EXPECTANCIES FOR FUTURE SUCCESS AS A FUNCTION OF LOCUS OF CONTROL, TASK STRUCTURE AND OUTCOME

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ABSTRACT

The present study investigated the relationship between personality and task dimensions of perceived locus of control. Male alcoholic subjects were administered Rotter's I-E scale and participated in both chance and skill tasks with expectancies for future success used as dependent variables. A series of complex interactions were obtained in which internal and external subjects provided differential levels of expectancy shifts as a function of both the nature of the task (chance or skill) and their success or failure on each. These interaction effects were discussed in terms of differential levels of motivation for internals and externals within chance and skill tasks.

INTRODUCTION

Recent research on the learned helplessness model of depression (Miller & Seligman, 1973) has led to a resurgence of interest in the use of experimental tasks that indirectly assess the perception of reinforcement. Such tasks, in which the subjects' stated expectancy for future success serves as the dependent variable, can be categorized as skill (internal attribution) or chance (external attribution) based upon the extent to which their outcomes are perceived to be response-dependent or response-independent (Feather, 1968; Phares, 1976; Rotter, Liverant & Crowne, 1961; Shepel & James, 1973). According to Phares (1976), the skill and chance tasks employed in such studies represent situational analogues of the locus of control personality variables. It is assumed that verbalized expectancies for future success are affected differentially by reinforcement on previous trials across the chance and skill task dimensions.

Phares (1967) and Rotter, et al., (1961) hypothesized that within the skill tasks the perception of response-outcome dependence would produce a generalization from past performance to expectations for future performance. Thus, it
was anticipated that expectancies for success should show noticeable decreases following failure and increases following success on the previous trial. Conversely within the chance task, the outcome is perceived to be response-independent and should therefore lead to minimal changes in expectancies following either success or failure. A number of studies have provided empirical support for these contentions (Miller & Seligman, 1973; Phares, 1957; Rotter, et al., 1961). Miller and Seligman (1973), for example, found that nondepressed subjects evidenced a greater shift in expectancy following initial success, had a higher level of expected success over ten trials, and made a greater magnitude of appropriate expectancy shifts on tasks perceived as involving personal skill in contrast to chance tasks.

A number of authors have contended that there are often complex interactions between the personality and task dimensions of locus of control (Feather, 1968; Shepel & James, 1973). Rotter (1966) indicated that an external individual, having a relatively stable perception that one exerts little or no behavioral control over the outcome of an event, whether skill or chance in nature, should exhibit minimal shifts in expectancy statements. External individuals theoretically should be also more prone to make a "gambler's fallacy" in which the occurrence of negative reinforcers (failure) leads to an increased expectancy of future success while positive reinforcers (success) lead to a decrease in such expectancies. Miller and Seligman (1973) found nonsignificant trends in these predicted directions, thus providing only tentative support for the overriding influence of the locus of control variable. Furthermore, there was no evidence to directly assess the nature of the locus of control by task interaction.

The purpose of the present study was to further investigate the relationship between the task and personality dimensions of locus of control. It was expected, based upon previous suggestions, that these two variables would interact in a complex manner. Another concern, frequently neglected in prior research, was the independent as well as interactive influence of the outcome valence, or the success or failure on a particular trial of a task. It was hypothesized that internal and external subjects would respond differentially to success and failure; this response tendency was expected to be mediated further by the subject's perception of the degree of personal skill involved in the task.

METHOD

SUBJECTS

The sample consisted of 62 male veterans participating in an alcoholism rehabilitation program. Subjects had a mean educational level of 12.68 years (S.D. = 2.49) and a mean age of 43.55 (S.D. = 10.64). Subjects were tested approximately 3 weeks following admission to treatment; none showed cognitive or physical residuals of acute intoxication. The subjects represent a sample of convenience. However, it should be noted that the relationships between locus of control and other personality traits and behaviors among alcoholics closely parallel those found among nonalcoholic and nonclinical subjects (Rohsenow & O'Leary, 1978a, 1978b).

MATERIALS

Level of perceived locus of control was assessed by Rotter's (1966) I-E scale.
Higher scores on the I-E scale represent a more external locus of control, indicating a generalized expectancy of response-outcome independence. The chance and skill tasks employed, as well as the instructional set, were identical to those described by Miller and Seligman (1973). The chance task consisted of the projection of an X or O onto a screen. The experimenter could covertly control which of these slides would be presented by moving the slide tray either forward or backward. A trial on this task consisted of the presentation of a block of five slides. The subject's prediction of the correct slide on 4 or 5 presentations per trial constituted a successful trial. The skill task consisted of a movable platform which subjects were to raise within a vertical frame by pulling on an attached string. Raising the platform to a specified point near the top of the apparatus without letting a ½ inch steel ball fall off the platform constituted a successful trial. The experimenter could covertly control the success and failure of a trial by use of a hidden silent switch, the activation of which disengaged an electromagnet inserted in the base of the platform.

PROCEDURE

Subjects initially completed the I-E scale. They were then administered the chance and skill tasks in a counterbalanced order. Before each task the instructions taken from Miller and Seligman (1973) explaining the particular task and the expectancy statements were read. Prior to each trial subjects were asked to verbally rate their expected probability of success on the next trial on a scale from 0 (certain failure) to 10 (certain success); these estimates were recorded by the experimenter. Success and failure on both tasks were controlled by the experimenter to insure that all subjects had the same schedule of reinforcement. Subjects were given ten trials on each task, with an equal number of positive and negative outcomes. Trials 1 and 10 on each task were selected in advance as success trials. The overall schedule of success (+) and failure (-) was + - + - + - + - + +; this pattern of reinforcement was constant for all subjects across both tasks. Following the completion of the tasks the subjects completed a postexperimental reaction questionnaire which included manipulation check items. After the active phase of data collection subjects were debriefed by written explanations of the study and the deception involved.

The subjects were divided into two groups based upon a median split of the I-E score distribution. The sample had an overall mean of 6.47 (S.D. = 3.98) on the I-E scale. This value is in the range of moderate internality, and is comparable to that found in previous research which demonstrated a lack of difference between the locus of control of alcoholics and closely matched nonalcoholics (Donovan and O'Leary, 1975; Donovan, Radford, Chaney & O'Leary, 1977; Rohsenow & O'Leary, 1978a). The Internal group (I-E < 6; n = 30) had a mean of 3.13; the mean value of the External group (I-E > 7; n = 32) was 9.59.

The dependent variables included measures of both the number and magnitude of shifts in expectancy for success following success and failure on both the chance and skill tasks. These expectancy variables were divided further into two categories based upon their congruence to the normative direction of expectancy shifts following success and failure. The first category was defined as appropriate shifts. This variable consists of increases in expectancies
following success and decreases following failure and is analogous to the total expectancy shift employed by Miller and Seligman (1973). The second category, inappropriate shifts, consists of increases in expectancies following negative outcomes and decreases following positive outcomes; this variable is analogous to the "gambler's fallacy" commonly found in chance tasks and to characterize individuals with a response-outcome-independent perception (Phares, 1976).

The expectancy shift data were analyzed by a series of 2x2x2 analyses of variance with repeated measures across two variables. The between groups variable was locus of control (Internal or External). The repeated variables represented the task dimension (chance or skill task) and the outcome valence (success or failure trials). The manipulation check variables were analyzed by a 2 (1-E) X 2 (chance or skill tasks) ANOVA with repeated measures across the task dimension.

Table 1
Mean Expectancy Shifts for Internals and Externals

<table>
<thead>
<tr>
<th>Expectancy Shift Variables</th>
<th>Chance</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internal</td>
<td>External</td>
</tr>
<tr>
<td>Failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Inappropriate</td>
<td>.37</td>
<td>.97</td>
</tr>
<tr>
<td>Value of Inappropriate</td>
<td>.53</td>
<td>1.50</td>
</tr>
<tr>
<td>No. of Appropriate</td>
<td>1.07</td>
<td>1.19</td>
</tr>
<tr>
<td>Value of Appropriate</td>
<td>1.57</td>
<td>1.94</td>
</tr>
<tr>
<td>Success</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Inappropriate</td>
<td>.30</td>
<td>.44</td>
</tr>
<tr>
<td>Value of Inappropriate</td>
<td>.43</td>
<td>1.09</td>
</tr>
<tr>
<td>No. of Appropriate</td>
<td>1.37</td>
<td>1.47</td>
</tr>
<tr>
<td>Value of Appropriate</td>
<td>1.97</td>
<td>2.31</td>
</tr>
</tbody>
</table>

RESULTS

The results of the manipulation checks indicated that the procedure was effective in inducing differential perceptions across tasks. Regardless of the level of perceived locus of control, subjects rated the skill task as requiring more personal ability relative to good luck than they did the chance task (Mean chance = 7.12, Mean skill = 4.43, F = 39.2, p < .001). Also, in response to a question concerning the probability of success on similar tasks in the future, subjects rated their expectations for future success significantly higher on the skill task than on the chance task (Mean chance = 6.26, Mean skill = 7.23, F = 14.8, p < .001).
Table 2 presents the F-ratios for the main and interactive effects of the 2 x 2 x 2 ANOVA. As can be seen from these values there were no differences in stated expectancies between internal and external subjects (p > .10). Similarly, individual differences in perceived locus of control did not lead to differential expectancies following success or failure as noted by the nonsignificant I-E x Valence interaction effects. However, the valence of the outcome was found to be significant in all cases except for the magnitude or value of inappropriate shifts. Collapsing across the Task and I-E dimensions, more inappropriate shifts were found following failure than success; conversely, a larger number of appropriate shifts, as well as a larger value, were made following success than failure. The Task dimension resulted in significant differences only for the appropriate expectancy shift variables. A larger number and value of appropriate shifts were made in the skill task than in the chance task. Thus, the perception of response-outcome dependence in the skill task is associated with appropriate changes in expectancies for success.

The remaining interaction effects affirm the previously noted complexity in the relationship between the personality and task dimensions of locus of control. Significant I-E Task interaction effects were found on measures of inappropriate expectancy shifts but not on the appropriate shift data. This interaction in both the number and value of inappropriate shifts is accounted for by differential performances of internals and externals in the chance and skill tasks. In the chance task externals made more frequent and larger inappropriate shifts than internals. Also, within groups, externals made more frequent and larger shifts in the chance than in the skill condition while the relationship was reversed for internals. This pattern of responding was further moderated by the valence of the outcome as indicated by the significant I-E x Task x Valence interactions found for both the number and value of inappropriate shifts. With respect to the number of such shifts within the chance task,
internals' response levels remained relatively stable while that of externals were significantly influenced by the outcome valence. In the chance task externals made significantly more inappropriate shifts following failure than following success, with the number in this latter condition equal to that of the internals. The pattern was again reversed in the skill situation. While the level of responding of externals remained relatively stable across differential outcome conditions, internals in the skill condition made significantly more inappropriate shifts following failure than following success. A similar pattern of interaction was obtained on the value of inappropriate shifts.

The number and value of appropriate expectancy shifts were found to be influenced by the chance-skill and success-failure conditions, as indicated by the significant Task x Valence interactions. For both measures, within the chance condition the level of appropriate responding was only minimally affected by the outcome valence. However, in the skill condition subjects made significantly more appropriate shifts of a larger magnitude following success than following failure. The level of appropriate responses following failure was equivalent across tasks while it was significantly higher following success in the skill task than in the chance task.

**DISCUSSION**

The present results tend to support prior findings concerning differential shifts in appropriate expectancy statements across skill and chance tasks. This relationship is further moderated by the success or failure one experiences on such tasks. Individuals tend to show fewer changes of smaller magnitude in measures of appropriate expectancies for success in situations that are perceived as response-outcome independent (chance). While the level of change is equivalent across success and failure in the chance task, significantly more frequent and larger shifts are made following success in the skill task than after failure. Thus, similar to Phares' (1976) contention, there appears to be a greater degree of generalization of learning, as expressed by more accurate expectancies, in tasks in which the subject perceives himself to control the outcome. However, it further appears that the individual learns or generalizes less from such a situation when his efforts lead to failure rather than to success.

The findings with respect to appropriate expectancy shifts do not support the hypotheses derived from the personality dimension of locus of control. Internal and external subjects were not found to differ on these measures. It may be, as Phares (1976) suggested, that the explicitness of cues in such situations, leading to the perception of skill or chance operation, may minimize the influence of the I-E personality dimension.

Such contentions, however, are not able to account for the interactions between the I-E, the task dimension, and the outcome valence obtained on measures of inappropriate expectancy shifts. Phares (1957) previously found that such a "gambler's fallacy" was more frequent in chance than skill tasks. Rotter and Murley (1965) also found a trend toward a greater incidence of such inappropriate shifts among externals. The lack of significant main effects for I-E and task fail to support these findings. However, these two factors do interact significantly. Externals tend to make more frequent and larger inappropriate shifts than internals in the chance task while this pattern is reversed in the skill
condition. This relationship is further moderated by the outcome valence. Success in both tasks did not differentially affect subjects. However, failure in the chance task, relative to the skill task, accounted for the increased level of inappropriate shifts for the externals. Conversely, failure in the skill task, relative to the chance task, prompted more inappropriate responding among internals.

The complexity of these interactions might be explained by differential levels of motivation of internals and externals within the different task situations. Phares (1976), in reviewing the motivational correlates of locus of control, indicated that internals tend to manifest greater concern and attach more importance to success in skill situations, while externals are more motivated in chance situations. Failure in such tasks would thus lead to an increased effort, as well as expectancy, to succeed. Thus, it may be, at least within the present sample, that the increased motivation to do well following failure in tasks congruent with one’s locus of control beliefs leads to an unrealistic expectation for success and thus induces the obtained “ gambler’s fallacy.” Further research, which elaborates our understanding of the interaction of task saliency and control orientation, seems warranted.

REFERENCES
