

Cognitions, affect, and behavior following uncontrollable outcomes: A response to current human helplessness research

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Abstract

A series of articles in the *Journal of Personality* challenge several central assumptions of the reformulated learned helplessness model: that perceptions of uncontrollability, awareness of noncontingency between responses and outcomes, and attributions made about the outcome are necessary to explain learned helplessness effects. The present article addresses the validity of this challenge through a consideration of the methodology employed in these and other traditional studies of human helplessness conducted in the laboratory. We maintain that although performance deficits can be demonstrated reliably following exposure to uncontrollable outcomes, a number of factors other than expectations of future uncontrollability (i.e., learned helplessness) may be responsible for these effects. In addition, demands of the experimental situation may prevent subjects from admitting their true underlying thoughts and feelings regarding the manipulations employed. Finally, the current use of artificial laboratory paradigms may unnecessarily restrict the study of a complex psychological phenomenon such as learned helplessness. We suggest that future researchers employ paradigms that more closely parallel real world situations to which they hope to generalize, or utilize naturally occurring uncontrollable life events to study the problem. In addition, we argue that future research should broaden its focus beyond attributions to explore other mediators of human helplessness.

During the past 15 years, the theory of learned helplessness has captured the attention of researchers from a number of divisions within psychology. The original model (Seligman, 1975) was developed by experimental psychologists from studies using infrahuman species (e.g., Overmier & Seligman, 1967; Seligman, Maier, & Geer,

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1968). Therefore, it is not surprising that performance decrements following exposure to uncontrollable outcomes were explained as the result of organisms having learned that their responses and outcomes were independent. However, as personality and social psychologists began to test this theory on humans, it became clear that a simple learning explanation could not account for the diverse pattern of results obtained. Although performance decrements were demonstrated when the paradigms followed the animal model quite closely (see Miller & Norman, 1979; Roth, 1980; and Wortman & Brehm, 1975, for reviews), deviations from this procedure yielded inconsistent results. For example, when subjects were tested for helplessness effects in settings dissimilar from the helplessness training phase, impairments were not found (see Cole & Coyne, 1977; Miller & Norman, 1979; Roth & Bootzin, 1974; and Wortman & Brehm, 1975, for a discussion of this issue). In addition, several investigators reported "facilitation" effects, where subjects who underwent helplessness training performed better than control subjects on the test task (see, e.g., Hanusa & Schulz, 1977; Roth & Bootzin, 1974; Roth & Kubal, 1975; Tennen & Eller, 1977; Thornton & Jacobs, 1972; Wortman, Panciera, Shusterman, & Hibscher, 1976). It is for these reasons that several investigators recently reformulated the model to incorporate cognitive or attributional mediators of learned helplessness effects (see Abramson, Seligman, & Teasdale, 1978; Miller & Norman, 1979; Roth, 1980).

This issue of the *Journal of Personality* includes a series of provocative studies that challenge the current cognitive direction of learned helplessness research. In fact, one conclusion that might be drawn from the foregoing papers in this issue (Oakes & Curtis, 1982; Tennen, Drum, Gillen, & Stanton, 1982 a; Tennen, Gillen, & Drum, 1982 b) is that attributional and cognitive mediators of the learned helplessness phenomenon are less important than originally hypothesized, and need not be investigated further. On the basis of the results of these experiments, one might even suggest (as Oakes & Curtis, 1982, explicitly do) that learned helplessness is simply a learning effect among humans as well as infrahuman species, obviating the need to invoke cognitive mediators to explain the resulting performance decrements. In the discussion to follow, we address the validity of this suggestion. In so doing, rather than directing our comments solely to the aforementioned studies, we will use these experiments as examples of the current state of human helplessness research. Our critique will be made at three levels: (1) Although performance deficits have been demonstrated following exposure to uncontrollable outcomes, factors other than learned helplessness may

be responsible for the effects. (2) Demands of the experimental situation may prevent subjects from admitting their true, underlying thoughts and feelings regarding the experimental manipulations. (3) The current use of artificial laboratory paradigms may be too restrictive to explore a potentially complex psychological phenomenon. Following our critique, we make a number of suggestions for future research in this area. We suggest how researchers might study learned helplessness in laboratory paradigms that more closely parallel the real world, or might utilize naturally occurring events to study the problem. We maintain that a careful analysis of cognitions, motivations, and affect, in addition to observed behavior, is necessary when studying learned helplessness, and we review some innovative techniques to assess these processes. Finally, we argue that future research should broaden its focus beyond attributions in an attempt to explore mediators of human helplessness. Each of these topics is considered in more detail below.

*An Overview of the Tennen, Drum, Gillen, and Stanton;
Tennen, Gillen, and Drum; and Oakes and Curtis Studies*

Simply stated, the reformulated helplessness model developed by Seligman and colleagues (Abramson et al., 1978; Abramson, Garber, & Seligman, 1980) proposes that when an individual is repeatedly exposed to uncontrollable outcomes, he or she comes to expect that future outcomes are uncontrollable as well. Such an expectation leads to subsequent motivational, cognitive, and emotional deficits, resulting in inhibition of future learning or decrements in performance. It is the attributional interpretation of *why* an individual fails to control outcomes that is proposed to determine the generality and chronicity of future deficits. The model postulates quite clearly that mere exposure to uncontrollable outcomes will not produce deficits; organisms must come to expect that future outcomes are also uncontrollable in order for helplessness to result. In a series of studies in this issue, Tennen et al. (1982 a, 1982 b) and Oakes and Curtis (1982) question the assumptions that perceptions of uncontrollability, awareness of noncontingency between responses and outcomes, and attributions made about the uncontrollability of outcomes, are necessary to explain learned helplessness effects.

Specifically, Oakes and Curtis (1982) raise the question of whether it is the actual noncontingency between an individual's behavior and his/her outcomes, or the perception or awareness of the noncontingency, that produces subsequent performance decrements in learned helplessness experiments. These authors argue that in previous studies, experimenters have confounded actual noncontingency with the

feelings and emotions produced by respondents' recognition of the lack of contingency between their behavior and their outcomes. To disentangle the effects of actual and perceived noncontingency, Oakes and Curtis went to considerable effort to prepare a helplessness training task in which subjects could receive noncontingent reinforcement without recognizing this fact. For this reason, this study deviates from traditional learned helplessness laboratory experiments in a significant new way. Subjects were asked to shoot a light gun at a target in a brightly lit room. For one group of contingent subjects, a tone sounded when the light beam hit the bullseye. A second group of contingent subjects received a tone when they *missed* the bullseye. Two groups of noncontingent subjects were yoked to the contingent groups, receiving a feedback pattern of tones (indicating either hits or misses) that was not contingent on their own performance. A final, control group of respondents did not participate in this helplessness training task.

Results indicated that noncontingent subjects performed more poorly on an anagram task administered at the conclusion of the gun-shooting task than did contingent or control subjects. Awareness of noncontingency of the feedback was assessed by a questionnaire which asked subjects the extent to which they felt the target shooting task was "doable," and the degree to which they attributed their success or failure on the task to experimenter control (vs. their own ability, effort, task difficulty, or chance). Feelings of helplessness were measured by asking respondents whether they had felt they could be successful during the target shooting task. Negative mood states of depression, anxiety, and hostility were also assessed. No significant differences emerged between experimental groups on any of these measures.

In an attempt to replicate and clarify the results of this experiment, Oakes and Curtis conducted a second study which modified the procedure of Experiment 1. In Experiment 2, subjects received either contingent or noncontingent positive feedback, i.e., a tone sounded to indicate a hit of the bullseye. Half the subjects in each group were then specifically told, after performing the gun-shooting task, that their feedback had not been contingent on their performance. This was followed by an anagram task. Feelings of helplessness, awareness of noncontingency, and affect were assessed as in Experiment 1. Results indicated that performance decrements were found only among those subjects whose feedback actually had been noncontingent, rather than among those subjects who were told this had been the case. Again, there were no significant group differences on the measures that assessed awareness of noncontingency, attri-

butions, or affect. On the basis of these two experiments, the authors concluded that a behavioral deficit could be produced without awareness of noncontingency between one's responses and one's outcomes. In addition, they maintained that such a deficit was not mediated by feelings of helplessness, nor associated with feelings of emotional distress.

Tennen et al. (1982 b) conducted two experiments to investigate whether learned helplessness could be induced following exposure to noncontingent positive events, and whether causal attributions made for the noncontingency mediate helpless behavior. Subjects in Experiment 1 received uncontrollable noise bursts (alone, or in the presence of another person), were able to escape from the aversive noise through their own efforts (i.e., contingent escape), or were rescued from the noise by a "powerful" other, independent of their own behavior (i.e., noncontingent escape). The duration of the noise for uncontrollable and noncontingent escape subjects was yoked to the performance of subjects in the escapable condition. Following the helplessness training phase, subjects were asked to work on 20 solvable anagrams. Attributions for success or failure on the noise task to skill, luck, task difficulty, or experimenter control were assessed, as were affect and subjects' perceptions of control over the noise termination.

Results indicated that subjects who were unable to escape from the aversive noise, as well as those subjects who were rescued from the noise independent of their own behavior, exhibited impaired performance on the anagram task. These subjects also reported having had little or no control over the termination of the noise. However, subjects who received uncontrollable noise in the presence of an observer (who, in some cases, could have rescued the subjects from the noise) showed facilitated performance on the anagram task. Such facilitation effects were evident despite the fact that these subjects also reported having had little control over noise termination in the helplessness training phase. In general, subjects who received noncontingent noise reported significantly more anger and frustration following exposure to the noise, but there were no differences in self-reported sadness. In addition, few significant attributional differences emerged between groups.

Experiment 2 sought to replicate the results of Experiment 1 and to explore attributional mediators of the effect in more detail. The presence of another person during helplessness training was eliminated in this study. Instead, noncontingent escape was created by yoking the duration of the aversive noise to subjects in the escapable condition (who, in later trials, escaped the noise so quickly that its

termination was clearly noncontingent to yoked subjects' responses). Perceived control over the noise termination was assessed, as were perceived locus, stability, and globality of attributions for performance on the noise task. As in Experiment 1, noncontingent escape and inescapable subjects evidenced performance decrements on an anagram task when compared to subjects who were able to escape the noise. These subjects also indicated perceiving no control over the noise task. However, in contrast to predictions of the reformulated learned helplessness model, none of the attribution ratings contributed significantly to anagram performance in a multiple regression analysis.

Two central assumptions of the learned helplessness model, that perceived uncontrollability over an outcome and causal attributions made for such uncontrollability mediate helplessness effects, are examined in the package of studies conducted by Tennen et al. (1982a). These authors note that in most learned helplessness experiments, subjects have received feedback indicating a complete failure to control the task. Because there is little variance in uncontrollability, such experiments do not enable the investigator to explore fully the relation between perceptions of control and performance. To test whether subjective perceptions of lack of control actually mediate helplessness effects, the authors designed an experiment that would permit such an analysis. In two separate studies, the investigators examined the relation between behavioral deficits and perceptions of control by manipulating the number of noncontingent positive outcomes subjects received after being subjected to noise bursts. Respondents were given a box with a button, and were told to try to control the aversive noise. They were informed that a green light would flash when the noise had been successfully controlled, and a red light would appear when it had not. In each of two experiments, subjects in all experimental conditions received 50 noise bursts of equal duration, but received varying numbers of noncontingent green lights, independent of their behavior. After completing this helplessness training task, subjects were asked to work on an anagram task to test for helplessness effects, and to complete a questionnaire which assessed perceptions of control, response-outcome contingency, and attributions for success on the noise task.

In the first experiment, subjects who had received 25 green lights during the helplessness training task attempted more complex solutions and performed better on the anagram task than those who had received no green lights, 5 green lights, 45 green lights, or 50 green lights. This finding occurred despite the fact that subjects who

received 25 green lights rated themselves as having less control over the experimental task than subjects in the 45 or 50 green light conditions. In fact, among subjects in the inescapable noise conditions, higher ratings of perceived control were associated with poorer performance on the anagram task.

The authors speculated that these results might be mediated by differential expenditure of effort on the anagram task. They hypothesized that respondents who received 0 or 5 green lights during helplessness training may have experienced little reinforcement for their attempts to stop the noise. If so, they may have been unmotivated to apply themselves to the subsequent anagram task. Subjects who received a large number of green lights may have concluded that it was possible to exercise control in this experiment with very little effort, and may not have expended much effort at the anagram task for this reason. In order to test this hypothesis, Tennen et al. (1982 a) conducted a second experiment in which subjects received 5, 25, or 45 noncontingent green lights while attempting to stop noise bursts by pressing a button. Perceptions of motivation and effort were assessed by asking subjects such questions as to what extent they thought their performance on the noise task was due to effort, how interested they were in the task, or how hard they tried at it. Again, the authors found that subjects who received 25 noncontingent positive reinforcements did better on a subsequent anagram task than respondents in the other noncontingent conditions, while still perceiving less control over the task than subjects in the 45 green light condition. However, no differences in self-reported interest or effort ratings emerged between groups. In addition, neither perceived control nor the attributions made for the noncontingency predicted anagram performance in a multiple regression analysis.

We applaud Tennen et al.'s (1982 a, 1982 b) and Oakes and Curtis' (1982) attempts to explore the mediating processes underlying performance decrements following helplessness training. We are also impressed with these investigators' ability to replicate their findings in separate experiments. The fact that Tennen et al.'s (1982 b) findings were replicable when the independent variable of noncontingent escape was operationally defined in two different ways (i.e., escape due to a powerful other vs. no powerful other) is also noteworthy. However, we believe that it would be unfortunate for readers to conclude, on the basis of these studies, that attributions and other cognitive mediators of human helplessness are unimportant. In our opinion, such a judgment does not follow from a closer in-

spection of the methodology employed by these investigators. Below, we consider possible alternate explanations for the data obtained.

Can we assume from Performance Decrements that Learned Helplessness has been Demonstrated?

As noted earlier, a central tenet of the learned helplessness model, both in its original and reformulated versions, is that exposure to uncontrollable outcomes will only result in learned helplessness when an organism comes to expect that future outcomes are uncontrollable as well (Abramson et al., 1978, 1980; Seligman, 1975; Wortman & Brehm, 1975). Therefore, mere exposure to lack of control or perceptions of response-outcome independence during a training task need not result in subsequent learned helplessness. Unfortunately, although both Oakes and Curtis (1982) and Tennen et al. (1982 a, 1982 b) assessed perceptions of control over the helplessness training task, none of the six experiments in this volume assessed expectancies for control over the *test* task (i.e., anagrams).¹ Since information regarding expectations of control are unavailable, it is not clear that impaired performance on the anagrams in any of the six studies is due to subjects' expectancies of response-outcome independence. In fact, during the past several years, a number of other explanations besides learned helplessness have been advanced to account for performance decrements following exposure to uncontrollable outcomes. In general, such alternate explanations are most plausible when subjects are faced with an inability to solve a problem. Such "experimenter-induced failure" (cf. Buchwald, Coyne, & Cole, 1978; Coyne, Metalsky, & Lavelle, 1980) is the most common form of training task employed in most laboratory inductions of learned helplessness. Subjects are told that an aversive outcome is controllable, yet they fail to control it, or that a task is soluble, yet they fail to solve it (see Coyne et al., 1980, for further discussion of this point). The procedures employed by Tennen et al. (1982 a, 1982 b) can also be viewed in this light, since subjects were unable to solve a problem they were told was possible (i.e., escape from the noise). Because the design of Oakes and Curtis (1982) deviates from traditional helplessness induction paradigms by separating noncontingent reinforcement from awareness, some of these alternative explanations of the

1. It must be noted that perceptions of contingency and control over anagram performance were assessed in Experiment 2 of Tennen et al. (1982 a). However, these ratings were filled out following the completion of the anagram task, and it is unclear how performance may have affected subjects' assessments of their prior expectations.

mediating processes underlying performance decrements are less applicable to their results. Nonetheless, a variety of possible mediators that may account for impaired performance following "helplessness training" are considered below.

Egotism. Some creative research by Snyder and his associates (Frankl & Snyder, 1978; Snyder, Smoller, Strenta, & Frankl, 1981) has suggested that performance decrements may occur in traditional helplessness studies because subjects try halfheartedly on the test task. By expending little effort, subjects can presumably protect their self-esteem were failure to occur again. In support of this hypothesis, Snyder has found that such manipulations as describing the test task as highly difficult, or playing distracting music during the test task, can improve performance and eliminate the deficit. Apparently, Tennen et al. (1982 a) asked subjects to rate how hard they tried to solve the anagram task and failed to find differences between experimental groups. Yet, as these authors themselves note, there is some question as to whether subjects would admit not having tried on a task to the same experimenter who administered it (see the discussion below on the demands of the experimental situation).

Negativity. A number of researchers have found that subjects report heightened feelings of hostility, anger, and/or frustration following exposure to uncontrollable aversive stimuli (see, e.g., Cole & Coyne, 1977; Coyne et al., 1980; Miller & Seligman, 1975; Roth & Kubal, 1975). In addition, Tennen et al. (1982 b) found that subjects exposed to noncontingent escape reported significantly more anger and frustration after noise exposure (although there were no differences in self-reported sadness). As Oakes and Curtis (1982) point out, performance decrements in learned helplessness experiments may result from the frustration and hostility elicited by helplessness training. Thus, performance decrements on a test task may be the result of subjects behaving hostilely or negativistically (cf. Wortman & Brehm, 1975) through poor performance and lack of effort (see Snyder et al., 1981, for further discussion of this point). (Also see Boyd, 1982, and Levis, 1976, for an alternate interpretation of deficits due to frustration: Behavioral persistence of a competing response that directly interferes with performance on a test task.)

Heightened anxiety. Coyne et al. (1980) have advanced yet another possible mediator of the helplessness effect: heightened anxiety. In fact, although anxiety was not assessed in either of the Tennen et al. (1982 a, 1982 b) studies, a number of researchers have found heightened anxiety among subjects exposed to uncontrollable aversive outcomes (see, e.g., Miller & Seligman, 1975; Roth & Kubal, 1975). Viewing helplessness training as experimenter-induced fail-

ure, Coyne et al. (1980) point out that such diverse theoretical frameworks as drive theory, achievement theory, and the test anxiety field have attempted to account for the impaired performance that typically follows a failure induction. In most of these theoretical formulations, anxiety is regarded as the factor that underlies performance decrements. As Coyne et al. (1980) indicate, there are several different explanations that have been offered. For example, high arousal may interfere with a subject's ability to process information relevant to successful task performance. Alternatively, high anxiety may lead the individual to make competing responses that may interfere with one another. Finally, high anxiety may lead to self-preoccupation that interferes with task-focused cognitions and behavior (cf. Cole & Coyne, 1977; and see Kuhl, 1981, for a related argument).

Based on this reasoning, Coyne et al. (1980) encouraged one group of subjects to use an attentional redeployment exercise following helplessness training (i.e., imagining a positive and relaxing scene, with a rationale that it would quiet physiological activity). Since such a manipulation would not be expected to alter expectations of control, the learned helplessness model provides no basis for predicting differences between conditions. Nonetheless, results indicated that such an exercise alleviated the performance decrements typically found. The fact that relaxation and focusing attention on something other than task-irrelevant negative self-preoccupied thoughts was effective in eliminating impairments indeed suggests that cognitive-attentional deficits associated with anxiety may be an important mediator of performance in traditional learned helplessness experiments.

Cognitive withdrawal. As Carver (1979) notes, the behavioral repertoire offered to subjects following the failure experience so typical of learned helplessness experiments is very limited. In fact, one likely response to such experimenter-induced lack of control is withdrawal. Carver maintains, however, that since physical withdrawal is often unavailable to subjects following helplessness training, cognitive withdrawal, i.e., "a mental dissociation from task attempts" (p. 1276), may result. In fact, he argues that typical helplessness effects "may stem from a thwarted impulse to remove oneself from the behavioral context" (p. 1276). Such an explanation for performance decrements is applicable particularly to such helplessness studies as Tennen et al. (1982 b), in which any attempts at withdrawal are specifically prevented. In that experiment, subjects were instructed explicitly not to take off the earphones, dismantle the apparatus, or touch the switch on the side of the box to turn off the

noise. The hypothesis of cognitive withdrawal may also explain why investigators are often unable to demonstrate performance decrements in helplessness experiments when subjects complete the test task in a separate setting from that of the training task (cf. Cole & Coyne, 1977).

Inferences drawn from the training task. On the basis of their experience in the training task, subjects in traditional helplessness experiments may draw certain inferences about the type of tasks that are offered in the study. These inferences and the resulting cognitive set developed are undoubtedly carried to the test task, and are likely to influence subject performance (cf. Levine, Rotkin, Jankovic, & Pitchford, 1977). For example, on the basis of helplessness training tasks where they encounter insoluble problems or noncontingent reinforcement, subjects may decide that tasks in this experiment are difficult and require complicated solutions. Thus, Tennen et al. (1982 a) report that subjects who received 25 trials of noncontingent positive reinforcement tried more complex solutions on the button pressing task than subjects who received either fewer or more trials. Similarly, in a study employing insoluble concept identification problems, Peterson (1978) reported that rather than learning that such problems were insoluble, subjects offered complex solutions to the task at hand. For example, "one subject reported solutions based on complicated interactions between card color and the speed with which the experimenter placed the card in front of him" (p. 57). Based on such inferences, subjects may enter the test task with certain expectations regarding solutions to problems. If the test task requires simple answers, subjects' tendency to seek complex solutions will result in performance decrements (Levine et al., 1977; Peterson, 1978). In contrast, if the test task requires complicated solutions, one might expect facilitated performance. In fact, subjects in the 25 light condition of the Tennen et al. (1982 a) study did perform better on the anagram task than those subjects who received fewer or more noncontingent lights, presumably because they drew the inference that tasks in this experiment were demanding and required concentration.

Based on performance in the training task, subjects may also infer that the tasks employed in the experiment are easy and require little effort. Such may be the case when subjects get constant noncontingent positive reinforcement (e.g., the 45 or 50 green light conditions of Tennen et al., 1982 a). When faced with test tasks that require concentration and complicated solutions, however, decrements can be expected.

The above analysis suggests that the type of tasks employed in the

training and test phases of laboratory experiments of this type may be an important determinant of whether performance decrements or facilitation effects occur. Such an analysis also suggests that impaired performance following "helplessness training" may be an artifact of the experiment as opposed to evidence of expectation of response-outcome independence.

Detection of deception. In order to expose subjects to lack of control, laboratory investigations of learned helplessness typically employ deception. Thus, subjects may be led to believe that an aversive outcome is controllable or escapable (cf. Tennen et al., 1982 a, 1982 b) when actually it is not, or that rewards or punishments are contingent upon performance (cf. Oakes & Curtis, 1982) when actually they are not. Successful manipulation of control beliefs necessitates that such deception is not recognized by subjects. However, some manipulations are more transparent (and hence less deceiving) than others. For example, subjects who received 0, 5, 45, or 50 lights indicating they had escaped aversive stimulation in Tennen et al. (1982 a) would be most likely to suspect that the experimenter had misled them because reinforcement was so constant and predictable. However, the 25 light condition undoubtedly appeared most realistic and was least likely to engender feelings of suspicion among subjects.

There is often little chance of subjects' detection of the deception surrounding the tasks being revealed on traditional experimental questionnaires assessing control-related beliefs. Oakes and Curtis (1982), in fact, claim that subjects were unable to detect noncontingent reinforcement based on such questionnaire data. However, closer inspection of their questionnaire items suggests that judgments of awareness of noncontingency were made on questions that were not particularly sensitive to subject suspicion. To review, awareness of noncontingency was assessed through measures which asked subjects to what extent they believed the task of hitting the bullseye could be done, and the degree to which they attributed success or failure at hitting the bullseye to experimenter control. However, subjects may have felt that it was possible to hit the bullseye with the light beam (hence, "doable") but still not believe the onset of the tone was related to hitting the bullseye. Similarly, they may not have felt their success or failure at *hitting* the bullseye was under the control of the experimenter, although the onset of the tone may have been.

If subjects can detect the deception, it is unlikely that performance decrements in traditional learned helplessness experiments are due to expectations of response-outcome independence. Rather, detection of deception may alter test task performance in several

ways. Decrements may be the result of several factors: (1) low motivation (e.g., feelings that "this experiment is rigged, so why bother trying on the anagrams"), (2) negativity discussed earlier (e.g., feeling "the experimenter has deceived me, and therefore I will get back at him/her by not trying and performing badly," (cf. Snyder et al., 1981), or (3) subjects trying to figure out what the experimenter is looking for and behaving accordingly. In the Oakes and Curtis (1982) study specifically, subjects who could detect that they were receiving noncontingent reinforcement may have been less absorbed by the task, may have found it less enjoyable, or may have concentrated less hard. Therefore, these subjects may have performed better on the subsequent anagram task because they had more positive feelings about themselves, the experimenter, or the experiment.

Do we have any specific evidence that subjects are able to detect the deception in traditional helplessness experiments? A few recent studies that have offered subjects the opportunity to admit such feelings directly have yielded interesting results. For example, Cole and Coyne (1977) provided subjects with open-ended debriefing questions regarding their experience on an inescapable training task (which had been specifically introduced as solvable). Subjects were asked what they perceived the experiment to be about, and what they felt the experimenter hoped and expected to find. While none of the subjects in the inescapable noise condition reported feeling helpless or ineffectual, approximately one-half reported feeling that the noise task had been designed by the experimenter to be insoluble, and therefore potentially frustrating or stressful. In a study specifically designed to investigate subjects' suspicions, Gisriel, Davidson, and Baum (Note 1) exposed subjects to escapable or inescapable noise bursts followed by an anagram task. After they had worked on approximately ten anagrams, subjects were asked to indicate the relative importance of several factors in determining how well they were doing on the task. The experimenter requested that subjects rank order eight possible factors, including ability, effort, task difficulty, luck, "what the task is telling me about myself," and "what I think the experimenter expects me to do." Subjects were also asked to indicate what they were thinking during the anagram task. In the inescapable noise condition, the factor rated as the most important determinant of performance was "what I think the experimenter expects me to do." In addition, inescapable subjects' most commonly reported thoughts during the test phase were "I'm not supposed to be able to solve this," or "The last task was impossible, therefore it is obvious that these anagrams are not solvable, so why should I try?"

These experiments are two of the few human helplessness studies that have assessed subjects' perceptions that the experimental tasks are impossible to solve, or that the experimenter expects a particular type of behavior. They provide compelling evidence that such feelings are quite prevalent among subjects, and in fact are judged by them to be an important determinant of poor task performance.

Additional factors. Thus far, we have considered a number of possible alternate explanations for performance decrements following exposure to uncontrollable outcomes. As in other similar helplessness studies, it is quite plausible that subjects' behaviors in the experiments in this volume may have been mediated by a variety of cognitive, motivational, or affective factors that were not adequately assessed. It is also unclear whether learned helplessness was demonstrated at all, given the absence of data indicating expectancy of future response-outcome independence. We therefore believe that it would be unfortunate for readers to conclude, on the basis of these experiments, that cognitive and attributional mediators of human helplessness are unimportant.

In addition, questions that were designed by Tennen et al. (1982 a, 1982 b) and Oakes and Curtis (1982) to assess cognitive and emotional mediators of helplessness may not have revealed differences for another reason. Beliefs about the experimental situation may be held by subjects as tentative hypotheses, not firmly drawn conclusions (see also Cole & Coyne, 1977). As Tennen et al. (1982 b) perceptively point out, the subject who is unable to exert control in the helplessness training session may in fact entertain several different explanations for this predicament (e.g., "I am incompetent at this task;" "this is extremely difficult;" or "the experimenter has misled me"). Subjects' uncertainty about the precise cause of this problem may be heightened by the fact that for most of them, the experience is a novel and ambiguous one. There may even be certain circumstances in which a subject's behavior in the test task is designed to test or refute hypotheses developed during helplessness training. By performing well on the test task, for example, subjects can refute the hypothesis that they are incompetent or lack ability (cf. Wortman & Dintzer, 1978).

If subjects' behaviors are influenced by tentatively held hypotheses that are not well articulated by the respondents, such hypotheses may be difficult to capture on traditional, close-ended, objectively scored questions. Self-statement checklists (Kendall & Hollon, 1981), designed by the researcher to include a large number of diverse and potentially mediating cognitions and affects, might be the best ap-

proach when using a closed format. Alternatively, there are several open-ended formats which have much promise: the instruction to think aloud while performing a mainly cognitive task (Diener & Dweck, 1978; Ericsson & Simon, 1980; Meichenbaum, 1977); imagery assessment during or after a perceptual-motor task (Tower & Singer, 1981); video reconstruction after a videotaped social interaction (Klos, Loomis, & Ruhrold, Note 2; Meichenbaum & Butler, 1979); cognition and affect sampling in social isolation after training (Klos & Singer, 1981); projective techniques tailored specifically to the situation in which helplessness is to be measured; or word associations used to identify the subject's semantic schemata (Landau & Goldfried, 1981). Use of such creative methodologies may more accurately reveal subjects' thoughts and privately held hypotheses in helplessness experiments, and can suggest how cognitive, affective, and motivational mediators may influence subsequent performance (cf. Diener & Dweck, 1978).

The Problem of Demands of the Experimental Situation

In addition to the need to employ creative assessment techniques, it must be recognized that subtle demands of the experimental situation may hamper attempts to explore a number of the aforementioned possible mediators of performance decrements. Assuming that subjects are in fact aware of the factors that influence their performance on the testing and training tasks (but see Wilson, Hull, & Johnson, 1981), they may be reluctant to openly acknowledge such factors unless explicitly offered the opportunity to do so (cf. Gisriel et al., Note 1). Subjects may be unwilling to admit to the person who just told them tasks were controllable that they think the experiment is rigged. In the Oakes and Curtis (1982) study specifically, demands of the experimental situation may have influenced subjects to underreport detection of noncontingency to someone who had previously informed them that success was contingent upon their performance. Similarly, subjects may be unwilling to offer such explanations as not having tried hard, thinking the task uninteresting or boring, or feeling hostility toward the experimenter.

If a researcher is attempting to explore motivational, cognitive, and affective mediators of performance decrements, demands of the situation may be so strong that honest responses may only be revealed to a third party. In all experiments in this volume, the testing task, as well as assessments of affect and cognitions, were administered by the same experimenter who, just a few minutes previously, had given a "helplessness" induction. Aronson and Carlsmith (1968) pointed out years ago the value of separating the manipulation of

the independent variable from the measurement of the dependent variable to avoid artifactual results. Under the guise of another experiment, a second experimenter can collect performance data as well as information regarding the mediating processes involved. In fact, perhaps the most important and intriguing feature of the learned helplessness theory is its contention that helplessness beliefs formed in one setting generalize to subsequent settings where control is, in fact, possible. Therefore, performance decrements become even more interesting in cases where the test task is separated from the training task (Roth, 1980; Wortman & Brehm, 1975). As noted earlier, however, severe tests of the generalization issue (e.g., Cole & Coyne, 1977) have failed to yield significant results. Such data have recently led researchers to refine the reformulated model even further, specifying boundary conditions of the generalization effect (see Pasahow, West, & Boroto, 1982). Nonetheless, helplessness researchers can perhaps best test predictions from the learned helplessness model by taking care to keep demands of the experimental situation to a minimum.

The Artificial Nature of the Experimental Manipulations

In the past decade, there have been hundreds of laboratory experiments on the learned helplessness phenomenon (see Dweck & Wortman, 1982; Miller & Norman, 1979; and Roth, 1980 for reviews). As noted earlier, this work has been stimulated by the innovative and exciting work with infrahuman species that was conducted in the late 1960's by Seligman and his associates (e.g., Overmier & Seligman, 1967; Seligman et al., 1968). These studies showed that exposure to uncontrollable aversive stimulation subsequently interferes with the acquisition of escape-avoidance learning. In a number of impressive experiments, these investigators demonstrated that dogs who had previously received uncontrollable electric shocks were very slow to learn to avoid or escape subsequent shock, and appeared to give up and accept as much shock as the experimenter chose to give.

Considering the earlier work on which the learned helplessness model was based, it is perhaps not surprising that in studying human helplessness, investigators have attempted to design experiments which closely parallel the animal studies. As in the animal studies, subjects typically are exposed to a training phase, in which they receive either escapable or inescapable aversive stimulation. Following training, subjects participate in a testing phase in which performance decrements are assessed. Impaired performance on cognitive

tasks such as anagrams is regarded as evidence for learned helplessness.

The widespread interest in the learned helplessness model stems, in part, from the application of this theory to account for depression in humans (see Abramson et al., 1978, 1980; Seligman, 1975). Such an application necessitates generalizing the results obtained in laboratory inductions of helplessness to real world behavior. However, we feel that the lack of mundane realism (Aronson & Carlsmith, 1968; Carlsmith, Ellsworth, & Aronson, 1976), or comparability to real world situations of these laboratory investigations limits their contribution to our understanding of human helplessness. In our opinion, such traditional laboratory helplessness studies place subjects in an artificial situation that may make little phenomenological sense. For example, let us review the experience of individuals who participated in some of the experiments described in this issue. Subjects in the Tennen et al. (1982 a) studies were given a box with a button in the center and two lights—a green one and a red one, located above the button. The box contained a noise generator, which delivered tones of 86 decibels to subjects through earphones. Each subject was told to try to turn off the noise by pressing the button. They were told that a green light would flash when they were successful, and that a red light would indicate unsuccessful performance. No matter how hard subjects tried to solve the task, or how many times they pressed the buttons, all subjects heard 50 noise trials during the course of the experiment. As described earlier, subjects in the studies by Oakes and Curtis (1982) were given a small light gun and asked to shoot it at a target. The room was brightly lit, so as to make it difficult for subjects to tell how they were doing. Some subjects received a tone from the experimenter when they hit the target, while others received a tone when they missed the target, and the remaining subjects received noncontingent tones at varying times. Both of these studies were carefully executed, and included new and innovative experimental conditions designed to shed light on the mediators of helplessness. Nonetheless, we feel that the peculiar combination of noises, problem-solving, lights, and tones presented to these subjects is unlike any of the uncontrollable outcomes that one might encounter outside the laboratory. They do not seem to parallel the relatively trivial uncontrollable events that might occur each day, such as getting into the wrong line at the supermarket, losing three quarters in a videogame when the attendant is off duty, or rushing to the airport to learn that one's flight has been delayed or cancelled. Nor are they comparable to more serious uncontroll-

able life events that occur outside the laboratory, such as losing a loved one, contracting cancer, or being criminally assaulted.

One justification for exposing subjects to laboratory paradigms that are unlike anything they would encounter outside the laboratory is that this might help to clarify earlier research in which the same paradigm was used. For example, by disentangling the effects of noncontingency from awareness of such noncontingency and the negative emotions (e.g., anger) that typically accompany such awareness, Oakes and Curtis (1982) try to identify which of these factors is responsible for the performance decrements shown in earlier studies. However, we feel that in an attempt to refine the phenomenon under study and establish precise experimental control, investigators may ultimately study problems that do not relate to real world concerns. For example, outside the laboratory, noncontingency is rarely, if ever, unaccompanied by awareness and the resulting emotions such awareness engenders. Therefore, attempting to separate factors that are almost always confounded in real life may be pointless. We strongly agree with Cialdini (1980), who has argued that although the rigor and precision of laboratory methodology may provide us with information regarding the validity of psychological theories, the resulting "find" may be trivial in size and impact. As he writes, "our finely tuned traps allow us to capture phenomena without regard for their importance in the course of naturally occurring human behavior" (p. 23). (See also Helmreich, 1975; Smith, 1972.)

As we have detailed elsewhere (Bulman & Wortman, 1977; Wortman, Abbey, Holland, Silver & Janoff-Bulman, 1980), there are a number of additional reasons why traditional laboratory paradigms are not well suited to study reactions to uncontrollable outcomes. The major problem is that researchers are forced to examine reactions to relatively minor outcomes that occur for relatively short durations. As noted above, it is unclear whether reactions to such outcomes as electric shock or noise bursts would generalize to more serious uncontrollable outcomes. In addition, laboratory exposure to uncontrollable outcomes generally occurs for a rather short period of time owing to the ethical implications of longer exposure. The inability to study subjects' responses over time and across a variety of settings also limits the opportunity to test predictions from theoretical models that predict inappropriate generalization (cf. Seligman, 1975) and changes over time (cf. Wortman & Brehm, 1975).

We also feel that there are several fundamental differences between uncontrollable stressors encountered in the laboratory and those

encountered in the real world. Ethics guidelines for research with human subjects require that subjects be forewarned regarding the stress that they will be asked to endure, and freely consent to participate (Bulman & Wortman, 1977; Wortman et al., 1980). For example, prior to helplessness training, subjects in the Tennen et al. (1982 b) study were "exposed to several brief samples of the tone and told that they could terminate their participation if they wished." In contrast, a critical feature of uncontrollable life events is that they are not freely chosen and often occur without warning. The psychological processes that affect reactions to a chosen outcome may be quite different from those that occur when the outcome has been involuntary.

Uncontrollable outcomes employed in traditional laboratory inductions of learned helplessness are also qualitatively different from the kinds of events that are likely to result in helplessness in the real world. Human helplessness is rarely created by encounters with a repeated string of identical stressors. Instead, people typically experience a variety of uncontrollable outcomes that differ both in content and magnitude. Since the theory of learned helplessness does not imply that the uncontrollable outcomes received need be identical or even similar, it remains an empirical question whether performance decrements would be demonstrated if all the outcomes were different. Thus, the applicability of the results from a restricted exposure to loss of control in the laboratory to people's everyday experiences is still unknown.

Similarly, if researchers are interested in how uncontrollable outcomes influence task performance, laboratory inductions of learned helplessness are not comparable to the kinds of conditions individuals frequently encounter in performance settings. Typically, people do not perform in isolation, but rather do so in a wider social context. Others are frequently sources of distraction, interruption, supervision, surveillance, and criticism. The fact that the presence of others during helplessness training has led to results unexplainable by the learned helplessness model in the study by Tennen et al. (1982 b) and other recent investigations (e.g., Chartier & Friedlander, 1981), suggests another way in which laboratory results may not generalize to performance in the real world.

An additional limitation of the typical laboratory helplessness paradigm is that it also artificially constrains the kind of reactions to uncontrollable events that can be observed. The test tasks typically employed in helplessness studies make it possible to determine when individuals show facilitated performance, or when they show decrements. However, as Silver and Wortman (1980) have noted, there

are many other ways that individuals may react when exposed to uncontrollable outcomes. For example, they may use intrapsychic coping mechanisms (cf. Lazarus, 1981; Lazarus & Launier, 1978) such as denying the implications of these outcomes for their competence. They may also seek support from others (cf. Coyne, Aldwin, & Lazarus, 1981), may choose to respond with hostility toward those who are exposing them to undesirable outcomes, or may withdraw from the situation altogether (cf. Carver, 1979). Overtly hostile behavior is probably much less likely to occur in the laboratory than it is in other settings because of the experimenter's position of authority, the subject's role requirements, and demand characteristics of the setting. Moreover, as noted earlier, withdrawal of any kind is made difficult not only by the same role requirements that discourage hostility, but often by explicit instructions as well (see e.g., Tennen et al., 1982 b). We believe that it is important to study reactions to undesirable outcomes in settings that permit important responses such as support seeking, hostility, and withdrawal. Withdrawal responses may be particularly important to study, since some people may avoid the very tasks or situations that would yield evidence of competence. As Bandura (1977) and others have noted, avoidance of stressful situations is a major factor impeding the development of new coping skills. Thus, the fact that learned helplessness deficits are observed in the laboratory does not necessarily mean that subjects would behave this way in the real world.

In our judgment, in addition to being deficient in mundane realism, many laboratory experiments of learned helplessness lack experimental realism as well (Aronson & Carlsmith, 1968; Carlsmith et al., 1976). Aronson and Carlsmith (1968) maintain that a laboratory experiment need not be similar to the real world as long as it is "realistic to the subject, if it involves him, if he is forced to take it seriously" (p. 22). However as described above, patterns of feedback are often so transparent that subjects may be unlikely to accept them at face value. In addition, we feel that in their attempts to develop a precise methodology, experimenters have paid too little attention to providing subjects with an adequate cover story for why experimental events are taking place. For example, consider the experience of a subject in the Oakes and Curtis (1982) studies. Subjects are asked to shoot a gun at a target 100 times and receive a tone as "reward" or "punishment" (depending on the condition). Following the gun shooting task, subjects are led to believe that the experiment is over, apparently without being offered an explanation for their participation, and asked to provide standardization data on anagrams since "time remained." After the anagram task, the experi-

menter then administers key questionnaires assessing attributions and perceptions of control over the gun shooting task (which had been "over" and presumably of no further interest just a few minutes earlier). Even staunch supporters of laboratory methodology maintain that it is "the meaning the subjects assign to the situation they are in and the behavior they are carrying out" (Berkowitz & Donnerstein, 1982, p. 249) that play a crucial role in the generalizability of experimental findings.

In conclusion, we feel that previous helplessness researchers have employed artificial training tasks that are not similar to uncontrollable outcomes that are encountered outside of the laboratory. Unique features of the laboratory setting also differentiate such encounters from real world experience with lack of control in significant ways. Moreover, traditional laboratory experiments of learned helplessness are severely restricted by the types of problems that can be studied and the responses that can be observed. We can understand why investigators originally chose to follow the early animal paradigm quite closely. In our opinion, however, the continued reliance on the animal paradigm as a model for human helplessness research may be counter-productive. We strongly agree with Tennen et al. (1982 b) that "an important task for future research will be to devise laboratory tasks which more closely approximate real life situations."

Solutions to the Problem of Artificiality

There are several possible solutions to the problem of artificiality. Investigators might employ paradigms to study learned helplessness that more closely approximate real world stressors. Alternatively, they might move outside the laboratory to study naturally occurring stressors or uncontrollable life events. Each of these possibilities is discussed in turn.

A creative laboratory approach. In their classic book, *Urban Stress*, Glass and Singer (1972) conducted a number of important laboratory studies on the aftereffects of unpredictable and uncontrollable stress. These studies, which exposed subjects to noise bursts, shocks, and failure at problem-solving tasks, helped to delineate the conditions under which uncontrollable stressors were likely to have deleterious consequences. As Glass and Singer (1972) acknowledged, however, these studies did not "represent analogues of basic social problems characteristic of complex urban life" (p. 121). In order to enhance the likelihood that their results would generalize to the situations of interest to them, they designed some very clever laboratory experiments that focussed on socially relevant, nonnoise stressors like exposure to bureaucratic red tape and arbitrary discrimination (see

Glass & Singer, 1972, pp. 121–137). In one of these studies, subjects were exposed to an encounter with a bureaucrat that was highly similar to the kinds of uncontrollable stressors many of us encounter each day. When subjects arrived for the experiment, they were shown a memo asking them to report to the administrative assistant of the department to complete some forms prior to participating in the study. Each subject was asked to go to the assistant's office, which was in another building on campus. There the assistant informed the subject that each student was required to complete a form requesting background information before participating in any studies. In one of the experimental conditions this form was lengthy, and asked for names and addresses of relatives, high schools, and numerous other details. The questions were designed to be repetitious and not to fit into the space provided. Once the subject had finished the form, the assistant examined it. She then announced that since it had not been completed to her satisfaction (e.g., the subject had written in the margin or ditto marks had been used), it would have to be redone. Just as the subject completed the form a second time, the assistant received a rigged phone call, and spent several minutes discussing a personal matter. After the form was finally accepted, the subject went back to the laboratory for the "experiment," where various tests were administered to determine the impact of this bureaucratic encounter.

We have described one condition of this experiment in some detail in order to illustrate the paradigm employed. In our judgment, this study shows that even within the confines of the laboratory, it is indeed possible to expose subjects to uncontrollable outcomes that closely parallel those encountered in naturalistic settings.

Moving outside the laboratory. Although there are creative ways to explore learned helplessness and its possible mediators in the laboratory, perhaps the richest source of data can be obtained outside the lab itself. Stress abounds in the "real world," and with some notable exceptions (see, e.g., DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Kanner, Coyne, Schaefer, & Lazarus, 1981) few investigators have explored the impact of repeated uncontrollable life stressors on the motivations, cognitions, and emotions of individuals who encounter them. It is, of course, possible to conduct theory-based research in real world settings. For example, Baum, Aiello, and Calesnick (1978) have examined an important issue in environmental psychology—crowding—in terms of learned helplessness. They maintained that since crowding involved loss of control over one's social outcomes, repeated exposure to crowded living conditions should produce helplessness. College students had been ran-

domly assigned to dormitories with long, crowded corridors or to short corridors where social outcomes were more controllable. Groups of subjects were brought into the laboratory after one, three, or seven weeks of residence and were asked to perform tasks to assess the impact of exposure to lack of control. An independent sample of dormitory residents were asked to complete questionnaires after one, three, or seven weeks of residence to assess their mood, and their attempts to regulate social interaction in the dorm. This design enabled the investigators to examine whether individuals exposed to uncontrollable social interaction demonstrate more helplessness than subjects who are not, and whether reactions to uncontrollable outcomes change over time (cf. Wortman & Brehm, 1975).

A number of undesirable life events also parallel the focus of learned helplessness theory on repeated uncontrollable stressors. Hospitalization for illness often extends over time, and enables the researcher to explore a number of predictions of the helplessness model (cf. Taylor, 1979). In addition, investigators have recently examined the validity of the learned helplessness theory using such populations as epileptics who experience severe and uncontrollable seizures on a repeated basis (Devellis, Devellis, Wallston, & Wallston, 1980) and patients with end-stage renal disease (Devins, Binik, Hollomby, Barré, & Guttman, 1981). While these investigations have not always provided strong support for the model, they have enabled researchers to examine the question of inappropriate generalization of feelings of control following an uncontrollable outcome to other important aspects of one's life (see Devins et al., 1981).

The learned helplessness model states that exposure to uncontrollable stressors leads to an expectation of future uncontrollability, and subsequent helplessness effects. As noted earlier, most of the laboratory experiments on learned helplessness have exposed animal or human subjects to a series of small, repeated, uncontrollable events. Does the theory hold for individuals who experience a single major uncontrollable event such as losing a loved one or becoming seriously ill? Does encountering such an outcome alter people's expectations regarding their ability to influence subsequent outcomes, and thus result in passivity in the face of future goals? To what extent do the emotional reactions experienced by a bereaved or seriously ill person generalize to other areas of his or her life? As Silver and Wortman (1980) have noted, these important issues are not explored in most theories that concern how people cope with uncontrollable life events.

Earlier in this paper, we also pointed out that most laboratory studies have employed uncontrollable outcomes that are identical or highly similar to one another, and that occur within a short time

span. However, outside of the laboratory, people are much more likely to be exposed to uncontrollable stressors that are dissimilar and widely separated over time. Does exposure to such stressors result in the expectation of future uncontrollability, and subsequent helplessness? Much of the early research on life events (e.g., Holmes & Rahe, 1967) was based on the assumption that exposure to repeated dissimilar life stressors would have a detrimental effect on physical and mental health. Research has demonstrated that while such effects are consistently found, they are typically very small in magnitude. For this reason, most researchers in the life events area have maintained that it is not mere exposure to such events, but the subjective interpretation of these events, that influences subsequent physical and mental health (Hammen & Mayol, 1982). We know of no life events researchers who have assessed respondents' expectations of future uncontrollability, or subsequent behavioral deficits, after exposure to one or more stressful life events.

During the course of their lives, most people are indeed exposed to a wide variety of uncontrollable life events. Does exposure to particular life crises generate expectations of future uncontrollability, and helpless behavior, when a subsequent life event is encountered? Alternatively, does exposure to such crises impart coping skills that enhance a person's ability to deal with subsequent life events? While a review of the evidence regarding this issue is beyond the scope of this paper (see Silver & Wortman, 1980), available information suggests that each of these reactions is common. For example, Burgess and Holmstrom (1978) found that women who had previously lost a parent, spouse, or child through death, divorce, or separation recovered significantly more rapidly from being raped than women who had not had such an experience. However, women who had experienced a criminal assault (e.g., sexual assault, physical assault, mugging, or verbal or physical sexual harassment) took significantly longer to recover from the rape than individuals who had not. Whether repeated stressors produce helplessness may depend on such factors as their similarity, timing, or clustering (see Miller, 1981, for a discussion of this issue). A single criminal assault may have much less impact on one's expectations of future uncontrollability than two such events. A second, highly similar event may be particularly likely to result in feelings of helplessness when the victim has made changes in behavior after the first event, but the second one happens nonetheless. Thus, cancer patients who do everything they can to maintain a painful and exhaustive treatment regime, but who nonetheless experience recurrence, may be particularly vulnerable to feelings of helplessness. Of course, experience with repeated stressors

may produce a number of cognitions in addition to expectations of future uncontrollability. Such experience may alter a person's feelings of adequacy, result in feelings of injustice or of having been singled out unfairly, or have a negative influence on the support available from others. Any of these factors may result in characteristic signs of helplessness such as depression and lowered motivation to pursue subsequent goals.

In summary, we believe that situations in which people encounter repeated, uncontrollable, and highly similar stressors, such as epilepsy, provide a unique opportunity to examine predictions from the learned helplessness model in real world settings. However, most uncontrollable stressors encountered outside the laboratory have much less similarity to the laboratory helplessness paradigm. Whether the model is applicable to individuals who encounter a single but major life crisis, or to individuals who experience disparate crises separated by time, is an empirical question that has yet to be resolved. In our judgment, this is a fruitful area for subsequent research.

One advantage of applying the helplessness model to the study of undesirable life events is that the model makes intriguing predictions about subsequent behavior following exposure to such events. Another reason why we would advocate application of the model to this issue is that by so doing, it may be possible to delineate the limitations of the current model. For example, the model focuses primarily on the conditions under which people will become depressed as a result of exposure to uncontrollable outcomes. As Silver and Wortman (1980) have indicated, however, depression is not the only debilitating emotion that may occur. In fact, anxiety is a far more common reaction to a wide variety of undesirable life events than is depression. These data suggest that future theories on reactions to uncontrollable life events need to consider a broader range of emotional reactions than the learned helplessness model has incorporated.

In addition to providing a unique opportunity to test and extend the learned helplessness model, we believe that studying reactions to undesirable life events affords the opportunity to address several other questions of interest. The learned helplessness model provides a basis for predicting when people will engage in problem-solving behavior, and when they will give up. As noted earlier, however, there are many other coping strategies that may be employed when an individual is faced with an undesirable life event. These have been most forcefully articulated by Lazarus and his associates (Lazarus, 1981; Lazarus & Launier, 1978), who have suggested that in addition to direct action, individuals may engage in such alternatives as information seeking or denial that the outcome has occurred. By

studying reactions to uncontrollable stressors outside the laboratory one may examine the following questions of interest: What are the conditions under which particular coping strategies are employed by individuals who first encounter an uncontrollable life event, and how do these strategies change over time? What do people do when they find that a particular coping strategy is having little effect, or when repeated occurrences of the outcome shatter their beliefs that their strategies are working? Under what conditions are particular coping strategies maintained despite evidence that they are not effective, and under what conditions does an individual change to a new strategy? It is likely that successful copers are characterized by their flexibility in the selection of coping strategies (cf. Pearlin & Schooler, 1978) as they encounter various uncontrollable events in daily life.

The Importance of Moving Beyond Attributions

As noted earlier, one conclusion that might be drawn on the basis of the helplessness studies reported in this volume, is that cognitive mediators of helplessness are unimportant. In our judgement, such a conclusion would be unfortunate, not only for the reasons discussed earlier, but because it ignores the many studies that have demonstrated the importance of cognitive mediators of the helplessness effect. Investigators have found that, when faced with identical helplessness training, some individuals did not show performance decrements. Much of the work by Dweck and her associates in the achievement area has demonstrated clear differences following failure experiences among helpless and nonhelpless (or mastery oriented) children (Diener & Dweck, 1978; Dweck, 1975; Dweck & Bush, 1976; Dweck & Reppucci, 1973). Not only did behaviors differ following identical helplessness training, but when asked directly, these children also differed in the kinds of attributions they made for failure experiences. In general, children whose behavior deteriorated following exposure to failure blamed relatively uncontrollable, non-modifiable factors (e.g., insufficient ability) for their lack of success. In contrast, children who persisted in the face of failure blamed comparatively controllable factors, such as lack of effort, for their poor performance (see Dweck & Wortman, 1982, for a further discussion of this literature). In traditional laboratory experiments with college students (Wortman et al., 1976) and depressed inpatients (Miller & Norman, 1981), manipulating subjects' attributions during helplessness training has been shown to influence the degree to which subjects report negative affect. In addition, manipulating subjects

attributions has also been shown to influence task performance (Hanusa & Schulz, 1977; Miller & Norman, 1981; Tennen & Eller, 1977). (But see Wortman & Dintzer, 1978, for a discussion of how results of these and other articles fail to conform to the Abramson et al., 1978, model specifically.)

Researchers have also investigated whether depressed or nondepressed college students (Golin, Sweeney, & Shaeffer, 1981; Hammen & Cochran, 1981; Harvey, 1981; Rizley, 1978; Seligman, Abramson, Semmel, & von Baeyer, 1979; Zuroff, 1981) or the physically ill (Devins et al., 1981) make differential attributions for manipulated or naturally occurring negative outcomes. While this literature has offered only mixed support for the Abramson et al. (1978) model specifically, it has often demonstrated the importance of attributions and other cognitive mediators among a variety of populations. In fact, in two different studies with individuals who have become permanently paralyzed, we have found attributions of responsibility for the accident to others to be associated with greater emotional distress and poorer coping (Bulman & Wortman, 1977; Silver and Wortman, Note 3). In our opinion, it would be unfortunate for researchers to abandon a potentially fruitful investigation of attributional mediators of learned helplessness and depression, given the modest success it has had thus far.

Although we maintain that investigations of attributional mediators are worthwhile, we feel that a focus on attributions alone is insufficient. A central assumption of the Abramson et al. (1978) reformulated learned helplessness model is that, when faced with uncontrollable outcomes, individuals make causal attributions as to why they are helpless. Although Abramson et al. (1980) contend that such attributions may be made "implicitly or explicitly" (p. 5), there is little evidence to indicate that subjects spontaneously make attributions for success or failure following helplessness training when asked to do so in an open-ended fashion (see Hanusa & Schulz, 1977). As Wortman and Dintzer (1978) explain, failure to find spontaneously generated attributions among subjects may be due to the fact that subjects are unable to articulate them clearly, or that they may have forgotten their attributions by the time they were asked to report them. In contrast, subjects may not have yet ascribed any particular cause for the uncontrollable outcome.

However, creative techniques employed by Diener & Dweck (1978) suggest that, at least among children, careful causal analyses for failure may be rare. These investigators asked children to "think aloud" as they went through a series of difficult discrimination learning problems and then encountered failure. When faced with fail-

ure, few nonhelpless, or mastery-oriented children focused on causes for the outcome, and those few attributions that were verbalized did not fit any particular pattern. Rather than being concerned with causes for failure, these children were challenged by the task at hand and were intent on finding a solution for it. They were able to concentrate, remain task-oriented, and block out distractions. They were confident and optimistic in the face of failure, and emphasized remedies rather than dwelling on causes. Among children previously identified as helpless, cognitions that were verbalized were quite different. Helpless children did make "automatic" negative self-attributions for failure, frequently assigning causes such as loss or lack of ability. In addition, however, they expressed negative affect toward the task, engaged in more task irrelevant thoughts, became self-critical and exhibited low self-esteem. In contrast to mastery-oriented children, such helpless subjects also exhibited lower expectations for subsequent performance (see Dweck & Wortman, 1982, for further discussion of this literature).

Thus, while attributional differences have been demonstrated in response to experimenter probes, free response techniques indicate that helpless and nonhelpless individuals may be distinguished by a wide range of cognitive strategies they differentially employ. In fact, specifically selecting nondepressed individuals as subjects in laboratory investigations of the learned helplessness phenomenon, as was done in both Tennen et al. (1982 a, 1982 b) reports, may maximize the chance of *not* finding an effect of attributional mediators. Such nondepressed (i.e., nonhelpless) subjects may be particularly those individuals for whom causal questions are least important.

Our work with individuals who have been physically disabled following a traumatic accident (Silver & Wortman, Note 3) has also suggested that attributional issues may not be as important as other cognitions in determining the degree of emotional distress following a major negative uncontrollable outcome. In this study, approximately 100 physically disabled individuals were interviewed seven days following their injury, and followed several months over the course of acute care, hospitalization, and rehabilitation. Specific attributions of blame for the injury (i.e., to self, others, environment, and chance) did not show a consistent relationship to self-reported emotional distress. Degree of upset, however, was related to whether or not the respondent focused on *why* the accident happened at all. Following Bulman and Wortman (1977), respondents in this study were asked whether or not they ever asked themselves the question "why me?" Although these individuals were often in great pain, were immobilized in their hospital bed, and often dependent on the

hospital staff for their very survival, approximately one half of the subjects in this sample reported never asking themselves this question. Interestingly, whether or not subjects asked "why me?" was unrelated to the severity of their injury or to the degree of permanence of their limitations. However, those subjects who asked "why me?" three weeks following injury reported significantly more depression, anxiety, anger, and less happiness. The learned helplessness model itself may thus need further modification to incorporate such cognitive influences.

Other than attributional questions, what types of cognitions might predict distress following major uncontrollable outcomes? Perhaps the degree to which individuals ruminate about their outcome (i.e., focusing on the past and retrospectively regretting its occurrence) might distinguish successful copers from those less successful. Are individuals who voluntarily or involuntarily rehearse possible alternative outcomes that did not materialize (cf. Glick, Weiss, & Parkes, 1974; Kahneman & Tversky, 1982; Parkes, 1972) more likely to report distress? Preliminary evidence from the study of the physically disabled described above suggests that this may be the case. Individuals who reported spending time thinking about how their accident could have been avoided, who found themselves saying "if only something had been different" and reported being bothered by intrusive memories of their accident were significantly more likely to report emotional distress. Similarly, a recent study of incest victims (Silver, Boon, & Stones, *in press*) found that those women who had recurrent, intrusive, and disruptive thoughts of the incest experience of their youth reported greater psychological disturbance, lower levels of self-esteem, and poorer social adjustment.

Current work in the area of cognitive social psychology suggests additional constructs that may be useful in predicting reactions to uncontrollable life events. One construct that may have particular relevance for explaining individual differences in responses to stress is the concept of schemata. Schemata are mental organizations of experience that influence the way information is processed and the way behavior is organized (see Hastie, 1980, and Taylor & Crocker, 1980, for reviews of the various literatures that employ this concept). For example, Landau and Goldfried (1981) point out that how people respond to particular events depends on their semantic schemata: the networks of associations to that particular event. Does the word "divorce" evoke "loneliness, loss of income, loss of meaning in life," etc. or does it evoke "an opportunity to begin again"? Similarly, reactions to uncontrollable situations may also depend on self-schemata (Markus, 1977). A person with the self-schema of "I am some-

one who tries to learn from my experience of unpleasant and stressful situations" probably will respond differently from a person with a self-schema of "I usually go to pieces when I encounter a stressful situation." These mental structures may mediate primary appraisal (Lazarus, 1981) as part of the process of coping with stress.

Another example of a schema that may influence behavior in stressful situations is the instrumental script (Schank & Abelson, 1977), which is a mental organization of behavioral sequences that follows from a plan for accomplishing a goal. People differ in the extent to which they have developed goals, plans, and tactics for dealing with stressful events that are encountered. When they encounter an uncontrollable life event, some individuals may generate plans and tactics for dealing with the event or its ramifications. Others may focus instead on how the event may have been avoided or on their own distress. Focusing attention on one's affect intensifies it and may thus increase the likelihood of debilitation (Carver & Scheier, 1981; Duval & Wicklund, 1972; Fiske, 1982).

Our current research with parents who have lost an infant to Sudden Infant Death Syndrome is designed to investigate the cognitions of individuals coping with an uncontrollable outcome in more detail. In addition to asking traditional questions about attributions of responsibility for the death of a child, parents are asked directly about the degree to which attributional issues are important as they try to cope with their loss. Perhaps there are some outcomes, such as the sudden and unexplainable loss of an infant, for which attributional questions are unavoidable. However, does the importance of such a causal search decrease with time? We also explore the degree to which parents are troubled by or absorbed in ruminations about their loss. What motivates an obsessional review of the outcome? What specific events trigger such thoughts? Does the content change or the frequency or intensity of such cognitions decrease over time? Can parents interrupt or block these thoughts when they want to? How do these cognitions interfere with a parent's ability to function with more minor daily stressors? Must parents focus on the loss and "work it through" in this way in order to adjust successfully, or can such a focus be avoided by individuals who are able to cope effectively? We maintain that a thorough examination of such issues is imperative in order to understand the phenomenological experience of coping with important uncontrollable stressors. It is unlikely that relatively minor uncontrollable outcomes encountered in the laboratory will generate such cognitions, particularly during the limited time frame in which they are studied. Nevertheless, we feel that it would be unwise to neglect such cognitive experiences simply be-

cause they are difficult to investigate using traditional laboratory techniques.

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