Performance Deficits Following Failure: Learned Helplessness or Self-Esteem Protection?

Abstract

We report two laboratory experiments which compare two compelling explanations of helplessness deficits following failure: One based on Seligman’s Learned Helplessness Theory (LHT), and the other, on Self-Esteem Protection Theory (SEPT). In both studies, subjects (Study 1: \(N = 40\) pupils from Secondary Schools in Walbrzych, Poland; Study 2: \(N = 45\) students from the University of Bielefeld, Germany) were confronted with either success or failure in a first phase of the experiment. Then, in the second phase of the experiment the subjects had to work on a set of mathematical problems (Study 1) or a set of tasks taken from the Raven’s Progressive Matrices (Study 2) either privately or in public. In both studies failure in the first phase causes performance deficits in the second phase only if the subjects had to solve the test tasks in public. These results were interpreted in line with SEPT and as incompatible with LHT.

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Learned helplessness research has amply documented that repeated uncontrollable failure can lead to performance deficits on subsequent tasks (e.g., Hiroto & Seligman, 1975; Mikulincer, 1986; 1989; Stiensmeier-Pelster & Schürmann, 1990). According to learned helplessness theory (Seligman, 1975; Abramson, Seligman & Teasdale, 1978), the reason for this effect is motivational: Repeated uncontrollable failure causes an expectation of uncontrollability, i.e., the belief that success and failure are independent of one’s actions; this expectation is generalized to subsequent tasks, where it undermines the subjects’ motivation (i.e., their willingness to expend effort); and this withdrawal of effort results in poor performance.

In the attributional reformulation of learned helplessness theory (Abramson et al., 1978), it was further postulated that the generalization of expectations of uncontrollability across time and situations (tasks) depends on the attributions which persons make for their failure. In line with attributional analyses of achieveent motivation (cf. Weiner, 1986), Abramson et al. (1978) proposed that expectations of uncontrollability generalize across time and situations, respectively, only if the failure is attributed to relatively stable and global causes. Although this reformulation constitutes an important modification of the original theory of learned helplessness, it leaves unaffected the basic assumption of that theory that poor performance following repeated failure is due to an expectancy-mediated, motivational deficit. However, this interpretation of performance deficits following failure has been criticized by several authors, and a number of alternative interpretations have been proposed.

Of particular interest in the present context, Frankel and Snyder (1978) suggested that the performance deficits demonstrated in learned helplessness studies may be due to people’s desire to protect or to enhance their self-esteem, by engaging in "attributional egotism", that is, "the tendency to take credit for good outcomes and deny blame for bad ones" (Synder, Stephan & Rosenfield, 1980, p. 91). Of importance to the explanation of learned helplessness deficits is the additional assumption, that apart from actual outcomes attributional egotism may also be stimulated by anticipated ones, provided that they affect self-esteem. According to Frankel and Snyder, failure threatens self-esteem, if, first, it is attributable to the person and, second, if the attribution made is relevant to the person’s self-esteem" (Frankel & Snyder, 1978, p. 1415f). If these conditions are met, the anticipation of failure is assumed to evoke mechanisms to protect self-esteem.

There are several tactics that can be used for this purpose. For example, subjects can withdraw effort from the test, as a result of which later failure need not be attributed to lack of ability - an attribution that undermines their self-esteem - since it can be attributed to lack of effort, a self-esteem protecting cause. Empirical evidence for the use of this tactic was obtained in the studies reported by Frankel and Snyder (1978). Another more active and prospective strategy that can be used to weaken the responsibility link connecting people to their poor results in self-handicapping, that is the creation of a physical or psychological impediment, to which poor performance can be attributed if it occurs (Jones & Berglas, 1978; Smith, Snyder & Handelsmann, 1982).

Yet another strategy to deal with failure consists of the attempt to diminish its relevance for one’s self-esteem by attributing failure to specific instead of global causes. As Mikulincer and Nisan (1988) and Stiensmeier-Pelster and Schürmann (1990) have shown, subjects are concerned about their failure and its implications for their self-esteem most when they attribute their failure to global (Mikulincer & Nisan) or to internal, stable and global (Stiensmeier-Pelster & Schürmann) causes, i.e., when they are not able to reduce the
relevance of failure for their self-esteem. Hence, by changing these attributions, self-esteem can be protected. This tactic is also referred to as excuse-making by Snyder and Higgins (1988). According to these authors, "excuse-making is the motivated process of shifting causal attributions for negative personal outcomes from sources that are relatively more central of the person’s sense of self to sources that are relatively less central, thereby resulting in perceived benefits to the person’s image and sense of control" (Snyder & Higgins, 1988, p. 23). Specifically, effort as the cause of failure is less damaging to one’s self-esteem than lack of ability; and lack of a specific ability is relatively less damaging than the lack of global ability (i.e., intelligence). These reattributions can be achieved, for example, by raising the consensus of failure (i.e., by assuming that failure is also experienced by many other people) or its distinctiveness (i.e., by assuming that failure will not occur in other situations), or by lowering its consistency (assuming that failure will occur only at few other occasions). The belief that others fail in the same task and that one’s failure will not generalize to other situations or circumstances makes it possible to shift the blame for failure from stable and global dispositions to instable and specific circumstances (Snyder et al., 1983). However, people who make excuses must attach some minimal sense of importance to the outcome, because there is no reason to resort to excuse making in the face of failure for unimportant problems. Consequently, denying the importance of intelligence for oneself or discounting the reliability and validity of an intelligence test may serve as yet another strategy to protect self-esteem following failure.

The primary aim of the studies reported in this article was to empirically compare the two described explanations of performance deficits following failure: learned helplessness theory (Abramson et al., 1978; Seligman, 1975) and self-esteem protection theory (Jones & Berglas, 1978; Snyder et al., 1978; Snyder et al., 1983), using a procedure that has so far not been used for this purpose. We reasoned that a critical test of the theories can be conducted by running a learned helplessness experiment in which the subjects had to solve tasks in the second phase of an experiment (the so-called test phase) either anonymously (private condition) or non-anonymously (public condition) after having experienced either success or failure in the first phase of the experiment (the so-called training phase).

The reasoning behind using this procedure was as follows: According to learned helplessness theory, constant failure in the training phase causes a lowered expectation of success regarding the test tasks, which in turn undermines the subject’s motivation to attempt solving these tasks, which in turn causes poor performance. Furthermore, learned helplessness theory gives no reason to expect performance differences in the test phase depending on whether the tasks have to be solved under the private or public condition. In contrast, self-esteem protection theory predicts that it should make a significant difference whether or not the test tasks are solved privately or in public, because there is a stronger tendency to use self-protecting strategies following public than private failure (cf. Frey, 1978, or Greenberg and Pyszczynsky, 1985, for empirical evidence of this assumption). As discussed earlier, one way to protect self-esteem in the face of failure consists of the withdrawal of effort. Thus, according to self-protection theory, the lowered success expectancies in the test phase should cause lowered motivation, and as a consequence poor performance, only then the test tasks have to be solved in public.
Experiment 1

Experimental Design and Hypotheses

This study employed a 2 (Outcome: success vs. failure) x 2 (Anonymity: yes/private vs. no/public) design. Outcome in the first phase of the experiment (the training phase) was manipulated by asking subjects to work on four mathematical problems that were either easy to solve (success) or unsolvable (failure). In the second phase of the experiment (the test phase), subjects were presented with four other rather difficult, but solvable mathematical problems. The second factor, Anonymity, was manipulated by informing subjects that the experimenter’s main interest was on the results of the individual subject, and that these results would also be available to the other subjects and the end of the experiment (public condition), versus that the experimenter was only interested in the group performance and that individual results would not be available to the experimenter or to any other person (private condition). Thus, in this condition no feedback upon individual results was available, but only feedback upon group results. The dependent variable was the average solution time for the puzzles presented in the test phase and the amount of effort subjects spent on that puzzles.

We expected that, if self-esteem protection theory is correct, after failure in the training phase performance deficits in the test phase would occur only if the subjects had to solve the problems in public, i.e., when they believe their performance to be open to inspections by the experimenter and by the other subjects.

Method

Subjects

40 subjects (24 females and 16 males with a mean age of 17.2 years) from Secondary Schools in Walbrzych, Poland, participated on a volunteer basis. Subjects had no previous experience with psychological experiments and did not receive financial rewards or class credits for participation. They were randomly assigned to one of the four experimental groups.

Procedure

The experimental procedure was adopted from Frankel and Snyder (1978). At the beginning of the experiment, the subjects were informed that the primary aim of the study was to construct intelligence scales for (use in) secondary schools. Subjects were then presented with the training phase tasks, which consisted of four mathematical problems. In the success condition, the problems were easy, whereas in the failure condition they were unsolvable (subjects were of course ignorant of this manipulation). Subjects were tested individually and communication between subjects during the experiment was prohibited.

At the end of the time allotted to the training phase, the response sheets were collected by the experimenter, and the subjects were informed that they would have to solve four additional mathematical problems. At this point, the second factor, Anonymity, was manipulated. Subjects in the private condition were told that "on the basis of your
performance on the first set of mathematical problems, you have been assigned to a group of subjects characterized by the same style of task-solving and the same level of intelligence. From now on, only group results will be of interest. Thus, your performance will remain anonymous". In the public condition the instruction stressed that the experimenter was interested in individual results and that at the end of the experiment these would also be available to other subjects as well.

In the test phase, all subjects worked on the same set of difficult mathematical problems with a maximum of 15 min. allotted to each problem. The dependent variable was the actual solution time (if a task was not solved, the maximum allotted time was recorded). This time was based on pilot testing in comparable situations, in which the average solution time and task difficulties were determined.

To check the effectiveness of the outcome manipulation, the subjects were asked, following the completion of the tasks, to evaluate their performance on the first (training phase) problems. Answers had to be given on a scale ranging from (1) "Thought I performed poorly" to (7) "Thought I performed very well". To test the hypotheses concerning effort withdrawal, the subjects were additionally asked to rate the degree of effort they spent on the test task. The question asked was: "Do you think you would have done better if you had tried harder?", and answers had to be given on a scale ranging from (1) "not at all better" to "very much better" (4).

Upon completion of the experiment, the subjects were informed of the true purpose of the study, questions they had were answered, and the experimenter apologized for the original misinformation about the study's goals.

Results

The results were analyzed using a 2 (Outcome: Success/Failure in the trainings phase) x 2 (Anonymity: Private/Public task solving in the test phase) analysis of variance.

Manipulation Check

Subjects in the failure condition rated their performance on the training tasks much lower (M = 1.2) than those in the success condition (M = 6.40); F (1,36) = 643.8, p < .001. Hence, the Outcome manipulation was effective.

Performance on the Test Tasks

The ANOVA showed a main effect for Outcome, F(1,36) = 4.7, p < .05, as well as an interaction effect between Outcome and Anonymity, F(1,36) = 6.2, p < .02. As can be seen from Figure 1, failure compared to success in the training tasks caused lower performance (longer solution time) when subjects had to solve the test tasks in public (t(18) = 3.3, p < .005), but not when the test tasks had to be solved privately (t(18) < 1).
Figure 1: Mean solution time in the anonymous and public testing condition after failure and success in the first phase of the experiment

Effort Ratings

The ANOVA on the effort ratings revealed only a significant interaction effect, $F(1.36) = 5.8, \ p < .05$, which was due to the fact that subjects in the failure/public condition compared to those in the success/public condition judged the anticipated performance improvement, given more effort, as higher ($M = 2.7$ vs. $M = 1.6$), and hence presumably the actual level of expended effort as lower ($t(18) = 2.6, \ p < .02$). In contrast, there was no difference between the failure and the success condition given the subjects, who had to solve the test tasks privately ($M = 1.8$ vs. $M = 1.5; \ t(18) < 1$).

Discussion

The purpose of Study 1 was to compare two compelling explanations of helplessness deficits following uncontrollable failure: One based on learned helplessness theory, and the other, on self-esteem protection theory. The findings of the study are in line with self-esteem protection theory and contradict learned helplessness theory.

As predicted by self-esteem theory, subjects withdrew effort (cf. the effort ratings) and performed poorly after experience with unsolvable problems only when they believed that their test task performance would be publically available. In contrast, when test tasks had to be solved privately (i.e., when individual results were not available to the public and only group results were of interest) failure on the training tasks did not result in motivational deficits and poor performance on the test tasks. That is, rather than withdrawing effort
in the test phase because of reduced success expectancies, the subjects in the private condition were apparently motivated to solve the problems in the test phase and as a consequence performed well.

However, the findings of Study 1 do not allow one to draw conclusions about strategies of self-esteem protection other than effort withdrawal. Thus, subjects could also have attempted to raise the consensus and the distinctiveness and to lower the consistency of their failure, resulting in more external, unstable and specific attributions. Furthermore, they could have tried to devalue the importance of intelligence or to discredited reliability and validity of the test as a measure of intelligence. To examine the use of self-protective strategies other than effort withdrawal, as well as to provide a conceptual replication of the first experiment, a second study was constructed.

Experiment 2

Experimental Design and Hypothesis

The design of Study 2 was again a 2 (Outcome on the training tasks: Success versus failure) x 2 (Anonymity: private versus public testing) factorial. Outcome was manipulated in the training phase by presenting the subjects with six unsolvable and two solvable (failure condition) or with eight solvable tasks (success condition). The solvable tasks were taken from the Raven Progressive Matrices Test (Raven, 1974/1975), whereas the unsolvable tasks were constructed by manipulating the solutions of the tasks. In the test phase of the experiment, the subjects worked on 20 more tasks from the Raven Test either privately or in public, with Anonymity being manipulated in the same way as in the first study. The dependent variables were performance on the test tasks (number of tasks solved), the level of self-rated effort expended on the test tasks, causal attributions for the performance on the training tasks and the importance subjects attached to intelligence.

If the egotism explanation of learned helplessness deficits is correct, one should expect that failure on the training tasks in the public, as compared to the private condition is attributed more strongly to external, unstable and specific causes. Furthermore, one may expect that in the public condition, intelligence is judged as being less important, and the tasks are judged as being less valid measures of intelligence than in the private condition. Finally, regarding effort and performance the same predictions were made as in Study 1. That is, we expected that failure in the training phase would cause lowered effort and poorer performance only when the test tasks were to be solved in public.

Method

Subjects

45 students (31 female, median age 25 years) from the University of Bielefeld, Germany, volunteered to participate in exchange of DM 7. The subjects were randomly assigned to one of the four experimental conditions.
Procedure

The experimental procedure was analogous to that of the first study. At the beginning of the experiment, subjects were informed that the primary aim of the study was to measure students' intelligence. Therefore, they would work on a well-known, highly valid intelligence test, Raven's Advanced Progressive Matrices. To manipulate our first factor Outcome, subjects were told, the first eight minutes would be spent working on eight practice items to form an impression of the nature of the tasks and their difficulty. Subjects in the success condition (N = 22) were given eight easy tasks, whereas those in the failure condition (N = 23) received six unsolvable and two solvable tasks. The subjects worked on the tasks in small groups of four to six persons, with each group comprises some success and some failure subjects. Furthermore, in order to strengthen the experience of failure for the subjects in the failure condition, after four minutes the experimenter asked the subjects who had finished the practice tasks to leave the room for a short break. In each case, some subjects (all from the success condition) left the room.

After the time allotted to the practice items had elapsed, all subjects were asked to return to the experimental room. At this point, the second factor Anonymity was manipulated. Subjects in the private condition were informed: "From now you will form a team. Everyone will solve the tasks anonymously and afterwards the individual results will be combined into an average team result. You got 10 minutes to solve 20 tasks." In the public condition, in contrast, the subjects were told "Now your intelligence will be measured. Please write your name, age, and major subject on your answer sheet. You got 10 minutes to solve 20 tasks."

All subjects then were presented with the same set of 20 tasks, taken from Raven's Advanced Progressive Matrices Set II.

Following the tasks, the subjects completed a brief questionnaire. To check the effectiveness of the outcome manipulation, the subjects were asked to evaluate their performance on the practice items, using a 7-point scale ranging from (1) "Thought I succeeded" to (7) "Thought I failed", and to indicate how many of the practice items (in percent) they believed to have correctly solved. Next, the subjects were asked to give an attribution for their performance. A measurement procedure analogous to that used in the Attributional Style Questionnaire (ASQ, Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982) was used for this purpose. Subjects first stated the main cause for their outcome at the practice items. Next, they rated this cause with regard to its internality ("Is the cause for your performance to be found more in yourself or more in other persons or circumstances?"); stability ("Will the cause for your performance remain important if you have to work on tasks from the Raven Intelligence Test in the future?"); and globality ("Does the cause only influence your performance when working on the Raven Intelligence Test, or does it also influence your performance when working on other tasks, or when coping with problems?"). All responses were given on 7-point-scales, with low values standing for an external, unstable and specific attribution.

To obtain information regarding the level of effort that the subjects spent on the test tasks, they were asked whether they thought they would have done better if they had tried harder (cf. Study 1), as well as how hard they had tried. These questions had to be answered using seven-point rating scales ranging from (1) "not at all" to (7) "very much better", and from (1) "hard" to (7) "not at all hard". Finally, the subjects were asked how much importance they attached to being an intelligent person, and how well in their opinion
the tasks used in the experiment were suited to measure intelligence. These latter questions were answered on seven-point scales ranging from (1) "completely unimportant" to (7) "very important", and from (1) "not suited" to (7) "quite suited", respectively.

Following the experiment, the subjects were completely debriefed, and the experimenter apologized for having misinformed them about some aspects of the study.

**Results**

**Manipulation Check**

Compared to the subjects in the success condition, those in the failure condition rated their performance on the practice items as lower, $M = 4.30$ versus $M = 2.8$, $F(1,41) = 16.8$, $p < .001$; and believed to have solved a lower percentage of the tasks, $M = 40.7\%$ versus $M = 81.4\%$, $F(1,41) = 65.1$, $p < .001$. Hence, the outcome manipulation was effective.

**Performance on the Test Tasks**

The ANOVA on number of items solved yielded the expected significant interaction between Outcome and Anonymity, $F(1,41) = 4.3$, $p < .05$. In line with our hypotheses and the results of Study 1, Figure 2 shows that failure compared to success caused lower performance when subjects had to solve the test tasks in public ($t(20) = 2.1$, $p < .05$). In contrast, failure compared to success lead to a slightly, but not significant increase in performance when test tasks had to be solved privately ($t(21) < 1$).

![Figure 2: Mean number of tasks solved in the anonymous and public testing condition after failure and success in the first phase of the experiment.](image-url)
**Questionnaire Results**

An examination of the performance attributions showed the same pattern of results concerning the stability and globality ratings. Thus, a combined generality score was calculated (generality = stability + globality). Analyses on this measure showed the expected interaction between Outcome and Anonymity ($F(41) = 4.4$, $p < .05$). In line with our hypotheses subjects in the public condition attributed failure more to instable/specific causes ($M = 9.5$) than success ($M = 6.3$, $t(20) = 2.4$, $p < .05$). In the private condition there was no significant difference between success and failure attributions ($M = 7.8$ vs. $M = 6.7$; $t(20) < 1$). No significant effects were obtained for locus.

Regarding the importance of intelligence ratings (again combined value of the two questions because both questions showed the same pattern of results) the ANOVA revealed a significant main effect for Outcome, $F(1,41) = 9.2$, $p < .005$, which was due to the fact that subjects in the failure condition rated intelligence as less important for them, and the tasks used as less valid than those in the success condition. Although the Outcome by Anonymity interaction was not significant further analyses showed in line with our hypotheses that the outcome effect holds for the public (failure: $M = 9.8$ vs. success: $M = 7.9$; $t(20) = 2.6$, $p < .02$), but not for the private condition (failure: $M = 9.2$ vs. success: $M = 8.3$; $t(21) = 1.6$).

No statistically significant main or interaction effects were obtained for the ratings of the effort that the subjects claimed to have expended on the test tasks.

**Discussion**

The purpose of the second experiment was to replicate the results of Study 1 and to investigate the occurrence of self-protecting strategies following failure other than effort withdrawal. All in all, the findings of the second experiment confirmed the self-esteem protection theory explanation of performance deficits following failure. In particular, the pattern of results for performance obtained in Study 2 was quite similar to that obtained in the first experiment, i.e. performance deficits following failure occurred only when the subjects believed that the performance on the test tasks would be made public. Although, in contrast to the first experiment, there were no effects of Outcome and Anonymity on reported effort, in line with self-esteem protection theory, there was evidence that subjects also employed self-protecting strategies. In particular, subjects attributed failure more to specific causes than success; and since there were no effects for locus, one may probably interpret this finding as indicating that the subjects attributed their failure more to lack of a specific ability. Furthermore, failure subjects reduced the importance of intelligence and judged the test to be an invalid measure of intelligence. These latter self-protecting strategies were used particularly by failure subjects in the public condition. This is in line with self-esteem protection theory, because according to this theory, especially these subjects felt the presence of a self-esteem threat, but not the subjects in the failure/private condition.
Concluding remarks

The results of the two experiments reported in this article were in line with the hypothesis that performance deficits following failure are caused by effort withdrawal, which again is due to the striving to maintain and/or enhance self-esteem. In addition, some evidence was obtained that other strategies than effort withdrawal are also used to cope with failure, specifically, reattributions (preferring specific causes to global ones), discounting the importance of intelligence, and discounting the validity of the intelligence test (cf. Frankel & Snyder, 1978; Snyder et al., 1983). In sum, the results of our experiments support the self-esteem protection theory explanation of performance deficits following failure and put into doubt the learned helplessness theory explanation proposed by Seligman and his coworkers (Seligman, 1975; Abramson, Seligman & Teasdale, 1978).

Literatur


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