) Therapy worked: The subjects (both depressed and nondepressed) escaped noise and showed normal expectancy changes after success and failure. Following inescapable noise the subjects presumably made an attribution to a relatively global factor (e.g., I'm incompetent, or laboratory tasks are unsolvable), which was revised to a more specific one after success on the next task (e.g., I'm incompetent in only some laboratory situations, or, only some laboratory tasks are difficult). The new test task, therefore, did not evoke the expectation of uncontrollability. Teasdale (1978) found that real success experiences and recalling similar past successes were equally effective in shifting attribution for initial failure from internal to external factors. Only real success, however, reversed helplessness performance deficits. This suggests success does not have its effect by shift-

ing attribution along the internal-external dimension. Although the relevant data were not collected, it is likely that real, but not recalled, success modifies attribution along the global-specific dimension. Immunization (Thornton & Powell, 1974; Dyck & Breen, Note 9) is explained similarly: Initial success experience should make the attribution for helplessness less global and therefore less likely to recur in the new test situation.

A number of human helplessness studies have actually shown facilitation in subjects exposed to uncontrollable events (Hanusa & Schulz, 1977; Roth & Kubal, 1975; Tennen & Eller, 1977; Wortman et al., 1976). While such facilitation is not well understood (see Wortman & Brehm, 1975; Roth & Kilpatrick-Tabak, Note 2, for hypotheses), it seems reasonable that compensatory attempts to reassert control might follow helplessness experiences, once the person leaves the situations in which he believes himself helpless (see Solomon & Corbit, 1973, for a relevant rebound theory). Such compensatory rebound might be expected to dissipate in time and be less strong in situations very far removed from the original helplessness training. When the "facilitation" effect of helplessness is brought under replicable, experimental control, the compensatory rebound hypothesis can be tested. People may also show facilitation of performance in uncontrollable situations when they cannot find a controlling response but have not yet concluded that they are helpless.

The reformulated hypothesis accounts for the basic helplessness results better than does the old hypothesis. The explanations given by the reformulated hypothesis are necessarily post hoc, however. Relevant measures of the generality, stability, and internality of attribution were not made. Helplessness studies can, in principle, test the hypothesis either by measuring the attributions and correlating them with the deficits that occur or by inducing the attributions and predicting deficits. We now turn to the few studies of helplessness that have induced or measured attribution.

Attributional evidence. Dweck and her associates (Dweck, 1975; Dweck & Reppucci, 1973; Dweck, Davidson, Nelson, & Enna, Note 10; Dweck, Goetz, & Strauss, Note 11)

have demonstrated the differential effects of attribution for failure to lack of ability versus lack of effort. When fourth-grade girls fail, they attribute their failure to lack of ability (consonant with their teachers' natural classroom criticisms of girls) and perform badly on a subsequent cognitive test. Lack of ability is a global attribution (as well as internal and stable) and implies failure expectation for the new task. Fourth-grade boys, on the other hand, attribute failure to lack of effort or bad conduct (also consonant with the teachers' natural classroom criticisms of boys) and do well on the subsequent test. Lack of effort is unstable and probably more specific (but also internal). Boys, having failed and attributed failure to lack of effort, put out more effort on the test task and do adequately. Similarly, when students are told to attribute failure on math problems to not trying hard enough, they also do better than if they attribute it to lack of ability (Dweck, 1975).

Effort is not only "unstable," but it is readily controllable by the subject himself, unlike being bored, for example, which is also unstable, specific, and internal, or unlike lack of ability. It should be noted that the dimension of controllability is logically orthogonal to the Internal \times Global \times Stable dimensions (although it is empirically more frequent in the internal and unstable attribution), and as such it is a candidate for a $2 \times 2 \times 2 \times 2$ table of attributions. While we do not detail such an analysis here, we note that the phenomena of self-blame, self-criticism, and guilt (a subclass of the self-esteem deficits) in helplessness (and depression) follow from attribution of failure to factors that are controllable. Lack of effort as the cause of failure probably produces more self-blame than does boredom, although both are internal and unstable attributions. Similarly, a failure caused by not speaking Spanish attributed to lack of ability to speak Spanish, which might have been corrected by taking a Berlitz course, probably causes more self-blame than a less correctable lack of ability, such as ineptitude for foreign languages, even though both are internal and stable.

According to the reformulation, performance deficits should occur in cases of both

universal and personal helplessness. In both cases people expect that outcomes are independent of their responses. In addition, attribution of helplessness to specific or unstable factors should be less likely to lead to performance deficits than attribution to stable or global factors. To date, four studies have manipulated attribution for helplessness in adults. In line with the reformulation, Klein et al. (1976) found that relative to groups receiving solvable problems or no problems at all, nondepressed students did poorly on an anagrams task following experience with unsolvable discrimination problems regardless of whether they attributed their helplessness to internal factors (personal helplessness) or external factors (universal helplessness).

Tennen and Eller (1977) attempted to manipulate attribution by giving subjects unsolvable discrimination problems that were labeled either progressively "easier" or progressively "harder." The authors reasoned that failure on easy problems should produce attribution to lack of ability (internal, stable, and more global) whereas failure on hard problems should allow attribution to task difficulty (external, unstable, and more specific). Subjects then went to what they believed was a second, unrelated experiment (see Roth & Kubal, 1975) and tried to solve anagrams. In line with the reformulation, attribution to inability (easy problems) produced deficits. Attribution to task difficulty (hard problems) resulted in facilitation of anagram solving. The most likely explanation for lack of performance deficits in the task-difficulty group is that their attributions for helplessness were too specific to produce an expectation of noncontingency in the test task.

Finally, two studies (Hanusa & Schulz, 1977; Wortman et al., 1976) found that relative to a group exposed to contingent events, neither a group instructed to believe they were personally helpless nor a group instructed to believe they were universally helpless on a training task showed subsequent performance deficits on a test task. While the results appear contrary to the reformulation, they are difficult to interpret. The problem is that in both studies, the typical helplessness group (a group exposed to noncontingent

events in the training task but given no explicit attribution) did not show performance deficits on the test task. Thus, the test task may not have been sensitive to helplessness deficits. (For a discussion of the relative sensitivity of tasks to helplessness in animals, see Maier and Seligman, 1976.) It is interesting that Wortman et al. (1976) found that personally helpless subjects showed more emotional distress than universally helpless subjects.

Overall, then, the few helplessness studies directly assessing and manipulating attribution provide some support for the reformulation. Because of the methodological problems in some of these studies, future research that manipulates attribution is necessary. Care must be taken to ensure that one attributional dimension is not confounded with another. Past studies, for example, have confounded externality with specificity and internality with generality.

Helpless subjects show dampened expectancy changes in skill tasks. In skill tasks, expectancy for future success increases less following success and/or decreases less following failure for helpless subjects than for subjects not made helpless (Klein & Seligman, 1976; Miller & Seligman, 1976; Miller, Seligman, & Kurlander, 1975; see also Miller & Seligman, 1973, and Abramson, Garber, Edwards & Seligman, 1978, for parallel evidence in depression). The old hypothesis interpreted these results as a general tendency of helpless subjects to perceive responding and outcomes on skill tasks as independent, and it was assumed that this index measured the central helplessness deficit directly. In other words, it had been suggested that such subjects perceive skill tasks as if they were chance tasks. The rationale for this interpretation was derived from the work of Rotter and his colleagues (James, 1957; James & Rotter, 1958; Phares, 1957; Rotter, Liverant, & Crowne, 1961). These investigators argued that reinforcements on previous trials have a greater effect on expectancies for future success when the subject perceives reinforcement as skill determined than when he perceives it as chance determined. According to this logic, subjects will show large expectancy

changes when they believe outcomes are chance determined.

Recent developments in attribution theory suggest that expectancy changes are not a direct index of people's expectations about response-outcome contingencies. Weiner and his colleagues (1971) argued that the attributional dimension of stability rather than locus of control is the primary determinant of expectancy changes. According to Weiner (Weiner, 1974; Weiner, Heckhausen, Meyer, & Cook, 1972) people give small expectancy changes when they attribute outcomes to unstable factors and large expectancy changes when they attribute outcomes to stable factors. The logic is that past outcomes are good predictors of future outcomes only when they are caused by stable factors.

In the absence of knowledge about individual attributions, the reformulated helplessness hypothesis cannot make clear-cut predictions about expectancy changes and helplessness, since belief in response-outcome dependence or independence is orthogonal to stable-unstable. For example, suppose a person makes an internal attribution to lack of ability for his helplessness, i.e., he believes in response-outcome independence for himself. When confronted with the skill task, he may show very large expectancy changes after failure since he believes he lacks the stable factor of ability for the task. Alternatively, when confronted with the 50% success rate typically used in helplessness studies, he may maintain his belief that he lacks the stable factor of ability but conclude that ability is not necessary for success on the task. After all, he succeeded sometimes in spite of his perceived lack of ability. Under such conditions, the person will believe outcomes are a matter of chance (unstable factor) for himself but not for others. Accordingly, he will give small expectancy changes. Moreover, a nonhelpless person (who perceives response-outcome dependency) may believe unstable factors, such as effort, cause his outcomes and show little expectancy change; alternatively, if he believes a stable factor is responsible for response-outcome dependence, he will show large shifts.

Rizley (1978) similarly argued that expectancy changes on chance and skill tasks do

not directly test the learned helplessness model of depression. We agree. As argued in the previous paragraph, small expectancy changes need not imply belief in independence between responses and outcomes, and large expectancy changes need not imply belief in dependence between responses and outcomes. Nor does belief in response–outcome independence imply small expectancy changes, or belief in dependence imply large changes. The fact that depressives often show smaller expectancy changes than nondepressed people (Abramson et al., 1978; Klein & Seligman, 1976; Miller & Seligman, 1973, 1976; Miller et al., 1975) is intriguing but provides only limited support for the learned helplessness model. In order for expectancy changes to be used as a way of inferring perception of response–outcome independence, the particular attribution and its stability must also be known. None of the studies to date that measured expectancy shifts also measured the relevant attributions, so these studies do not tell us unambiguously that helpless (or depressed) people perceive response–outcome independence. They support the model only in as far as these two groups show the same pattern of shifts, but the pattern itself cannot be predicted in the absence of knowledge about the accompanying attribution.

To conclude this section, examination of expectancy changes on chance and skill tasks is not a direct way of testing helplessness, since such changes are sensitive to the attributional dimension of stability and not to expectations about response–outcome contingencies. Recent failures to obtain small expectancy changes in depressed people (McNitt & Thornton, 1978; Willis & Blaney, 1978) are disturbing empirically, but less so theoretically, since both depressed and helpless subjects show the same pattern, albeit a different pattern from the one usually found.

Implications of the Reformulated Model for the Helplessness Model of Depression

This reformulation of human helplessness has direct implications for the helplessness model of depression. The cornerstone of previous statements of the learned helplessness

model of depression is that learning that outcomes are uncontrollable results in the motivational, cognitive, and emotional components of depression (Seligman, 1975; Seligman et al., 1976). The motivational deficit consists of retarded initiation of voluntary responses, and it is reflected in passivity, intellectual slowness, and social impairment in naturally occurring depression. According to the old model, deficits in voluntary responding follow directly from expectations of response–outcome independence. The cognitive deficit consists of difficulty in learning that responses produce outcomes and is also seen as a consequence of expecting response–outcome independence. In the clinic, “negative cognitive set” is displayed in depressives’ beliefs that their actions are doomed to failure. Finally, the model asserts that depressed affect is a consequence of learning that outcomes are uncontrollable. It is important to emphasize that the model regards expectation of response–outcome independence as a sufficient, not a necessary, condition for depression. Thus, physiological states, postpartum conditions, hormonal states, loss of interest in reinforcers, chemical depletions, and so on may produce depression in the absence of the expectation of uncontrollability. According to the model, then, there exists a subset of depression—helplessness depressions—that is caused by expectation of response–outcome independence and displays the symptoms of passivity, negative cognitive set, and depressed affect.

We believe that the original formulation of the learned helplessness model of depression is inadequate on four different grounds: (a) Expectation of uncontrollability per se is not sufficient for depressed *affect* since there are many outcomes in life that are uncontrollable but do not sadden us. Rather, only those uncontrollable outcomes in which the estimated probability of the occurrence of a desired outcome is low or the estimated probability of the occurrence of an aversive outcome is high are sufficient for depressed affect. (b) Lowered self-esteem, as a symptom of the syndrome of depression, is not explained. (c) The tendency of depressed people to make internal attributions for failure is not explained. (d) Variations in generality, chronicity, and

intensity of depression are not explained. All but the first of these shortcomings are directly remedied by the reformulation of human helplessness in an attributional framework.

Inadequacy 1: Expectation of Uncontrollability Is Not Sufficient for Depressed Affect

We view depression, as a syndrome, to be made up of four classes of deficits: (a) motivational, (b) cognitive, (c) self-esteem, and (d) affective (but see Blaney, 1977, for a review that contends that only affective changes are relevant to depression). Whereas the first three deficits are the result of uncontrollability, we believe the affective changes result from the expectation that bad outcomes will occur, not from their expected uncontrollability.

Everyday observation suggests that an expectation that good events will occur with a high frequency but independently of one's responses is not a sufficient condition for depressed affect (see Seligman, 1975 (p. 98), versus Maier & Seligman, 1976 (p. 17), for previous inconsistent accounts). People do not become sad when they receive \$1,000 each month from a trust fund, even though the money comes regardless of what they do. In this case, people may learn they have no control over the money's arrival, become passive with respect to trying to stop the money from arriving (motivational deficit), have trouble relearning should the money actually become response contingent (cognitive deficit), but they do not show dysphoria. Thus, only those cases in which the expectation of response–outcome independence is about the loss of a highly desired outcome⁵ or about the occurrence of a highly aversive outcome are sufficient for the emotional component of depression. It follows, then, that depressed affect may occur in cases of either universal or personal helplessness, since either can involve expectations of uncontrollable, important outcomes.

At least three factors determine the intensity of the emotional component of depression. Intensity of affect (and self-esteem deficits) increases with desirability of the unobtainable outcome or with the aversiveness of

the unavoidable outcome, and with the strength or certainty of the expectation of uncontrollability. In addition, intensity of depressed affect may depend on whether the person views his helplessness as universal or personal. Weiner (1974) suggested that failure attributed to internal factors, such as lack of ability, produces greater negative affect than failure attributed to external factors, such as task difficulty. The intensity of cognitive and motivational components of depression, however, does not depend on whether helplessness is universal or personal, or, we speculate, on the importance of the event.

Perhaps the expectation that one is receiving positive events noncontingently contributes indirectly to vulnerability to depressed affect. Suppose a person has repeatedly learned that positive events arrive independently of his actions. If the perception or expectation of response–outcome independence in future situations involving loss is facilitated by such a set, then heightened vulnerability to depression will occur.

Inadequacy 2: Lowered Self-esteem as a Symptom of Depression

A number of theoretical perspectives (Beck, 1967, 1976; Bibring, 1953; Freud, 1917/

⁵ One problem remains. It is a "highly desired" outcome for us that the editor of this journal give us each one million dollars, and we believe this to have a very low probability and to be uncontrollable. Yet, we do not have depressed affect upon realizing this. Some notion, like Klinger's (1975) "current concerns," is needed to supplement our account. We feel depressed about the nonoccurrence of highly desired outcomes that we are helpless to obtain only when they are "on our mind," "in the realm of possibility," "troubling us now," and so on. Incidentally, the motivational and cognitive deficits do not need current concerns, only the affective deficit. We take this inadequacy to be general not only to the theory stated here but to much of the entire psychology of motivation, which focuses on behavior, and we do not attempt to remedy it here. We find Klinger's concept heuristic but in need of somewhat better definition. We, therefore, use the notion of "loss of a highly desired outcome" rather than "nonoccurrence." Loss implies that it will probably be a current concern. Since this is only part of a sufficiency condition, we do not deny that nonoccurrence can also produce depressed affect.

1957) regard low self-esteem as a hallmark symptom of depression. Freud has written, "The melancholic displays something else besides which is lacking in mourning—an extraordinary diminution in his self-regard, an impoverishment of his ego on a grand scale" (p. 246). A major shortcoming of the old model of depression is that it does not explain the depressive's low opinion of himself. Our analysis of universal and personal helplessness suggests that depressed individuals who believe their helplessness is personal show lower self-esteem than individuals who believe their helplessness is universal. Suppose two individuals are depressed because they expect that regardless of how hard they try they will remain unemployed. The depression of the person who believes that his own incompetence is causing his failure to find work will feel low self-regard and worthlessness. The person who believes that nationwide economic crisis is causing his failure to find work will not think less of himself. Both depressions, however, will show passivity, negative cognitive set, and sadness, the other three depressive deficits, since both individuals expect that the probability of the desired outcome is very low and that it is not contingent on any responses in their repertoire.

It is interesting that psychoanalytic writers have argued that there are at least two types of depression, which differ clinically as well as theoretically (Bibring, 1953). Although both types of depression share motivational, cognitive, and affective characteristics, only the second involves low self-regard. Further paralleling our account of two types of depression is recent empirical work (Blatt, D'Afflitti, & Quinlan, 1976) suggesting that depression can be characterized in terms of two dimensions: dependency and feelings of deprivation, and low self-esteem and excessively high standards and morality.

Inadequacy 3: Depressives Believe They Cause Their Own Failures

Recently, Blaney (1977) and Rizley (1978) have construed the finding that depressives attribute their failures to internal factors, such as lack of ability, as disconfirming the learned

helplessness model of depression. Similarly, aware that depressives often blame themselves for bad outcomes, Abramson and Sackeim (1977) asked how individuals can possibly blame themselves for outcomes about which they believe they can do nothing. Although the reformulation does not articulate the relation between blame or guilt and helplessness, it clearly removes any contradiction between being a cause and being helpless. Depressed individuals who believe they are personally helpless make internal attributions for failure, and depressed individuals who believe they are universally helpless make external attributions for failure. A personally helpless individual believes that the cause of the failure is internal (e.g., I'm stupid) but that he is helpless (No response I could make would help me pass the exam).

What are the naturally occurring attributions of depressives? Do they tend to attribute failure to internal, global, and stable factors, and success to external, specific, and unstable factors?⁶

Hammen and Krantz (1976) looked at cognitive distortion in depressed and nondepressed women. When responding to a story containing "being alone on a Friday night," depressed women selected more depressed-distorted cognitions ("upsets me and makes me start to imagine endless days and nights by myself"), and nondepressed women selected more nondepressed-nondistorted cognitions ("doesn't bother me because one Friday night alone isn't that important; probably everyone has spent nights alone"). Depressed people seem to make more global and stable attributions for negative events. When depressed women were exposed to failure on an interpersonal judgment task, they lowered their self-rating more than did nondepressed women.

⁶ The literature on the relation between internal locus of control and depression might be expected to yield direct information about internal attribution in depression. It is, however, too conflicting at this stage to be very useful. Externality, as measured by the Rotter scale, correlates weakly (.25-.30) with depression (Abramowitz, 1969; Miller & Seligman, 1973), but the external items are also rated more dysphoric and the correlation may be an artifact (Lamont, 1972).

This indicates that the depressed women are systematically generating more internal as well as global and stable attributions for failure.⁷

Rizley (1978) caused depressed and nondepressed students to either succeed or fail on a cognitive task and then asked them to make attributions about the cause. Depressed students attributed failures to incompetence (internal, global stable), whereas nondepressed students attributed their failures to task difficulty (external, specific, stable). Similarly, depressed students attributed success to the ease of the task (external, specific, stable), whereas nondepressed students attributed their success to ability (internal, global, stable). Although inconsistent with the old model, Rizley's results are highly consistent with the reformulation.

Klein et al. (1976) assessed the attribution depressed and nondepressed college students made for failure on discrimination problems. Whereas depressed students tended to attribute failure to internal factors, nondepressed students tended to attribute failure to external factors. These findings parallel those of Rizley on attribution in achievement settings.

Garber and Hollon (Note 12) asked depressed and nondepressed subjects to make predictions concerning their own future success as well as the success of another person in the skill/chance situation. The depressed subjects showed small expectancy changes in relation to their own skilled actions; however, when they predicted the results of the skilled actions of others, they showed large expectancy changes, like those of nondepressives rating themselves. These results suggest that depressives believe they lack the ability for the skill task but believe others possess the ability, the internal attribution of personal helplessness.

Taken together, the studies examining depressives' attributions for success and failure suggest that depressives often make internal, global, and stable attributions for failure and may make external, specific, and perhaps less stable attributions for their success. Future research that manipulates and measures attributions and attributional styles in depres-

sion and helplessness is necessary from the standpoint of our reformulated hypothesis.

Inadequacy 4: Generality and Chronicity of Depression

The time course of depression varies greatly from individual to individual. Some depressions last for hours and others last for years. "Normal" mourning lasts for days or weeks; many severe depressions last for months or years. Similarly, depressive deficits are sometimes highly general across situations and sometimes quite specific. The reformulated helplessness hypothesis suggests that the chronicity and generality of deficits in helplessness depressions follow from the stability and globality of the attribution a depressed person makes for his helplessness. The same logic we used to explain the chronicity and generality of helplessness deficits above applies here.

The reformulation also sheds light on the continuity of miniature helplessness depressions created in the laboratory and of real-life depression. The attributions subjects make for helplessness in the laboratory are presumably less global and less stable than attributions made by depressed people for failure outside the laboratory. Thus, the laboratory-induced depressions are less chronic and less global and are capable of being reversed by debriefing, but, we hypothesize, they are not different in kind from naturally occurring helplessness depressions. They differ only

⁷ Alloy and Abramson (Note 7) also examined distortion, not in attributions but in perception of contingency between depressed and nondepressed students. The subjects were exposed to different relations between button pushing and the onset of a green light and were asked to judge the contingency between the outcome and the response. Depressed students judged both contingency and noncontingency accurately. In contrast, nondepressed students distorted: When the light was noncontingently related to responding but occurred with a high frequency, they believed they had control. So there was a net difference in perception of contingency by depressed and nondepressed subjects, but the distortion occurred in the nondepressed, who picked up noncontingency less readily (see also Jenkins & Ward, 1965).

quantitatively, not qualitatively, that is, they are mere "analogs" to real helplessness depressions.

Do depressive deficits occur in situations that have nothing to do with the expectation of noncontingency? After failing a math GRE, the student goes home, burns his dinner, cries, has depressive dreams, and feels suicidal. If this is so, there are two ways our reformulation might explain this: (a) He is still in the presence of the relevant cues and expectations, for even at home the expectation that he will not get into graduate school is on his mind, and (b) the expectation, present earlier but absent now, has set off endogenous processes (e.g., loss of interest in the world, catecholamine changes) that must run their course. Remember that expectations of helplessness are held to be sufficient, not necessary, conditions of depression.

Finally, does the attributional reformulation of helplessness make depression look too "rational"? The chronicity, generality, and intensity of depression follow inexorably, "rationally" from the attribution made and the importance of the outcome. But there is room elsewhere for the irrationality implicit in depression as a form of psychopathology. The particular attribution that depressed people choose for failure is probably irrationally distorted toward global, stable, and internal factors and, for success, possibly toward specific, unstable, and external factors. It is also possible that the distortion resides not in attributional styles but in readiness to perceive helplessness, as Alloy and Abramson (Note 7) have shown: Depressed people perceive noncontingency more readily than do nondepressed people.

In summary, here is an explicit statement of the reformulated model of depression:

1. Depression consists of four classes of deficits: motivational, cognitive, self-esteem, and affective.

2. When highly desired outcomes are believed improbable or highly aversive outcomes are believed probable, and the individual expects that no response in his repertoire will change their likelihood, (helplessness) depression results.

3. The generality of the depressive deficits will depend on the globality of the attribution for helplessness, the chronicity of the depression deficits will depend on the stability of the attribution for helplessness, and whether self-esteem is lowered will depend on the internality of the attribution for helplessness.

4. The intensity of the deficits depends on the strength, or certainty, of the expectation of uncontrollability and, in the case of the affective and self-esteem deficits, on the importance of the outcome.

We suggest that the attributional framework proposed to resolve the problems of human helplessness experiments also resolves some salient inadequacies of the helplessness model of depression.

Vulnerability, Therapy, and Prevention

Individual differences probably exist in attributional style. Those people who typically tend to attribute failure to global, stable, and internal factors should be most prone to general and chronic helplessness depressions with low self-esteem. By the reformulated hypothesis, such a style predisposes depression. Beck (1967) argued similarly that the premorbid depressive is an individual who makes logical errors in interpreting reality. For example, the depression-prone individual overgeneralizes; a student regards his poor performance in a single class on one particular day as final proof of his stupidity. We believe that our framework provides a systematic framework for approaching such overgeneralization: It is an attribution to a global, stable, and internal factor. Our model predicts that attributional style will produce depression proneness, perhaps the depressive personality. In light of the finding that women are from 2 to 10 times more likely than men to have depression (Radloff, Note 13), it may be important that boys and girls have been found to differ in attributional styles, with girls attributing helplessness to lack of ability (global, stable) and boys to lack of effort (specific, unstable; Dweck, 1976).

The therapeutic implications of the reformulated hypothesis can now be schematized. Depression is most far-reaching when (a) the

Table 3
Treatment, Strategies, and Tactics Implied by the Reformulated Hypothesis

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- A. Change the estimated probability of the relevant event's occurrence: Reduce estimated likelihood for aversive outcomes and increase estimated likelihood for desired outcomes.
- a. Environmental manipulation by social agencies to remove aversive outcomes or provide desired outcomes, for example, rehousing, job placement, financial assistance, provision of nursery care for children.
 - b. Provision of better medical care to relieve pain, correct handicaps, for example, prescription of analgesics, provision of artificial limbs and other prostheses.
- B. Make the highly preferred outcomes less preferred.
- a. Reduce the aversiveness of highly aversive outcomes.
 1. Provide more realistic goals and norms, for example, failing to be top of your class is not the end of the world—you can still be a competent teacher and lead a satisfying life.
 2. Attentional training and/or reinterpretation to modify the significance of outcomes perceived as aversive, for example, you are not the most unattractive person in the world. "Consider the counter-evidence" (Beck, 1976; Ellis, 1962).
 3. Assist acceptance and resignation.
 - b. Reduce the desirability of highly desired outcomes.
 1. Assist the attainment of alternative available desired outcomes, for example, encourage the disappointed lover to find another boy or girl friend.
 2. Assist reevaluation of unattainable goals.
 3. Assist renunciation and relinquishment of unattainable goals.
- C. Change the expectation from uncontrollability to controllability.
- a. When responses are not yet within the person's repertoire but can be, train the necessary skills, for example, social skills, child management skills, skills of resolving marital differences, problem-solving skills, and depression-management skills.
 - b. When responses are within the person's repertoire, modify the distorted expectation that the responses will fail.
 1. Prompt performance of relevant, successful responses, for example, graded task assignment (Burgess, 1968).
 2. Generalized changes in response–outcome expectation resulting from successful performance of other responses, for example, prompt general increase in activity; teach more appropriate goal-setting and self-reinforcement; help to find employment.
 3. Change attributions for failure from inadequate ability to inadequate effort (Dweck, 1975), causing more successful responding.
 4. Imaginal and miniaturized rehearsal of successful response–outcome sequences: Assertive training, decision-making training, and role playing.
- D. Change unrealistic attributions for failure toward external, unstable, specific; change unrealistic attributions for success toward internal, stable, global.
- a. For failure
 1. External: for example, "The system minimized the opportunities of women. It is not that you are incompetent."
 2. Unstable: for example, "The system is changing. Opportunities that you can snatch are opening at a great rate."
 3. Specific: for example, "Marketing jobs are still relatively closed to women, but publishing jobs are not" (correct overgeneralization).
 - b. For success
 1. Internal: for example, "He loves you because you are nurturant not because he is insecure."
 2. Stable: for example, "Your nurturance is an enduring trait."
 3. Global: for example, "Your nurturance pervades much of what you do and is appreciated by everyone around you."
-

estimated probability of a positive outcome is low or the estimated probability of an aversive outcome is high, (b) the outcome is highly positive or aversive, (c) the outcome is expected to be uncontrollable, (d) the attribution for this uncontrollability is to a global, stable, internal factor. Each of these four aspects corresponds to four therapeutic strategies.

1. Change the estimated probability of the outcome. Change the environment by reducing the likelihood of aversive outcomes and increasing the likelihood of desired outcomes.

2. Make the highly preferred outcomes less preferred by reducing the aversiveness of unrelievable outcomes or the desirability of unobtainable outcomes.

3. Change the expectation from uncontrollability to controllability when the outcomes are attainable. When the responses are not yet in the individual's repertoire but can be, train the appropriate skills. When the responses are already in the individual's repertoire but cannot be made because of distorted expectation of response–outcome independence, modify the distorted expectation. When the outcomes are unattainable, Strategy 3 does not apply.

4. Change unrealistic attributions for failure toward external, unstable, specific factors, and change unrealistic attributions for success toward internal, stable, global factors. The model predicts that depression will be most far-reaching and produce the most symptoms when a failure is attributed to stable, global, and internal factors, since the patient now expects that many future outcomes will be noncontingently related to his responses. Getting the patient to make an external, unstable, and specific attribution for failure should reduce the depression in cases in which the original attribution is unrealistic. The logic, of course, is that an external attribution for failure raises self-esteem, an unstable one cuts the deficits short, and a specific one makes the deficits less general.

Table 3 schematizes these four treatment strategies.

Although not specifically designed to test the therapeutic implications of the reformulated model of depression, two studies have

examined the effectiveness of therapies that appear to modify the depressive's cognitive style. One study found that forcing a depressive to modify his cognitive style was more effective in alleviating depressive symptoms than was antidepressant medication (Rush, Beck, Kovacs, & Hollon, 1977). A second study found cognitive modification more effective than behavior therapy, no treatment, or an attention–placebo therapy in reducing depressive symptomatology (Shaw, 1977). Future research that directly tests the therapeutic implications of the reformulation is necessary.

The reformulation has parallel preventive implications. Populations at high risk for depression—people who tend to make stable, global, and internal attributions for failure—may be identifiable before onset of depression. Preventive strategies that force the person to criticize and perhaps change his attributional style might be instituted. Other factors that produce vulnerability are situations in which highly aversive outcomes are highly probable and highly desirable outcomes unlikely; here environmental change to less pernicious circumstances would probably be necessary for more optimistic expectations. A third general factor producing vulnerability to depression is a tendency to exaggerate the aversiveness or desirability of outcomes. Reducing individuals' "catastrophizing" about uncontrollable outcomes might reduce the intensity of future depressions. Finally, a set to expect outcomes to be uncontrollable—learned helplessness—makes individuals more prone to depression. A life history that biases individuals to expect that they will be able to control the sources of suffering and nurturance in their life should immunize against depression.

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