LEARNED HELPLESSNESS AND DEPENDENCE
ON THE JUDGMENT OF OTHERS

DISSERTATION

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The relationship between learned helplessness (Seligman, 1975) and dependence on the judgment of others, as measured by an Asch-type conformity task, was investigated. Relevant constructs were reviewed: helplessness, locus of control, depression, self-esteem, dependency, and Campbell's (1961) epistemological weighting hypothesis. It was reasoned that experience with uncontrollable outcomes would not only result in learned helplessness, but also subjects' confidence in their own ability to control outcomes would be undermined so that they would rely heavily on the judgments of others as opposed to their own.

The subjects were 51 college students assigned to conditions on the basis of their order of appearance in the laboratory. Each subject was first given a pretreatment administration of a letter/number coding task which served as a control of initial ability at coding. The subject then served in one of three training conditions: (a) controllable noise—subject could terminate an aversive tone by pushing a button four times; (b) uncontrollable noise—subject was yoked to a controllable-noise subject and received the same sequence,
duration, and intensity of aversive tone but could not control it since the button was deactivated; or (c) no-training --subject did not receive the button-pressing task.

The subject was then given a task which involved counting a series of rapid clicks as a dependent measure of conformity. The subject was led to believe that he/she was verbally giving his count after hearing three other subjects give their estimates. However, he/she actually heard a tape recording of experimental confederates giving prearranged erroneous counts.

Finally, an anagrams test and then three parallel forms of a letter/number coding task were given to serve as measures of helplessness.

Analysis of variance of the click-count measures and comparison of pairs of means by the Newman-Keuls method was performed. Contrary to the hypothesis, the experience of uncontrollability resulted in suppression of conformity responses.

Multivariate analysis of covariance was applied to the coding and anagrams measures, with the pretreatment coding task scores used as covariate. Contrary to the hypothesis, no helplessness effects were found.

Anxiety, psychological reactance, frustration, anger, or some combination of these resulting in a facilitation of performance was offered as a possible explanation for the unexpected results. Most plausible was that subjects'
resulting performance deficits may have represented loss of initiative to control social reinforcers. It this is so, the deficits seen in helplessness experiments should be greater when test tasks involving social reinforcers are utilized. Further research is needed to clarify the inter-relationship of helplessness, depression, and conformity/anticonformity.
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The purpose of this investigation was to determine whether the learned helplessness phenomenon (Seligman, 1975; Maier & Seligman, 1976) included a tendency for helpless individuals to rely more heavily on the judgment of others as compared to their own.

Seligman (1975) defined helplessness as the psychological state which developed when one experienced events that were uncontrollable. These events represented stimuli impinging on the organism which he could do nothing about—they were independent of his behavior, and no voluntary response could alter procedurally the occurrence of the event. According to Seligman, this state consisted of three components or consequences: (a) motivational—a decrease in initiation of responses to control events; (b) cognitive—an inability to perceive the relationship between one's behavior and outcome, so that one had difficulty learning when his responses had actually succeeded in controlling an outcome; (c) emotional—emotional imbalance followed by depression.

The initial studies of the learned helplessness phenomenon were conducted with dogs (Overmier, 1968; Overmier & Seligman, 1967; Seligman & Groves, 1970; Seligman & Maier,
The first of three experiments by Overmier and Seligman (1967) was representative. Their procedure was to confine a dog in a Pavlovian hammock and administer a predetermined random sequence of 64 electric shocks, each of 5 seconds duration and 6 milliamperes intensity—not preceded by any signal. Then 24 hours later, the dog was given 10 trials of signaled escape-avoidance training in a two-way shuttle box in which shock was terminated whenever the dog jumped over a barrier from one chamber into another. A light-dimming signal began 10 seconds before each shock and terminated if the dog shuttled. If he did not shuttle within 10 seconds after light dimming, a 4.5 milliampere shock then began and continued for 60 seconds or until the dog shuttled.

Seligman (1975) reported that these early studies made approximately 100 of about 150 dogs helpless. The dogs not given prior inescapable shock (who learned to shuttle when given shock in the escape/avoidance task) typically ran about frantically until they accidentally jumped the barrier and terminated shock. The time to escape was usually shorter for the next few trials. The dogs who received uncontrollable shock, on the other hand, characteristically struggled about at first when shocked—but soon tended to lie down, whine, and take the shock on each trial. Approximately a third of these did so even after having successfully shuttled during the first several trials.
With the exception of Seligman and Maier (1967), the studies with dogs did not use yoking procedures. Many later studies on learned helplessness (Hiroto & Seligman, 1975; Maier, 1970; Maier, Albin, & Testa, 1973; Maier, Anderson, & Lieberman, 1972; Seligman & Beagley, 1975) used what Seligman (1975) termed the "triadic" design (p. 25). Subjects that received uncontrollable outcomes were found to be deficient in escape in comparison to subjects that received controllable outcomes or no experimental treatment. In the triadic design, one group was presented with an outcome which was controllable or contingent upon behavior. A second group was yoked to the first. Each subject in the second group received the same sequence, duration, and intensity of the outcome stimulus as the subject to which it was yoked—but no response the subject made would alter any aspect of the outcome. The yoking in this procedure was to assure isolation of the controllability variable so that helplessness could be attributed to this rather than to the parameters of the outcome event (e.g., an electric shock). A third group received no pretreatment.

Numerous studies have demonstrated the learned helplessness phenomenon in human subjects (Benson & Kennelly, 1976; Fosco & Geer, 1971; Glass & Singer, 1972; Hiroto, 1974; Hiroto & Seligman, 1976; Klein, Fencil-Morse, & Seligman, 1976; Klein & Seligman, 1976; Krantz, Glass, & Snyder, 1974; Miller & Seligman, 1975, 1976; Racinskas, 1971; Rodin, 1976;
Roth & Kubal, 1975; Thornton & Jacobs, 1971; Thornton & Powell, 1974; Williams & Moffat, 1974). In an attempt to delineate the degree of generality of helplessness, Hiroto and Seligman (1974) performed five experiments and found that uncontrollable loud noises during an instrumental button-pressing task produced helpless on discrimination problem-solving tasks and vice versa.

Other examples of successful transfer were: rats trained with pole-climbing escape and tested with swimming (Braud, Wepman, & Russo, 1969); trained with shock and tested by escape from appetitive frustration (Rosellini & Seligman, 1975); trained with free food pellets and tested by bar-pressing for food (Seligman, Meyer, & Testa, 1971, as cited by Seligman, 1975); trained with a task requiring a passive response and tested by a task requiring an active response (Maier, 1970); and trained with chain-pulling for food and tested for nose-pressing for shock escape (Goodkin, 1976). Seligman (1975) noted that helplessness following uncontrollability has been found in cats, mice, rats, birds, cockroaches, and primates.

It has appeared that helplessness rested on an "expectation" of lack of control. Glass and Singer (1972) told one of their three groups of subjects that they could terminate aversive sound by pushing a button, but that it was preferred that they not. None of these subjects pushed the button, but they performed on the test task as well as a
group that controlled sound. Both these groups were superior to a group who had no control.

Pertinent to expectations of lack of control has been the internal-external literature (Rotter, 1966). External locus of control or externality, as opposed to internality, has indicated the extent to which an individual expected that reinforcement was independent of his own responding and that what happened to him was not under his control but under the control of external factors. Similar to the results of helplessness studies, numerous authors have found externals deficient in instrumental responding on various tasks (Davis & Phares, 1967; Cromwell, Rosenthal, Shakow, & Zahn, 1961; Goldberg, 1970; Gore & Rotter, 1963; Strickland, 1965).

Using the triadic design, Hiroto (1974) found externals were significantly more helpless than internals, regardless of controllability treatment condition, and subjects led to believe the training task was a test of chance performed more poorly than subjects who had been led to believe the training task was a test of skill. Hiroto suggested that the concept of controllability of outcomes was basic to both helplessness theory and locus of control theory, but that in helplessness experiments, uncontrollability referred to the experimenter actually arranging the events as uncontrollable—in the internal-external studies, externality referred to the subject's self-report as to the extent that
he perceived actual events as not under his control. It may have been that self-report tests of internal-external locus of control measured externality to the extent one had repeatedly experienced uncontrollable outcomes. Yates, Kennelly, and Cox (1975) found that external college students remembered their parents as more noncontingently punishing than internal college students remembered them.

Learned helplessness has been offered as a laboratory model of depression (Seligman, 1975). As with helpless individuals, depressed individuals have been found to be slow and deficient in instrumental responding on numerous tasks (Beck, 1967; Ekman & Friesen, 1974; Friedman, 1964; Grinker, Miller, Sabshin, Nunn, & Nunnally, 1961; Hall & Stride, 1954; Hinchliffe, Lancashire, & Roberts, 1971; Huston & Senf, 1952; Lewinsohn, 1974; Libert & Lewinsohn, 1973; Mantis & Rees, 1966; Payne, 1961; Shapiro & Nelson, 1955; Walton, White, Black, & Young, 1959).

Miller and Seligman (1975) found that inescapable aversive noises and depression both produced poorer performance on anagrams. Depressed subjects who received no noise behaved as nondepressed subjects who received inescapable noise. Also, the greater the depression, the poorer anagram performance. Depressed subjects who received inescapable noise did not perform worse than depressed subjects who received no noise. The depressed group who received escapable noise did better on anagram solution than depressed subjects who
heard no noise. Escapable noise had no effect on nondepressed subjects' performance.

Helplessness and depression both have been found to reduce expectancy changes resulting from successes and failures as compared to comparable controls (Klein, 1975; Miller & Seligman, 1973; Miller, Seligman, & Kurlander, 1975). This was further supported for the most part by Miller and Seligman (1976).

Numerous investigators (Beck, 1970; Bibring, 1953; Lichtenberg, 1957; Melges & Bowlby, 1969) have postulated that depression was an expectation of failure coupled with the belief that one's personal inabilities could be blamed for the failure. Klein et al. (1976) found that depressed subjects performed worse on an anagrams test task after exposure to unsolvable discrimination problems unless they had been given external attribution of failure instructions which effectively prevented self-blame for the failures. Also, the depressed group with external attribution instructions did better than the combined depression groups with internal attribution of failure instructions which emphasized that failures were due to their personal inabilities.

To summarize, the evidence presented so far has suggested that helplessness, external locus of control, and depression all rested on the individuals' expectation that they could not control outcomes in situations where the responsibility for control was theirs. Further support of
the interrelationship of these constructs has come from research showing externality to be correlated with depression (Abramowitz, 1969; Emmelkamp & Cohen-Kettenis, 1975; Goss & Morosko, 1970; Hamrick, 1976; Laughlin, 1973; Naditch, Gargan, & Michael, 1975).

Several areas of research have indirectly suggested helplessness would be accompanied by an increased tendency to conform to the opinions of others. First, reliance on the judgments of others was an instance of psychological dependency (Berkowitz, 1957; Blake & Mouton, 1961; Jakubczak & Walters, 1959) and dependency has been found embedded in the depressive syndrome (D'Afflitti, 1975; Gibson, Cohen, & Cohen, 1959; Keller, Wigdor, & Lundell, 1973; Paykel & Weissman, 1973; Paykel, Weissman, Prusoff, & Tonks, 1971).

Secondly, some research suggested that externals were more easily influenced to conform to the opinion of others than were internals. Odell (1959) found a positive relationship between external locus of control and conformity, as measured by Baron's (1953) questionnaire, the Independence of Judgement Scale.

Rotter (1966) posited that internals would be more resistant to influence and manipulation from the environment if they were aware of such influence and that externals, expecting control from the environment anyway, would be more easily influenced by the environment. Strickland (1970) found external subjects more influenced by the experimenter
on a verbal-conditioning task when the subjects were aware of response-reinforcement contingencies. Subtle influence involved the experimenter saying, "Umm-hum" each time the subject chose a verb from among four words to pair with a stimulus word. Getter (1966) also found externals showed greater performance gain in response to experimenter influence on a verbal-conditioning task. He additionally found that acquisition rates rose during extinction trials for those internals who were aware of contingencies. Baron (1969) and Lichenstein and Craine (1969), however, found no differences between internals and externals on verbal-conditioning tasks.

Gore (1962) presented TAT cards to subjects and in the overt influence condition commented as to which card she though elicited the longest stories. In the covert influence condition, she simply looked at the card and smiled prior to handing it to the subject. Length of story was the dependent measure of influencability. Internals were significantly more resistant to influence than externals or controls in the covert condition. Oziel (1972) also found internals to resist indirect but not direct influence. Externals complied under both direct and indirect influence. They complied increasingly in the standard, indirect, and direct conditions. Similar results were obtained by Hjelle (1970).
Most of these studies (Getter, 1966; Gore, 1962; Hjelle, 1970; Oziel, 1972; Strickland, 1970) indicated that externals were more easily influenced than internals and that under subtle influence conditions, internals resisted influence. One study (Biondo & MacDonald, 1971) found that internals moved away from the position argued in a high-influence condition, but not in a low-influence (subtle) condition. This was inconsistent with the previously mentioned studies. The fact that externals conformed under both levels of influence was consistent. Persuasive content involved presenting alternate grading systems under which the subjects' school performance would be assessed.

Fitz (1970) hypothesized that since externals were more socially oriented and dependent on social reinforcement, they would show greater differences in learning performance as a function of varying external social reinforcement. Results were opposite to that hypothesized. Internals, not externals, had fewer errors under control conditions than under praise or censure. Fitz concluded that praise and censure functioned as a distraction for internals. However, these results appeared to be consistent with the idea that internals resisted subtle influence, although it was not obvious that influence here could be referred to as subtle or indirect. Unfortunately, Fitz did not report a comparison of the absolute level of performance of externals and internals.
Ritchie and Phares (1969) presented an argument similar to that of Rotter (1966), but they indicated that externals were not more influencable in all situations. They reasoned that perhaps externals perceived reinforcement in both overt and covert influence situations as under the control of others. Maybe they perceived low power or status sources as controlling their reinforcements less, and were not as likely to accept influence from them. Internals, since they expected to control reinforcers themselves, might have tended to accept influence equally from high and low prestige sources, but to a lesser extent than externals who received messages from high prestige sources. The direction of opinion change in their subjects supported all hypotheses.

Crowne and Liverant (1963) found that externals conformed to experimental confederate judgments significantly more than internals in attempting to choose the larger of two groups of dots presented tachistoscopically. One group was required to bet on their judgments, and a tendency (p < .10) was found for externals to be less confident in their judgments than internals. These authors pointed to Rotter's (1954) Social Learning Theory which characterized the conformer as one who had low expectancy of success, so that conformity was a protective measure designed to avoid failure. This theory based conformity on the individual's lack of confidence in his own ability.
MacDonald (1973) reported six studies on the development of an Asch-type conformity scale with acceptable internal consistency and test-retest reliability. Conformity scores were found to relate to a factor of external locus of control.

A third link between helplessness and conformity has been by way of the construct of self-esteem. Lack of confidence in one's ability to control outcomes would appear to be closely related to poor self-esteem, as low self-esteem represents one's belief in his own ineffectiveness, incompetence, and powerlessness. Lefcourt (1966), in reviewing the locus of control literature, described externals as lacking self-confidence and having inferiority feelings. As suggested earlier, externals tended to conform to the opinion of others. Also, lowered self-esteem has long been considered an integral part of depression (Bibring, 1953; Rado, 1928), and helplessness has been offered as a laboratory model of depression (Seligman, 1975). Depressed individuals have given unrealistically low appraisals of their own ability (Colbert & Harrow, 1968, Friedman, 1964; Loeb, Beck, & Diggory, 1971).

In the same way they led to immediate effects on helplessness (depression), uncontrollable outcomes led to immediate effects on self-esteem (Blum, 1973; Flippo, 1972). The prediction that uncontrollable outcomes would lead to conformity should be strengthened by findings indicating that low self-esteem increased influencability toward conformity.
Numerous authors (Janis, 1954; Janis & Field, 1959; Janis & Rife, 1959; Lesser & Abelson, 1959; Linton & Graham, 1959) have reported an inverse monotonic relationship between self-reported self-esteem and conformity, or persuasibility. Conformity in these studies was defined as the tendency to alter opinions in the direction of persuasive communications.

Singh and Prasad (1973) found a significant correlation between conforming tendencies as measured by the Human Relations Inventory (Bernberg, 1954) and self-reported self-esteem. DeCharms and Rosenbaum (1960) found a negative relationship between self-esteem and "matching," meaning when one made a response similar to that of others, but when the response would not occur independently of observation of others' behavior (Dollard & Miller, 1944). Gelfand (1962) found an inverse relationship between self-esteem and conformity, using matching behavior on a picture preference task as the dependent measure of conformity.

The relationship between self-esteem and conformity was not always negative and monotonic, but self-esteem interacted with degree of threat in persuasive communications. Cohen (1959) presented evidence that his high self-esteem subjects used avoidance defenses which enabled them to exclude from cognition threatening stimuli, whereas low self-esteem individuals utilized expressive mechanisms. These latter mechanisms left the individual more sensitive to threatening stimuli as he tried to distort them. This
has received support from Coopersmith (1959) and Stotland, Thorley, Thomas, Cohen, and Zander (1957). Silverman (1964) found that the experience of failure in the performance of a need-related behavior increased conformity for low self-esteem individuals. Conformity induction involved simply presenting faked average responses on items of a 7-point rating scale of attitudes. No persuasive arguments were involved. Nisbett and Gordon (1967) achieved similar results.

Levanthal and Perloe (1962) carried application of Cohen's hypothesis even further with regard to conformity. They found that high self-esteem subjects changed their opinion about army life in response to optimistic communications more than did low self-esteem subjects and rejected pessimistic (threatening) communications. Low self-esteem subjects showed exactly the opposite pattern.

The complexity of communications also interacted with self-esteem to produce different effects on conformity. In studies that showed a simple monotonic inverse relationship between self-esteem and conformity (Janis, 1954; Janis & Field, 1959; Janis & Rife, 1959; Lesser & Abelson, 1959; Linton & Graham, 1959), conformity induction involved non-threatening, clear and simple messages. Gollob and Dittes (1965) found the monotonic inverse relationship. Low self-esteem was associated with increased persuasibility when advocated opinion was nonthreatening and communicators' position was simple. Low self-esteem decreased persuasibility,
however, when the communicator's message was a threatening
discussion of the likelihood of the subject's developing
cancer. Perhaps those with low self-esteem defended against
anything which increased their insecurity—but if no threat
was involved, agreeing with others enhanced their needed
self-esteem. Low self-esteem was associated with decreased
persuasibility when the communication was complex and diffi-
cult to understand. In this case, these authors suggested
that threat interfered with understanding in low self-esteem
individuals, and that they could not agree with that which
they did not understand. Relevant studies have shown that
anxiety facilitated performance on simple tasks and inter-
fered with performance on complex tasks (Child, 1954;
Montague, 1953; Sarason, Davidson, Lighthall, Waite, &

McGuire (cited in Nisbet & Gordon, 1967) believed a
multiplicative two-factor model accounted for nonmonotonic
relationships between personality variables such as self-
esteeem and susceptibility to social influence. He contended
that opinion change was the outcome of (a) attention and
comprehension of the persuasive message and (b) yielding to
what was comprehended. He suggested self-esteem was related
to comprehension and to yielding in opposite directions,
thus potentiating nonmonotonic relationships. Self-esteem
was positively related to the amount of attention to and
accurate comprehension of the persuasive message. However,
self-esteem was negatively related to yielding to the judgment of others. Therefore, the optimal level of self-esteem for producing conformity varied, depending where the comprehension and yielding gradients cross in different induction procedures. The more difficult the comprehension required to receive a message, the higher the level of self-esteem required for maximum yielding. The more difficult (due to lack of evidence of implausibility, or whatever) yielding was, the lower would be the level of self-esteem for maximum yielding. Nisbet and Gordon (1967) found a nonmonotonic negative relationship between self-esteem and influencibility when conformity induction was easy to comprehend, but highly plausible. A slight positive relationship was found when the induction was difficult to comprehend, but highly plausible. Silverman, Ford, and Morganti (1966) found that for females, self-esteem and persuasibility were negatively related when conformity induction involved simple arguments --and curvilinearly related when the arguments were complex with positive slope changing to negative at the higher levels of self-esteem. The relationship tended to be negative under both argument conditions for males. These authors interpreted their results as supporting McGuire's deductions.

A study by Gelfand (1962) showed both the complexity variable and the threat variable to interact with self-esteem in determining persuasibility. He found minimal responsiveness of low self-esteem subjects on a verbal
conditioning task. This result appeared to be consistent with the reasoning of McGuire (1966), but inconsistent with that of Cohen. Failure feedback should be threatening and, according to Cohen, should facilitate performance of low self-esteem subjects. Perhaps the factor of complexity outweighed the effects of threat. This was inconsistent with the fact that low self-esteem subjects, following failure feedback, increased persuasibility on a simple preference task. Gelfand suggested anxiety should facilitate performance on simple tasks.

The high persuasibility of Gelfand's subjects who were exposed to experiences inconsistent with their customary self-evaluation (high esteem—failure feedback and low esteem—success feedback) did not appear explainable by the ideas of either Cohen or McGuire.

The preponderance of evidence strongly suggested that low self-esteem subjects yielded to the influence of others more than high self-esteem subjects did. Self-esteem appeared to interact with the degree of threat, complexity of induction message, and plausibility of the message in a not completely consistent fashion in determining conformity. This was probably due to the loose and varied manner of defining such things as threat and complexity.

The conformity behavior of depressives was obviously relevant to the contention of dependence on the judgment of others in helplessness, but provided only quite weak support
for the contention. Evidence indicated that the basic pattern of the manic-depressive was a depressive one (Arieti, 1959; Cohen, Baker, Cohen, Fromm-Reichman, & Weigert, 1954). This suggested the appropriateness of looking at conformity behavior in the manic-depressive individual. Becker and Altrocchi (1968) indicated that conformity has had a prominent, controversial, and inconsistent role in formulations of manic-depressive character.

Some clinical observations of manic-depressives, primarily during depressive states, indicated them to be unusually dependent on the acceptance of others and strongly inclined to conform to group behavior and values (Cohen et al., 1954; Gibson et al., 1959; Titus & Hollander, 1957). These authors did not utilize experimental conformity-inducing procedures. They observed submission to authority, conventional values, achievement strivings, placating behavior, and dependence on others for guidance. Arieti (1959) suggested depressives relied more heavily on others' interpretations of the environment than on their own. Rado (1928) asserted that depressives were more influenced by depersonalized authority than nondepressed individuals. Attitude and personality scales administered to manic-depressives (Becker, 1960), remitted manic-depressives (Speilberger, Parker, & Becker, 1963), and normals possessing cyclothymic tendencies (Becker & Nichols, 1964) have supported these clinical observations.
The studies did not experimentally induce conformity, but inferred it from self-report paper-and-pencil measures.

English (1949) and Bonine (cited in Marsella, 1968) emphasized nonconformity in manic-depressives. English found that depressives derogated others' opinions (as well as their own) and stubbornly resisted new ideas in order to defend against a lack of felt autonomy. He also commented that they feared to disagree and preferred submissiveness as safer, implying that conformity may be situation related. Bonine contended that depressives had an aversion to the influence of others and would resist any call for compliance in the absence of social support.

Marsella (1968) compared the performances of manic-depressives, paranoid schizophrenics, and normals on tasks of perceptual judgment and attitude change in which confederate pressure to conform was operative. All groups conformed. Manic-depressives and normals conformed more than schizophrenics but did not differ from each other.

Becker and Altrocchi (1968) had subjects rate the extent of their agreement or disagreement with authoritarian statements after hearing three experimental confederates give their ratings. Contrary to expectancy, remitted manic-depressives were generally less conforming than controls. Specifically, both groups conformed slightly on items where confederates disagreed moderately with the statements. Controls conformed considerably and depressives remained neutral.
on items where confederates disagreed extremely. Controls remained relatively neutral and depressives moved considerably away from conformity where confederates agreed extremely. The authors stated that under high social pressure only, depressives became rigidly constricted and/or negativistic due to resentment toward authority.

Wallace (1969) assessed both movement toward and away from confederate judgment in his study on conformity. The results showed a slight increase in proportion of conformity responses, and a highly significant increase in anticonformity responses as a function of level of depression among college students. Similar results were obtained using self-esteem as a predictor.

Miranda (1971) investigated conformity in undergraduate students by varying the level of depression, self-esteem, social support, and perceived confederate competence. He found a significant interaction between level of self-esteem and confederate competence. High self-esteem subjects were significantly more conforming under conditions of high confederate competence, regardless of social support. Low self-esteem subjects tended to conform more under conditions of social support regardless of the constructive nature of the influencing source. No effects were found for depression. Miranda advised that independence or autonomy might be better conceptualized as the ability to be discriminating with respect to external messages as opposed to the capacity to oppose such influence.
Katkin, Sasmor, and Tan (1966) compared subjects' changes on an opinion scale administered before and after hearing confederates give extreme opinions. They found significantly more conformity in hospitalized depressives than in matched controls. Interestingly, when they assessed conformity by several self-report measures, results were either nonsignificant or in a direction opposite to those found in the conformity situation.

Janis (1953) measured subjects' opinions before and after exposure to persuasive communications. A personality questionnaire indicated significantly more depressive affect in those subjects highly influenced by persuasive communication than in those less influenced. Highly influenced subjects described themselves as rarely feeling like resisting the demands of others, rarely criticizing others, lacking in oppositional feelings toward "bossy" people, and lacking in resentment when deceived by others.

Robinson (1941) obtained opinion-change scores after exposing subjects to group discussion on a controversial issue. Students who shifted their opinions the most were found to have higher depression scores on a temperament scale than those who shifted least.

Lulow (1971) found depressed college students complied significantly more in terms of agreeing to perform an unpleasant task than nondepressed students. However, under conditions of being blamed for a breakdown in experimental
apparatus, depressed subjects complied significantly less than nondepressed subjects.

Paykel et al. (1971) administered an interview scale to depressives and nondepressed normals. Factor analysis and varimax rotation yielded six orthogonal factors which significantly distinguished depressed subjects from nondepressed subjects. One of the factors was interpreted as submissive dependency.

These studies, taken together, very weakly suggested depressives tended to conform to the opinion of others more than nondepressives. However, this was probably situation specific, and no firm consistencies about the parameters involved could be deduced at this time. Variables implicated were the forcefulness of influence attempts, the amount of social support, and whether conformity was observed by researchers or reported by subjects.

Conformity research provided a paradigm for assessing dependence on the judgment of others. Asch (1952) provided the prototype for many subsequent studies in conformity. In one series of experiments, Asch placed a naive experimental subject among six stooges or confederates and presented them with 18 pairs of cards. Each pair consisted of three numbered lines, one the same length as the standard and two that differed. It was preplanned that five stooges were to give incorrect unanimous judgments as to which of the three lines matched the standard in length, and the naive subject
responded sixth with his choice, followed by the last stooge agreeing with the first five. Asch found that the naive subjects yielded to the majority judgment and made significantly more errors than naive subjects judging alone. Asch also found that three stooges were as effective as fifteen in inducing conformity.

An extremely popular modification of the Asch situation was the Crutchfield technique (Crutchfield, 1955) which eliminated experimental stooges and allowed numerous naive subjects to be tested at once. This was done by not allowing subjects to see each other and presenting them all with the same fake judgments of experimental stooges—judgments which subjects thought were the responses of each other. Each subject in this situation believed he was the last to respond. Another modification of the Asch situation was to simulate a group atmosphere by presenting experimental stooges' responses to subjects by use of tape recording (Blake & Brehm, 1954; Blake & McConnell, 1953; Olmstead & Blake, 1955).

Over the years, two major explanations of why conformity occurs arose (Allen, 1965; Campbell, 1961; Deutsch & Gerard, 1972; Insko & Schopler, 1972; Nemeth, 1974; Schacter, 1951; Schulman, 1967; Thibaut & Strickland, 1956; Worchel & Cooper, 1976), and it was generally believed that both were present in differing degrees in all conformity. Normative social influence, as termed by Deutsch and Gerard (1955), was experienced by an individual when he was motivated to yield to
group judgment in order to avoid anticipated rejection. Worchel and Cooper (1976) pointed out that the consensus among psychologists was that normative social influence was most likely to produce public compliance without the accompanying private acceptance. Informational social influence, on the other hand, was felt by one who was attempting to arrive at an accurate estimate of reality by considering the judgments of others. Campbell (1961) stated, "In many instances, certainly, so-called conformity behavior is an intelligent part of a rational search for valid knowledge about a fallibly and indirectly known world rather than merely an interest in being like persons whether or not they are correct" (p. 108). This was supported by research showing less conformity when the validity of the majority was discredited (Alexander, Zucker, & Brody, 1970; Allen & Levine, 1971; Samelson, 1957). Informational influence was thought to be maximized when the anonymity of the experimental subject was protected (Argyle, 1975; Deutsch & Gerard, 1972; Nemeth, 1974; Raven, 1959; Sherif, 1961) and when the experimental task to be judged was vague (Campbell, 1961; Worchel & Cooper, 1976).

The fifth basis for expecting that helplessness may lead to the reliance on the judgment of others came from the epistemological weighting hypothesis of Campbell (1961) who described six modes of acquiring behavioral dispositions: (a) blind trial-and-error learning or locomotor exploration; (b) perception, the observation and study of a problem
without observing others or making pertinent overt behaviors; (c) perceptual observation of the outcome of another person's trial-and-error exploration; (d) perceptual observation of another person's responses without observing the outcome; (e) following linguistic instructions about the characteristics of objects to be acted upon; and (f) linguistic instructions about responses to be made.

In conformity research, the subject was faced with a discrepancy between his own judgment, the first and second modes (personal), and the judgment of others, the third through sixth modes (social). He had to weigh the personal and social modes to achieve a composite. Campbell (1961) stated, "any strengthening of an individual dispositional source will lead to decreased conformity, whereas strengthening of a social source will lead to increased conformity" (p. 114). A similar analysis was made by Hollander (1958), Mausner (1955), and Zetterberg (1957). From this reasoning, it seemed that anything which weakens the validity of the personal mode should result in relatively heavier weighting of the social mode.

If helplessness represented a state in which one's confidence in his own personal ability to control outcomes had been undermined, this could result in heavier weighting of the social modes and therefore more dependence on the judgment of others (conformity). The validity of Campbell's theory was supported by the finding that those who see
themselves as more intelligent and generally competent conform less (Beloff, 1958; Crutchfield, 1955; Helson, Blake, & Mouton, 1958; Tuddenham, 1959)—and by the finding that showing subjects their performance was not as good as others increased their conformity (Crutchfield, 1955; DiVesta, 1959; Mausner & Bloch, 1957; Rosenberg, 1961; Weiner, 1958).

The present study questioned whether individuals whose confidence in their own ability to control had been undermined would tend to rely relatively more on the judgments of others as opposed to their own. The following hypotheses were tested.

1. Subjects trained with uncontrollability would yield to the judgment of others significantly more than subjects trained with controllability or with no training.

2. Subjects trained with uncontrollability would be significantly more helpless than subjects trained with controllability or with no training.

**Method**

**Subjects**

Subjects were 51 undergraduate students (19 males and 32 females) who volunteered to participate in research for extra course credit.

**Overview**

Pretreatment involved administration of a letter/number coding task. Measures from this administration served as a control of initial ability at coding.
Subjects served in one of three training conditions: (a) controllable-noise—subject could terminate an aversive tone by pushing a button four times; (b) uncontrollable-noise—each subject was yoked to a controllable-noise subject and received the same sequence, duration, and intensity of aversive tone but could not control it since the button was deactivated; or (c) a no-training control condition in which the subject did not receive the button-pressing task with aversive noise.

A task which involved counting a series of rapid clicks, as a dependent measure of conformity, was given next. The subject was led to believe that he/she was verbally giving his count after hearing three other subjects give their estimates. However, actually, he/she heard a tape recording of experimental confederates giving prearranged erroneous counts.

An anagrams test and then three parallel forms of a letter/number coding task served as measures of helplessness.

**Apparatus and Materials**

**Training task.** The training-task apparatus was a version of a button-pressing task used by Klein and Seligman (1976), Hiroto (1974), Hiroto and Seligman (1975), and Miller and Seligman (1975, 1976). The apparatus consisted of a red spring-loaded button centered along the edge nearest the subject on the top surface of a 2 X 3½ inch (5.08 X 8.89 cm) metal base. In the upper right corner of the top surface of
the base was mounted a green light with the word "correct" printed below it and on the upper left end of the top surface of the base was a red light with the word "wrong" printed below it. A 4,000 hz., 110-db aversive tone was produced by a Beltone audiogenerator (Model 12c) and delivered through sets of Koss D/GLQ stereo headphones to the subject and the experimenter. The subject was provided with a button, which when pressed four times, triggered a 12-volt battery-operated switch which terminated but could not instigate the aversive tone. The experimenter had two buttons, one to instigate the tone and one to deactivate the subject's button so the subject could not terminate the tone. The experimenter also had a three-position switch with which to activate the green or red light on the subject's button-press base. Sony ECM-18 electric condenser microphones were provided to both the experimenter and the subject.

Conformity test task. The test of conformity was a click-counting task presented over the subject's and experimenter's headphones by an AKAI GXC-30D stereo cassette tape recorder possessing a Dolby system. The clicks had been recorded on tape from a presettable-rate pulse generator constructed specifically for this research. Pulses from this generator were routed through a predeterminable decade counter which could be adjusted to allow a certain number of pulses to pass through for amplification on any one trial. The tape presented both the clicks and the fake counts of
three experimental confederates—two males and one female.
The tape recording, aversive tone, output from the subject's microphone to the experimenter's headphones, and output from the experimenter's microphone to the subject's headphones were all routed through a Realistic QTA-790 four-channel stereo amplifier. Sound was heard through both right and left phones of the earphones, without stereo effect.

Helplessness test task. Two tests for helplessness were used. One was four parallel forms of a letter/number coding task now being used with initial success in helplessness studies (Kennelly, 1977). Each task consisted of 10 practice items, and 115 test items, each composed of a single letter. The letters B, F, H, K, L, and 0 were used in 12 items; letters C, E, and J in 13 items; and the letter P in 14 items. No letter appeared consecutively in adjacent items. Each item required that a number 1-10 be chosen from a coding key at the top of the test protocol and to be written in an empty square beneath that test item's letter. On all parallel forms, the order of occurrence of the letters across the 125 items was the same, but the coding key was different for each form—that is, the number to be matched with a certain letter was different on each test form.

The other test of helplessness was a series of 20 5-letter anagrams used by Benson and Kennelly (1976) and similar to those used by Hiroto and Seligman (1975). All anagrams had the same pattern to their letters, which was
3-4-2-5-1. For example, BLOEN becomes NOBLE and BOARL becomes LABOR when their letters are arranged 1-2-3-4-5. Each anagram was presented in 1/4 inch (.635 cm) letters on a 5 X 8 inch (12.7 X 20.32 cm) unlined index card contained in a three-ring binder.

Rooms and equipment placement. Placed on a table in the subject's room were the button-pressing apparatus, the subject's microphone, earphones, and a card which read "Your code letter is D." Wires leading from this room (through the hall and under the door to the experimenter's room) could be seen by the subject—as well as additional identical dummy wires leading from the experimenter's room to a third room, and continuing to a fourth room. The experimenter's room contained the pulse generator, presettable decade counter, battery, tape recorder, audiogenerator, control panel for controlling the aversive tone and lights, the stereo amplifier, microphone, and headphones. A Century Mark IV cassette tape player was located in an adjacent room to provide simulation of the presence of another subject.

Procedure

Subjects were assigned to conditions on the basis of their order of appearance in the laboratory. Conditions were run according to a randomized block running roster, subject to one constraint. Of every three subjects, one was run in each of three noise conditions—controllable, uncontrollable, and no-training. The one constraint on this
procedure was that the subject assigned to the controllable-noise group was run prior to the subject assigned to the uncontrollable-noise group in every triad of subjects. This constraint on randomness was allowed in order that the controllable-noise and uncontrollable-noise groups could be yoked with regard to the duration and time of onset and offset of the aversive loud noises.

Upon arrival at the designated location, the subject was seated and he/she was told that the experimenter must leave to finish this phase of the experiment with another subject before returning. The experimenter stepped into an adjacent cubicle, read instructions for the pretreatment letter/number coding task so the experimental subject could hear them, allowing time for the simulated subject to respond. The experimenter then returned to the experimental subject and administered the letter/number coding task, with the same instructions as given to the simulated subject (see Appendix A).

The stopwatch was started when the experimenter said "begin" and the subject was stopped at the end of 105 seconds. The experimenter then simulated making special adjustments to the subject's headphone volume controls. The subject was told to please leave the headphones in place and that he/she would soon hear further instructions through them. The subject was told that the experimenter must leave one moment to make sure "the other experimenter has finished
with his two subjects." The experimenter then left the room and turned on the cassette tape player which provided 120 seconds of subtle noise such as foot-shuffling, throat-clearing, and pencil-rolling--during which the experimenter stepped into the hall for 90 seconds of this time, shutting the door loudly behind him. Previous pilot investigation in this procedure revealed that the earphones adequately muffled sound so the credibility of the simulation was not in question.

The experimenter then returned to his control room, turned on the equipment, and read the following instructions for the training phase through his microphone to the subject's headphones:

All right, we are about to begin. Now this study investigates aspects of ability and performance in response to auditory stimuli; that is, it studies one's reaction to sound. The results will be used in developing a program to train aviators to tune radio frequencies identified by morse code. It is important that all of your remain silent until requested to speak.

The instructions for the controllable-noise and the uncontrollable-noise groups were continued with a modification and combination of instructions from Miller and Seligman (1975) and Hiroto (1974). These instructions were omitted for the no-training control group:
Listen to these instructions carefully. I'm not allowed to give you any additional information or answer any questions at this time. From time to time a tone will come on for a while. This tone has been judged as moderately unpleasant and you will not like it, but it is in no way intolerable or the least bit damaging to your eardrums. Here is a 3-second sample. (The tone sounds for 3 seconds.) From now on, when the tone comes on there is something each of you can do to stop the tone in your particular earphones. The amount of unpleasantness you receive is dependent on your behavior. You have two lights located on the base in front of you. If the left-hand red light comes on when the noise stops, you have not stopped the noise yourself, but rather, it has been stopped automatically according to a predetermined schedule. If the right-hand green light comes on when the noise stops, then you have just made the correct response and you yourself have stopped the noise before it was stopped automatically. Taking the earphones off or dismantling the apparatus in any way are not acceptable ways of stopping the tone. Now get ready and let's begin. (Aversive tone sounds.)
The aversive tone was presented for 50 trials. On trials 11 through 50 for the controllable noise group, pressing the button four times prior to 5 seconds of noise terminated the tone immediately, and the experimenter turned the green light on for 5 seconds. If the subject did not press the button four times prior to 5 seconds of tone, the tone was terminated by the experimenter at the end of 5 seconds, and the red light was turned on for 5 seconds. For the uncontrollable-noise subject, the override switch was activated and the subject's button was rendered useless so he/she could not terminate the tone. The uncontrollable-noise subject was yoked to the controllable-noise subject so that the latter, in effect, controlled the duration of tone presentation for both of them. The yoking procedure was carried out by the experimenter recording the duration of tone presentation on each trial for the controllable-noise subject, and then presenting the same tone durations on the same trials for the next corresponding yoked subject of the uncontrollable-noise group. Whenever the noise was terminated, the red light was always switched on for the uncontrollable-noise subject.

During a pilot study, it was discovered that several subjects never attained the criterion of four button-presses prior to 5 seconds of noise. Therefore, a standardized shaping procedure was initiated for trials 1-10 whereby the noise was terminated contingent upon the subject pressing the button once for one trial, then upon his pressing it
twice for one trial, then three times, then four. Additionally, the noise was on for 7 seconds on any trial on which the subject failed to terminate it. All other procedures and conditions were the same as on trials 11-50.

Following the training phase, conformity testing instructions continued for all subjects, except that the first two following sentences were omitted for the no-training control group:

All right, thank you. I will now give instructions for the next phase of the experiment. I cannot answer questions at this time. Shortly, you will hear a series of rather rapid clicks. You are asked to silently count the clicks. The clicks will be presented at a fast rate requiring that you count in multiples of ten, like this.

The experimenter rhythmically and quickly counted 1-10, immediately counted 1-10 again, and then 1-4. The instructions continued:

That's two tens and four, to which you would report a count of twenty-four. Silently count the clicks yourself and then each of you will be asked in turn, according to your code letter to give your estimation of how many clicks you heard. When your code letter is called, please simply state a number into the microphone in front of you. This will be done a number of
times, so after you have given your count be prepared to count another group of clicks a few seconds after this. Now get ready. Here comes the first group of clicks.

The recorder containing the tape of clicks and confederate judgments was turned on here, and the subject heard the following:

(Twenty-five clicks presented.) "Subject A"

... "Twenty-two." "Subject B" ... "Twenty-two." "Subject C" ... "Twenty-two." "Subject D" ... (8-second pause).

The pause was for the experimental subject to give his/her count, which was recorded before the tape presented the next group of clicks at the end of 8 seconds. This procedure was repeated throughout all trials.

The clicks to be counted were presented at a rate of six clicks per second, which was found in a pilot study to produce maximum doubt on the part of the subject as to whether or not his count was accurate. This was to make the task vague so as to maximize informational social influence as suggested by Campbell (1961) and Worschel and Cooper (1976). The pilot study revealed a range of miscount error of 0 to 6 on any one trial at counting, with the mean miscount being 2.55 numbers away from the true count when subjects counted in multiples of 10, which almost all quickly elected to do.

Then, 18 trials of click-counting were presented, one trial
each for the veridical count numbers 21-38. Count values lower than this were avoided as it was believed that these easier counts might destroy the credibility of the erroneous majority confederate judgments, and extremely high counts were avoided since it was believed that the judgment error of the experimental subject might become so great as to obscure any effect of social influence. The three experimental confederates gave majority counts centering around a modal point which was always less than the veridical count by 3 numbers for veridical counts 21-26, by 5 numbers for veridical counts 27-32, and by 7 numbers for veridical counts 33-38.

Previous studies using click-counting as a conformity measure (Blake & Brehm, 1954; Blake & McConnell, 1953; Olmstead & Blake, 1955) had experimental confederates give unanimously accurate counts on a number of trials to maintain credibility. Unlike these studies (which used a slow enough rate of click presentation so no errors were expected under absence of conformity induction) a deviation of three counts below veridical for the present study (average expected count error 2.55) served as a means of maintaining credibility. The possibility of experimental subjects hearing a majority confederate count higher than their own actual count was minimized by having confederate counts be slightly below the veridical on critical trials rather than agreeing with the veridical. In this way, a consistent direction
could be maintained for the compliance-inducing effects of the conformity task. Those counts where the confederates erred by only three numbers were designated noncritical items and did not figure into statistical computation.

Table 1 presents the trials, veridical numbers, majority errors, and method of confederate presentation. Noncritical count numbers were assigned to the first trial and spaced throughout the remaining trials in a semirandom manner in order to maintain credibility. The first three trials were assigned counting numbers so confederates gave count errors three, five, and seven (in that order) for the first three consecutive trials. The remaining count numbers were randomly assigned to the remaining trials, other than the first three, and those trials where noncritical items were assigned. So the confederates did not appear unrealistically consistent on such a vague task, it was arranged that they deviated slightly from each other in a nonconsistent manner on many trials. However, their counts still clustered together and were just far enough below the veridical counts that a subject should have received a majority judgment less than that of his own.

Following the conformity phase of the experiment, the subject was instructed to remain seated and leave the headset on until someone came to administer the last phase of the experiment. The experimenter then went to the subject's room and in a quiet voice, as if trying to keep other
Table 1
Conformity Task and Confederate Judgment

<table>
<thead>
<tr>
<th>Trial</th>
<th>Veridical Number</th>
<th>Majority Error</th>
<th>Confederate Judgments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
<td>3*</td>
<td>22, 22, 22</td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td>5</td>
<td>24, 24, 25</td>
</tr>
<tr>
<td>3</td>
<td>38</td>
<td>7</td>
<td>31, 30, 31</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
<td>3*</td>
<td>20, 20, 19</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>7</td>
<td>28, 29, 28</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>5</td>
<td>25, 25, 25</td>
</tr>
<tr>
<td>7</td>
<td>36</td>
<td>7</td>
<td>28, 29, 29</td>
</tr>
<tr>
<td>8</td>
<td>28</td>
<td>5</td>
<td>23, 23, 22</td>
</tr>
<tr>
<td>9</td>
<td>21</td>
<td>3*</td>
<td>18, 18, 18</td>
</tr>
<tr>
<td>10</td>
<td>33</td>
<td>7</td>
<td>26, 27, 26</td>
</tr>
<tr>
<td>11</td>
<td>37</td>
<td>7</td>
<td>29, 30, 30</td>
</tr>
<tr>
<td>12</td>
<td>31</td>
<td>5</td>
<td>26, 26, 26</td>
</tr>
<tr>
<td>13</td>
<td>24</td>
<td>3*</td>
<td>22, 21, 21</td>
</tr>
<tr>
<td>14</td>
<td>34</td>
<td>7</td>
<td>27, 28, 27</td>
</tr>
<tr>
<td>15</td>
<td>22</td>
<td>3</td>
<td>19, 19, 18</td>
</tr>
<tr>
<td>16</td>
<td>32</td>
<td>5</td>
<td>27, 28, 27</td>
</tr>
<tr>
<td>17</td>
<td>27</td>
<td>5</td>
<td>21, 22, 22</td>
</tr>
<tr>
<td>18</td>
<td>26</td>
<td>3*</td>
<td>23, 23, 24</td>
</tr>
</tbody>
</table>

*Noncritical items.
subjects from hearing, gave the instructions for helplessness testing by the anagrams. These represented a slight modification of Hiroto and Seligman's (1975) instructions (see Appendix B).

If he/she did not solve an anagram within 90 seconds, the subject was told that he/she had 10 seconds to make a word. If the anagram was not solved within 100 seconds, the solution time was recorded as 100 seconds and the subject was presented with the next anagram. When the subject made a word other than the one from which the anagram was constructed, the time for this response was recorded and the stopwatch was left running. The subject was told that he/she was correct but that there was another word which should be looked for. This item was ended in the same manner as all others. This procedure was done in order to give the subject continued opportunity to discover the pattern of the anagrams.

Following administration of the anagrams, three post-treatment administrations of the letter/number coding task were given (Appendix C). Subjects were then debriefed, thanked, and dismissed.

Results

The means and standard deviations for the subjects' counts across critical items of the click-counting task are presented in Table 2. These means serve as dependent measures of conformity. Analysis of variance of the click-count
measure produces a significant effect, \( F = 11.56, p < .0001 \). Individual comparisons of pairs of means by the Newman-Keuls method indicate that the uncontrollable group is significantly different from both the no-training and controllable-noise groups (both \( p \)'s < .01). Since all experimental confederates deviated with counts below the veridical, then the lower the subject's mean count, the more the conformity. The no-training and controllable-noise groups conform significantly more than the uncontrollable-noise group. The uncontrollable-noise group (with a mean click count of 28.28) appears to conform very little, if at all, as the mean of the veridical clicks for critical items was 29.5. It appears that the experience of uncontrollability results in a suppression of conformity responses.

Table 2

Means and Standard Deviations on Click-Count Task

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controllable-Noise</td>
<td>25.85</td>
<td>1.83</td>
</tr>
<tr>
<td>Uncontrollable-Noise</td>
<td>28.28</td>
<td>1.66</td>
</tr>
<tr>
<td>No-training</td>
<td>26.09</td>
<td>1.33</td>
</tr>
</tbody>
</table>

On the anagrams, three dependent measures of helplessness are analyzed: (a) trials to criterion for anagram solution, the criterion being three consecutive solutions
in less than 15 seconds each, after which no failure to solve occurred; (b) number of failures to solve an anagram within 100 seconds; (c) mean response latency for the 20 anagrams. The number of items completed within the time limit on each of the three posttreatment coding tasks are the dependent measures of helplessness derived from the coding taska.

Means and standard deviations for these six dependent measures and the pretreatment coding task are given in Table 3. Multivariate analysis of covariance using the pretreatment coding task scores as covariate yields a nonsignificant F (p < .98) for the effects of treatments. Thus, no helplessness effects are found.

Discussion

The performance of the uncontrollable-noise subjects is superior to that of the controllable and no-training groups on the click-counting task. Uncontrollable-noise subjects' counts are closer to the veridical, and less conforming to the erroneous counts of the experimental confederates. Thus, the first hypothesis is not confirmed.

One possible explanation of these results is that there is some kind of facilitation of counting ability in terms of increased motivation toward accuracy or paying more attention to the task. In Campbell's (1960) terms, this represents a strengthening of the personal mode of acquiring behavior dispositions so the subject need not rely as heavily on the social mode in arriving at a personally satisfying response.
### Table 3

Means and Standard Deviations for the Helplessness Measures and the Pretreatment Coding

<table>
<thead>
<tr>
<th>Measure</th>
<th>Controllable-Noise</th>
<th>Uncontrollable-Noise</th>
<th>No-Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>59.29</td>
<td>6.05</td>
<td>57.65</td>
</tr>
<tr>
<td>Coding 1</td>
<td>60.41</td>
<td>7.91</td>
<td>58.59</td>
</tr>
<tr>
<td>Coding 2</td>
<td>59.94</td>
<td>7.79</td>
<td>59.65</td>
</tr>
<tr>
<td>Coding 3</td>
<td>59.71</td>
<td>7.65</td>
<td>58.76</td>
</tr>
<tr>
<td>Anagrams</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Failure to Solve</td>
<td>4.47</td>
<td>3.95</td>
<td>4.23</td>
</tr>
<tr>
<td>Latency</td>
<td>31.81</td>
<td>24.71</td>
<td>32.27</td>
</tr>
<tr>
<td>Trials to Criterion</td>
<td>13.76</td>
<td>7.99</td>
<td>13.88</td>
</tr>
</tbody>
</table>
to the task. This would appear most relevant to the informational aspects of social influence as opposed to the normative. Treating personal modes of response acquisition on the click-counting task as one would a test for helplessness effects renders relevant the fact that several studies attempting to demonstrate helplessness instead produce an actual facilitation of performance in subjects receiving uncontrollable events (Roth & Bootzin, 1974; Shaban & Weling, reported in Glass & Singer, 1972; Thornton & Jacobs, 1971). Roth and Bootzin (1974) suggest the possibility of a curvilinear relationship between uncontrollable stimulation and helplessness, commenting that "perhaps an initial reaction to feelings of no control is to behave somewhat assertively in an attempt to gain control, whereas repeated experience with no control leads to passive apathetic behavior" (p. 261). Seligman (1975) suggests an initial state of anxiety which sustains an increased struggle to control which occurs at the onset of uncontrollability, followed by later depression and helplessness.

Roth and Kubal (1975) test Roth and Bootzin's (1974) hypothesis by varying amount of experience with uncontrollable events. They find both facilitation and helplessness, and interpret the results as supporting the hypothesized curvilinear relationship. Klinger (1975) also hypothesizes the curvilinear relationship. He presents evidence of an incentive-disengagement cycle where the organism's first
reactions to uncontrollability are invigoration and aggression, followed by depression and passivity.

The curvilinear relationship appears to be consistent with evidence suggesting that moderate amounts of physiological arousal facilitate performance on problem-solving tasks, while excessive arousal results in performance decrements (Broadhurst, 1959; Hebb, 1955, 1956; Selye, 1956). One might expect physiological arousal to accompany helplessness-inducing tasks which involve aversive stimulation.

Numerous studies (Child, 1954; Montague, 1953; Sarason et al., 1960; Taylor & Spence, 1952) show that anxiety facilitates performance on simple tasks and interferes with performance on complex tasks. Counting clicks might appear to be a simple task, at least in comparison to the more complex tasks of anagrams or discrimination problems.

A theory which predicts facilitation following uncontrollable experience is that of Psychological Reactance Theory (Brehm, 1966). This posits that when an individual's autonomy is threatened by restriction of his freedom, he will behave in an oppositional manner to reassert personal behavioral freedom that has been threatened by some influence attempts. When an individual is pressured to hold a certain opinion, reactance moves that individual to an opposite opinion (Heilman, 1976; Heller, Pallak, & Picek, 1973; Sensenig & Brehm, 1958; Stone, 1973; Wicklund & Brehm, 1968; Worchel & Brehm, 1970). Wortman and Brehm (1975) point out
with regard to the helplessness literature that experience with uncontrollability is freedom-restricting and can lead to psychological reactance. Application of this theory to the present study would imply that subjects are manifesting reactance by making their own independent assessment of click stimulation and refusing to conform to the majority opinion of others.

No reactance or helplessness is demonstrated on the coding and anagrams dependent measures in the present study. There is evidence that allowing a subject prior opportunity to demonstrate his personal freedom will mitigate the need for reactance during a subsequent threat to his freedom (Heilman & Garner, 1975; Helman & Toffler, 1976; Snyder & Wicklund, 1976). To apply reactance theory to the present study, one could argue that the subjects' refusal to conform on the click-counting task provides ample demonstration of autonomy so as to mitigate any need for reactance on the tests of helplessness. Along these lines, Stone (1973) first got reactance, then later conformity, in his experiment.

Alternatively, the insertion of the conformity test task between the helplessness-inducing task and the test task for helplessness may well prevent the demonstration of any subsequent helplessness effects of the button-pressing task. Helplessness effects are sometimes difficult to obtain and the effects are transient (Kennelly, 1978), a fortunate fact for ethical reasons.
The studies mentioned, as a whole, suggest the possibility of a period of facilitation (due to anxiety or reactance) followed by helplessness or sometimes conformity, as in the case of studies of persuasive communication. Relevant to the application of reactance to the present study is the point where reactance shifts to helplessness. Perhaps the greatest objection to applying psychological reactance to the present study is the fact that in other studies helplessness has been produced by the button-pressing task on 30, 45, and 50 trials (Hiroto, 1974; Hiroto & Seligman, 1975; Klein & Seligman, 1976; Miller & Seligman, 1976). This suggests that the number of button-pressing trials in the present experiment should be sufficient for a subject to pass through any possible phase of reactance and into a state of helplessness. This is assuming, of course, that the presentation of the conformity task prior to helplessness testing does not confound any real helplessness effects.

The construct of anger perhaps deserves consideration. Subjects receiving uncontrollable events report feeling more hostile (Krantz et al., 1974; Miller, 1974), more hostile and unfriendly (Roth & Kubal, 1975), and more frustrated (Hiroto & Seligman, 1974; Roth & Bootzin, 1974) than subjects not receiving uncontrollable events. Roth and Bootzin (1974) point out that their subjects might be said to have behaved aggressively, and invoke the frustration-aggression hypothesis as one way to account for the facilitation effects.
Miller and Seligman (1975) suggest that the reversal of a depression effect by inescapable noise in two of their eight subjects might be due to their becoming angry at exposure to inescapable noise. Other investigators attempting to produce depression find anger to occur simultaneously (Atkinson & Polivy, 1976; Hale & Strickland, 1976; Izard, 1972; Strickland et al., 1975). Wortman and Brehm (1975) state, "Reactance Theory leads to the prediction that individuals will react to loss of control by becoming hostile and aggressive toward the agents that are restricting their freedom" (p. 307). Worchel (1974) has made essentially the same statement. Wortman and Brehm (1975) suggest that some performance decrements taken to represent helplessness could just as easily represent psychological reactance where subjects are behaving hostilely or negatively. These considerations raise the question as to whether refusal to conform in the present study could have represented an angry gesture.

Berkowitz (1969) has reviewed pertinent literature and concludes that there is ample evidence to support Miller and Dollard's (1941) frustration-aggression hypothesis. Studies on this hypothesis demonstrate aggression results from procedures similar to those of helplessness-inductions. Frequently, experimenters induce frustration by telling individuals they can or should be able to perform a certain act, and then thwarting their attempts when they try (Davitz, 1952; Horowitz, 1958; Kregarman & Worchel, 1961; Worchel,
Kregarman and Worchel (1961) and Worchel (1974) demonstrate that unexpected frustration results in more aggression than does expected frustration.

Anger might be manifested in a period of facilitation prior to giving up and becoming helpless. Psychoanalytic theory traditionally views depression as resulting from ambivalence surrounding the handling of hostility (Abraham, 1911; Alexander, 1948; Freud, 1917; Rosenfel, 1959). This ambivalence may be reflected in the contradictory findings with regard to aggression in depressives. Some studies show higher levels of aggressive responding by hospitalized depressives (Butler, 1971; Wessman, Ricks, & Tyl, 1960) and nonhospitalized depressives (Deykin, Jacobson, Klerman, & Solomon, 1966; Weissman, Paykel, Siegel, & Klerman, 1971) than by nondepressives. Other studies indicate an inverse relationship between outward display of aggression and depression (Bulatao, 1961; Frey, 1976; Lucchese, 1974; Miller & McManus, 1976). This would appear consistent with articles described in the review section of the present study which point to inconsistencies with regard to conformity in depressives.

The discussion thus far implies that uncontrollable stimulation may give rise to an initial period of facilitation due to anxiety, psychological reactance, frustration, anger, or some combination of these. These possibilities are considered since the performance of the uncontrollable
group is superior—they do not conform, and no behavioral deficit or facilitation is demonstrated by the anagrams or coding tasks. However, as previously mentioned, the button-pressing task is typically effective in producing helplessness.

It might, then, be assumed that the present uncontrollable-noise subjects' performances on the conformity test task is indeed accompanied by helplessness. It is assumed, for the sake of this aspect of the discussion, that helplessness is not demonstrated on the helplessness tasks, simply due to the fact that the helplessness testing was preceded by conformity testing. The conformity task may have attenuated the helplessness effects prior to testing the subjects for helplessness on the anagrams and coding tasks. If this is so, it is possible that the uncontrollable-noise subjects might be helpless during the conformity task, and that helpless individuals are simply not responsive to or concerned with conformity to the opinions of others. In this particular case, this should result in more accurate click-counting which would represent a weakening of the social modes (Campbell, 1961) as opposed to the personal modes and would also appear consonant with the basic tenets of helplessness theory.

It is believed that much conformity is motivated by a desire to avoid rejection and attain various rewards from the group (Allen, 1965; Campbell, 1961; Deutsch & Gerard,
1972; Insko & Schopler, 1972; Nemeth, 1974; Schacter, 1951; Schulman, 1967; Thibaut & Strickland, 1956; Worchel & Cooper, 1976). Schacter (1951) and Emerson (1954) demonstrate experimentally that positive consequences are accorded group members following their responses that match the behavior of fellow members, and rejection or punishment follows deviation. Much conformity is maintained by present contingencies of social reinforcement or a history of such.

Investigators hypothesize that uncontrollable experience leads to the expectation that reinforcement and responding are independent of each other (Seligman, 1975; Seligman, Maier, & Solomon, 1971). Uncontrollable outcomes and depression lead to the perception of reinforcement in skill tasks as more response independent than do controllable outcomes and nondepression (Klein, 1975; Klein & Seligman, 1976; Miller, 1974; Miller & Seligman, 1973, 1976). Subjects receiving uncontrollable stimulation may lose their motivation to initiate responses to control social reinforcers. They may expect conformity behavior and reinforcement to be independent. This is not consistent with the view of depressed individuals as being socially withdrawn, isolated, disinterested, and uncommunicative (Akiskal & McKinney, 1975; Beck, 1967; Grinker et al., 1961; Seligman, 1974, 1975). Although not emphasized by learned helplessness theory, the importance of social reinforcers is attested to by the fact that a majority of behavioral theories of depression

Subjects' resulting performance deficits may represent loss of initiative to control social reinforcers. If this is so, the deficits seen in helplessness experiments should be greater when test tasks involving social reinforcers are utilized. Further research is needed to clarify the inter-relationship of helplessness, depression, and conformity/anticonformity.
Appendix A

Instructions for Letter/Number Coding Task

This is a letter/number coding task. The material for this task is on this form. Look at these boxes (the experimenter points to the key). Notice that each has a letter in the upper part and a number in the lower part. Every letter has a different number. Now look here where the upper boxes have letters but the squares beneath have no numbers (the experimenter points to samples). You are to put in each of these squares the number that should go there, like this (the experimenter points to the key and then the samples). Here is a K, so you would put in this number. Here is an E, so you would put in this number. Here is a J, so you would put in this number.

The experimenter wrote in the first three numbers as demonstration. Then he provided the subject with a pencil and had him/her complete the seven remaining items of the sample. The experimenter pointed to the line separating the samples from the test proper and said:

Now you do it for these letters as far as this line. When the subject finished this, he/she was told:

Now, when I tell you to begin, start here and fill in as many of the squares as you can without skipping any. Ready, begin.
Appendix B
Instructions for Anagrams Test Task

These represent a slight modification of Hiroto and Seligman's (1975) instructions.

I'd like you to solve some anagrams. As you may know, anagrams are words with the letters mixed up. The problem for you is to unscramble the letters so they form a word. As soon as you have found the word, tell me what it is. Now there could be a pattern or principle by which to solve the anagrams, but that's up to you to figure out. I can't answer any questions now, nor can I comment when you tell me the word. Ready? Here's the first one. (The experimenter turned to the first anagram and began the stopwatch.)
Appendix C

Instructions for Posttreatment Letter/Number Coding Task

Now I would like you to try another letter/number coding task. (The experimenter presented the subject with another protocol.) You can start here. (The first item following the practice items.) Ready, begin.

The subject was then given another parallel form of the coding task with the instructions:

I think you can do better on this task. I'd like you to try another letter/number coding task.

Ready, begin.

Then the subject was presented with another parallel form of the coding task with the instructions:

I think you can do even better than that. I'd like you to try one more letter/number coding task. Ready, begin.
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