PERCEIVED CONTINGENCY OF PARENTAL REINFORCEMENTS, DEPRESSION, AND LOCUS OF CONTROL

THESIS

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By

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To determine the relationships among perceived contingency of parental reinforcements, depression, and locus of control, 66 male and 54 female undergraduate university students completed questionnaire measures. Significant relationships were obtained between depression and locus of control for both sexes. Also, subjects of both sexes who described their parents as having administered rewards and punishments more noncontingently tended to describe themselves as more external and as more depressed. Parental rewards were perceived by both sexes as administered more noncontingently than punishments. Females tended to perceive parental rewards as delivered more noncontingently than did males. All the intercorrelations among perceived contingency of parental reinforcement, locus of control, and depression were in the prediction direction.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>iv</td>
</tr>
<tr>
<td>Thesis</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Method</td>
<td>9</td>
</tr>
<tr>
<td>Subjects</td>
<td></td>
</tr>
<tr>
<td>Instruments</td>
<td></td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td></td>
</tr>
<tr>
<td>Rotter I-E Scale</td>
<td></td>
</tr>
<tr>
<td>Contingency of Rewards and Punishments</td>
<td></td>
</tr>
<tr>
<td>Questionnaire</td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td></td>
</tr>
<tr>
<td>Results</td>
<td>12</td>
</tr>
<tr>
<td>Discussion</td>
<td>18</td>
</tr>
<tr>
<td>References</td>
<td>25</td>
</tr>
</tbody>
</table>

iii
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Means and Standard Deviations of Rotter I-E Scale, Beck Depression Inventory, and Contingency of Rewards and Punishments Questionnaire Scores by Sex</td>
<td>14</td>
</tr>
<tr>
<td>2.</td>
<td>Rotter I-E Scale, Beck Depression Inventory, and Contingency of Rewards and Punishments Questionnaire Scale Intercorrelations</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>Results from Stepwise Regression Analysis on Contingency of Rewards and Punishments Questionnaire Scores</td>
<td>16</td>
</tr>
</tbody>
</table>
PERCEIVED CONTINGENCY OF PARENTAL REINFORCEMENTS, DEPRESSION, AND LOCUS OF CONTROL

Rotter (1966) reviewed research pertaining to a construct—locus of control—which he had derived from his comprehensive social learning theory of personality. He described this personality construct in terms of a hypothetical continuum. At one end were persons who characteristically perceived reinforcements as contingent on their own actions. Rotter labeled such beliefs "internal control." Persons at the other extreme had "external control" expectations and perceived reinforcements received as attributable to influences other than their own behaviors, such as luck, chance, fate, or powerful others.

Recent extensive literature reviews (Lefcourt, 1976; Phares, 1976) reveal that locus of control has become a highly influential concept in stimulating personality research. Rotter had speculated that consistency in parental discipline and treatment was an influential antecedent to locus of control beliefs. However, these reviews indicated that comparatively little work has been done on the parent/child relationships that influence the development of children's locus of control orientations. Studies which have been concerned with this issue (Chance, 1965; Crandall, Katkovsky, & Crandall, 1965; Davis & Phares, 1969; Katkovsky, Crandall, & Good, 1967;
Nowicki & Segal, 1974) have yielded certain consistent findings. Lefcourt noted, in summary, that data obtained on parental attitudes about childrearing practices were generally of little value, whereas children's reports regarding parental warmth and nurturance were highly predictive of locus of control orientations. Generally, studies have been more supportive which followed up more specifically on Rotter's prediction that parental consistency was an important antecedent (Davis, 1969; Davis & Phares, 1969; Levenson, 1973; Loeb, 1975; MacDonald, 1971; Patterson, 1976; Remanis, 1971 [cited in Phares, 1976]; Yates, Kennelly, & Cox, 1975).

Seligman (1975) proposed a theoretical construct—learned helplessness—which was highly similar to Rotter's locus of control notion, but derived from experimental research rather than personality research. According to the learned helplessness hypothesis, an organism learned that events were uncontrollable when it experienced response-outcome independence. This learning produced motivational, cognitive, and emotional deficits.

Because learned helplessness was conceptually similar to externality (Hiroto, 1974), experimental tests of the functional equivalence of the constructs have produced equivocal results. Hiroto (1974) reported evidence indicating that helplessness and an external locus of control produced similar behavioral effects, but Cohen, Rothbart, and Phillips (1976), using a much less stringent requirement for
externality, failed to confirm Hiroto's findings. Yates et al. (1975), Kennelly and Kinley (1975), and Patterson (1976) reported correlational data indicating internal subjects perceived their parents or teachers as more contingently reinforcing than externals—lending support to an analogy between externality and helplessness.

Seligman (1975) proposed learned helplessness as an experimental model for reactive depression in man. He supported this contention with extensive real-life anecdotal accounts and research findings (Miller & Seligman, 1973, 1975; Miller, Seligman, & Kurlander, 1975) which indicated that the major symptoms of helplessness parallel those of depression.

Seligman's evidence indicated that response-outcome independence caused helplessness and, by analogy, depression. Locus of control research indicated that parent/child relationships early in life were important determinants of internal-external beliefs and that inconsistency of parental reinforcement was related to externality. However, little prior research (Kennelly & Kinley, 1975; Patterson, 1976; Yates et al., 1975) focused specifically on the role of contingency effects in the delivery of parental reinforcements as antecedents to locus of control beliefs.

The present study explored relationships among perceived contingency of parental reinforcements, locus of control, and depression. Prior research indicated a small-to-moderate positive relationship between externality and depression.
(Abramowitz, 1969; Calhoun, Cheney, & Dawes, 1974; Emmelkamp & Cohen-Kettenis, 1975; Goss & Morosko, 1970; Miller, 1971; Naditch, Gargan, & Michael, 1975; Prociuk, Breen, & Lussier, 1976). Also, previous research (Patterson, 1976; Yates et al., 1975) indicated that perceived noncontingency of parental reinforcements was related to externality.

However, there has been an inconsistency in previous studies (Patterson, 1976; Yates et al., 1975) regarding the relative influence of noncontingent rewards versus noncontingent aversive events in relationship to an external locus of control. Yates et al. found only perceived noncontingent parental punishments related to externality, but Patterson found only perceived noncontingent parental rewards related to an external locus of control.

Several studies have investigated parent/child relationships as antecedents in the development of locus of control orientations (Chance, 1965; Crandall, Katkovsky, & Crandall, 1965; Davis & Phares, 1969; Katkovsky, Crandall, & Good, 1967; Nowicki & Segal, 1974) and, generally, reported that parental warmth, supportiveness, and encouragement were strongly related to internality. For the most part, research in this area has supported Rotter's (1966) hypothesis that parental consistency was an important antecedent. Davis and Phares (1969) found that externals more often than internals reported their parents to be inconsistent in their discipline. MacDonald (1971) reported that male and female subjects were
more internal in orientation who perceived their mothers as having set more predictable standards. Remanis (cited in Phares, 1976) supported MacDonald with very similar results. Levenson (1973) found that external subjects who believed that events were controlled by chance factors viewed parents as having unpredictable standards. Davis (1969) found inconsistent parental behavior associated with externality in sons. There were more conflicts concerning child-rearing attitudes between parents of externals than between parents of internals and, in addition, less agreement was shown between external sons and their parents regarding family problems.

Yates, Kennelly, and Cox (1975) used a scale they designed (the Contingency of Rewards and Punishments Questionnaire) to measure the degree of perceived contingency between childhood behaviors and parental reinforcements and found that externals reported their parents to have administered reinforcements more noncontingently than did internals. The scale was designed to reflect the concept developed in learning theory that organisms were conjointly sensitive to two conditional probabilities—the probability of reinforcement granting the occurrence of a response, and the probability of reinforcement in the absence of that response. This notion has been applied by Seligman, Maier, and Solomon (1971) to account for the learned helplessness effect in experimental situations.
Yates et al. noted that most research questionnaires concerning parental rewards and punishments seemed to reflect the traditional learning theory emphasis only on the probability of reinforcement granting the occurrence of a response. Thus, such questionnaires typically obtained information primarily concerning frequency and type of parental reinforcements and, therefore, were not directly relevant to whether contingency of parental reinforcement affected locus of control. The Contingency of Rewards and Punishments Questionnaire attempted to sample information which reflected the meaning of both Rotter's prediction that parental inconsistency and unpredictability was an antecedent of externality and Seligman's notion that uncontrollability of reinforcement was the cause of learned helplessness and depression.

One purpose of the present study was to follow up previous research using the Contingency of Rewards and Punishments Questionnaire (Yates et al., 1975; Patterson, 1976) and to furnish further validity data on the questionnaire by exploring its relationships with other measurement scales. Intercorrelations were derived between the Contingency of Rewards and Punishments Questionnaire, locus of control, and depression. Previous studies indicated that perceived noncontingency of parental reinforcement would be related to externality and depression.

Benson and Kennelly (1976) studied an issue that still remains somewhat unresolved. Citing Seligman's (1975)
position that noncontingent positive events as well as negative events could produce helplessness, they experimentally tested the question of whether uncontrollable positive events could produce learned helplessness in the absence of uncontrollable aversive events. The helplessness effect was obtained with a group which experienced uncontrollable aversive stimuli, but not with an uncontrollable positive continuous reinforcement group. This evidence contradicted Seligman's proposition. Benson and Kennelly emphasized, however, that under most circumstances (such as inevitably occur in real life), uncontrollable rewards might indirectly produce helplessness, because uncontrollable rewards delivered on an intermittent schedule generate uncontrollable aversive effects due to frustration. Dweck (1975) supported the finding that uncontrollable positive events in the absence of uncontrollable negative events did not produce helplessness. Cohen, Rothbart, and Phillips (1976) reported evidence that pretraining subjects with uncontrollable reinforcement could produce helplessness; however, their design did not control for aversive frustration effects due to nonreward, since their schedules of uncontrollable rewards were intermittent schedules involving nonreward.

Yates et al. (1975) reported a more external orientation in college-student subjects who perceived their parents as having been noncontingently punitive. No significant relationships were found between parental noncontingency of
reward and locus of control, although the correlations obtained were in the predicted directions. Kennelly and Kinley (1975), using sixth-grade boys as subjects, reported similar results. Internal boys reported their teachers as having been more contingently punitive than did external boys.

Patterson (1976) reported results which differed somewhat. He partially replicated Yates et al.'s (1975) study by correlating Contingency of Rewards and Punishments Questionnaire scores with locus of control scores; however, he used a different instrument (Levenson Locus of Control Scale, Levenson, 1973) to measure control orientation. Patterson found parental noncontingent reward to be more strongly related to externality than parental noncontingent punishment. His results were consistent with the general finding that perceived noncontingency of rewards and punishments were both related to externality. However, he noted that the issue of the influence of reward factors in the development of locus of control was unresolved and warranted further study. Therefore, in addition to obtaining validity data on the Contingency of Rewards and Punishments Questionnaire, the present study was designed to examine further the question of the relative influence of perceived parental noncontingent punishments versus rewards in the development of locus of control beliefs.
Method

Subjects

Subjects were 66 male and 54 female students enrolled in an introductory psychology course at a state university who received course credit for participation in the experiment. The 120 subjects were tested in small groups which varied in size from 8 to 12 subjects, depending on the number who appeared at each experimental session.

Instruments

Beck Depression Inventory. The Beck Depression Inventory (Beck, 1967) was used to measure depression. The scale consisted of 21 items which have been determined to represent the major symptoms of depression. The items sampled cognitive, affective, motivational, and vegetative elements of depression, such as guilt, sadness, social withdrawal, and loss of weight. Items had either four or five alternatives that described a particular depressive symptom. The alternatives represented different degrees of severity of the symptom, ranging from the symptom not present to a very severe expression of the symptom. Alternatives had values assigned for scoring purposes ranging from 0 to 3 for increasing degrees of symptom severity. Therefore, total scores could range from 0 to 63—the higher the score, the more severe the depression.

Rotter I-E Scale. The Rotter I-E Scale (Rotter, 1966) was used to measure locus of control and consisted of a
29-item forced-choice test with 6 nonscored filler items intended to make the purpose of the test more ambiguous. Items were designed to sample the subjects' expectations about their locus of control of reinforcement. Alternatives that measured the external locus of control expectancy were scored 1, and alternatives that measured the internal locus of control expectancy were scored 0. Therefore, a maximum score on the test was 23 and would indicate an individual with a very high degree of external locus of control expectancy.

Contingency of Rewards and Punishments Questionnaire. The Contingency of Rewards and Punishments Questionnaire (Yates, Kennelly, & Cox, 1975) was used to measure subjects' perceptions of the contingency between their behavior and the administration of parental rewards and punishments. The Contingency of Rewards and Punishments Questionnaire was administered in two separate forms, one for mothers and one for fathers, but was otherwise identical in item content. Instructions directed subjects to focus especially on relationships with their parents prior to age 12. Contingent items on the scale implied a relationship or correlation between childhood behaviors and subsequent parental rewards and punishments, while noncontingent items implied little or no correlation between childhood behaviors and parental reinforcement. There were four scales reflecting different types of item content: contingently punishing (15 items),
noncontingently punishing (12 items), contingently rewarding (15 items), and noncontingently rewarding (12 items).

Contingently rewarding and contingently punishing items each indicated a higher probability of reward/punishment for good/bad behavior than for the absence of good/bad behavior. An example of a contingent punishment item from the questionnaire was: My father (mother) usually scolded me when I misbehaved, but never did so when I didn't deserve it.

Noncontingent reward and noncontingent punishment items indicated an equal or nearly equal probability of reward/punishment whether good/bad behavior was present or absent. A noncontingent reward item on the questionnaire was: My mother (father) was certain to give me a special treat when I behaved well, but also frequently got me special things when I didn't. Each item required a response to one of five alternatives: "very true" scored 1 point, "tended to be true" scored 2 points, "tended to be neither true nor untrue" scored 3 points, "tended to be untrue" scored 4 points, and "very untrue" scored 5 points.

The Contingency of Rewards and Punishments Questionnaire was scored differently for the present study than it was by Yates et al. (1975) and Patterson (1976). This was done since prior research (Patterson, 1976; Yates, Kennelly, & Cox, 1975) had indicated the contingent and noncontingent scales were measuring much the same thing. The present research combined the contingent and noncontingent punishment
scores for a single punishment score (labeled noncontingently punishing), and combined both reward scores in a like manner (labeled noncontingently rewarding) which resulted in only two scores instead of four.

Procedure

Upon arrival at the experimental session, each subject was given the test packet which contained the Beck Depression Inventory, the Rotter I-E Scale, and the Contingency of Rewards and Punishment Questionnaire (mother form and father form). The instruments were counterbalanced for order of presentation and were administered in small groups.

Results

Means and standard deviations for all scale scores (Beck Depression Inventory, Rotter I-E Scale, Contingency of Rewards and Punishments Questionnaire [mother form], and Contingency of Rewards and Punishments Questionnaire [father form]) were calculated as were all product-moment correlations between these scores. A stepwise multiple linear regression analysis using the least squares criterion was performed for Contingency of Rewards and Punishments Questionnaire scores as the dependent variable and the following independent variables: (a) male or female subject, (b) mother or father parent, (c) punishment or reward scale, (d) male or female subject X mother or father parent interaction, (c) male or female subject X punishment or reward scale interaction, and mother or father parent X punishment or reward scale interaction.
High scores on both scales of the Contingency of Rewards and Punishments Questionnaire (noncontingently rewarding and noncontingently punishing) are interpreted as indicating little or no perceived contingency between the subjects' behaviors during childhood and parental reinforcements received.

Table 1 presents means and standard deviations by sex of subject for scores obtained on all six scales (Rotter I-E Scale, Beck Depression Inventory, Contingency of Rewards and Punishments Questionnaire [mother form] noncontingently punishing and noncontingently rewarding scales, and Contingency of Rewards and Punishments Questionnaire [father form] noncontingently punishing and noncontingently rewarding scales).

Intercorrelations among all the scale scores are presented in Table 2. Correlation coefficients between the Rotter I-E Scale and the Beck Depression Inventory are .27 for males and .33 for females. Both relationships are statistically significant \((p < .05)\). Contingency of Rewards and Punishments Questionnaire father form noncontingently rewarding scale scores for males are significantly related to both the Rotter I-E Scale \((r = .26, p < .05)\) and the Beck Depression Inventory \((r = .29, p < .05)\). For females, the mother form noncontingently punishing scale is significantly related to the Rotter I-E Scale \((r = .34, p < .05)\), and the father form noncontingently rewarding scale is significantly related to the Beck Depression Inventory scale \((r = .27, p < .05)\). All other correlation coefficients between the
<table>
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<th>Scale</th>
<th>Males</th>
<th>Females</th>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Rotter I-E Scale</td>
<td>10.52</td>
<td>3.90</td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td>6.56</td>
<td>5.36</td>
</tr>
<tr>
<td>Mother--Noncontingently Punishing</td>
<td>65.56</td>
<td>12.53</td>
</tr>
<tr>
<td>Mother--Noncontingently Rewarding</td>
<td>72.23</td>
<td>12.93</td>
</tr>
<tr>
<td>Father--Noncontingently Punishing</td>
<td>65.95</td>
<td>14.46</td>
</tr>
<tr>
<td>Father--Noncontingently Rewarding</td>
<td>72.44</td>
<td>12.54</td>
</tr>
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Table 1
Means and Standard Deviations of Rotter I-E Scale, Beck Depression Inventory, and Contingency of Rewards and Punishments Questionnaire Scores by Sex
Table 2
Rotter I-E Scale, Beck Depression Inventory, and Contingency of Rewards and Punishment Questionnaire Scale Intercorrelations

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<td>1. Rotter I-E Scale</td>
<td>---</td>
<td>.27*</td>
<td>.18</td>
<td>.17</td>
<td>.05</td>
<td>.26*</td>
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<tr>
<td>2. Beck Depression Inventory</td>
<td>.33*</td>
<td>---</td>
<td>.08</td>
<td>.21</td>
<td>.22</td>
<td>.29*</td>
</tr>
<tr>
<td>3. Mother--Noncontingently Punishing</td>
<td>.34*</td>
<td>.14</td>
<td>---</td>
<td>.41**</td>
<td>.60**</td>
<td>.38**</td>
</tr>
<tr>
<td>4. Mother--Noncontingently Rewarding</td>
<td>.13</td>
<td>.16</td>
<td>.26</td>
<td>---</td>
<td>.28*</td>
<td>.68**</td>
</tr>
<tr>
<td>5. Father--Noncontingently Punishing</td>
<td>.24</td>
<td>.24</td>
<td>.57**</td>
<td>.13</td>
<td>---</td>
<td>.51**</td>
</tr>
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<td>6. Father--Noncontingently Rewarding</td>
<td>.22</td>
<td>.27*</td>
<td>.19</td>
<td>.76**</td>
<td>.30*</td>
<td>---</td>
</tr>
</tbody>
</table>

Note: Correlations for males are above the diagonal (---), those for females are below the diagonal.

* p < .05, two-tailed test.
** p < .01, two-tailed test.
Contingency of Rewards and Punishments Questionnaire scales, the Rotter I-E Scale, and the Beck Depression Inventory are in the predicted direction, although not statistically significant.

Table 3 summarizes Contingency of Rewards and Punishments Questionnaire data determined to be statistically significant by the stepwise multiple linear regression analysis.

**Table 3**

Results from Stepwise Regression Analysis on Contingency of Rewards and Punishments Questionnaire Scores

<table>
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<tr>
<th>Independent Variable</th>
<th>Standardized Beta</th>
<th>F</th>
<th>p</th>
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<tr>
<td>Punishment/Reward</td>
<td>.20</td>
<td>12.30</td>
<td>.0005</td>
</tr>
<tr>
<td>Sex X Punishment/Reward</td>
<td>.17</td>
<td>8.73</td>
<td>.0033</td>
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<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
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<tr>
<td>Regression</td>
<td>11,190</td>
<td>2</td>
<td>5595</td>
<td>32.4</td>
<td>.0001</td>
</tr>
<tr>
<td>Residual</td>
<td>82,278</td>
<td>477</td>
<td>172</td>
<td></td>
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</tr>
</tbody>
</table>

Multiple correlation = .35.

The punishment/reward scale factor accounts for the greatest proportion of variability in the multiple correlation. Male and female scores are both notably higher on the two noncontingently rewarding scales than on the two noncontingently punishing scales. The average of the combined means is
65.85 for noncontingently punishing scales and 75.10 for noncontingently rewarding scales, resulting in a mean difference of 9.25. The stepwise regression analysis is highly significant ($F = 12.30, p < .0005$). Contingency of Rewards and Punishments Questionnaire mother form noncontingently punishing scale and father form noncontingently punishing scale average scores are closely equivalent for the two sexes; however, scores of females are higher than males on both mother and father form noncontingently rewarding scales. Female means are 4.84 points higher than males on the mother form noncontingently rewarding scale and 6.23 points higher on the father form noncontingently rewarding scale. The sex of subject X punishment/reward scale interaction is significant ($F = 8.73, p < .003$). However, this trend accounts for only about 2% of the variability in the noncontingency scores after the punishment/reward variability is partialled out, and although significant, it does not represent a major factor.

Therefore, the regression analysis indicates that male and female subjects both perceive parental rewards as being administered more noncontingently than parental punishments, with females tending to perceive such rewards as somewhat more noncontingent than males.

None of the other four factors attained significance. Results for these factors in the final regression equation are: male/female subject ($F = 1.12, p < .29$), mother/father
parent X punishment/reward scale interaction ($F = .29, p < .59$), mother/father parent ($F = .07, p < .79$), male/female subject X mother/father parent interaction ($F = .01, p < .91$).

Discussion

The relationship between external locus of control and depression that has been reported by several other researchers is also indicated in this study for both males and females. Lefcourt (1976) considers the essence of this relationship to be a concurrence of descriptions—subjects who describe themselves as external are also more likely than internals to describe themselves as depressed.

Interpretation of the Contingency of Rewards and Punishments Questionnaire is simplified by combining the previously used four scales for each form (mothers and fathers) into two scales. Subjects’ perceptions of the extent to which their parents were contingently punishing and contingently rewarding are not applicable in this study since the revised scoring system reports only retrospectively perceived degree of noncontingency of parental punishments and rewards. However, direct comparisons to previous studies more general than those comparing relationships reported between each particular Contingency of Rewards and Punishments Questionnaire scale and locus of control measures can still be made. The present study replicates the consistent findings that perceived noncontingency of parental reinforcements (both punishment and reward) and childhood behaviors are related
to externality as reported by Yates et al. (1975) and Patterson (1976).

Yates et al. found the strongest relationships between various Contingency of Rewards and Punishments Questionnaire scales (especially for males) and locus of control, whereas this study (using the same instruments) indicates only one significant relationship for male subjects—paternal noncontingent reward to externality. Females who perceive their mothers as more noncontingently punishing are also more external in orientation. Patterson, in opposition to Yates et al., found parental reward factors related to locus of control more strongly than parental punishments factors, so the present data support and, to a degree, contradict both these previous studies. Comparisons of the results reported in all three studies using the Contingency of Rewards and Punishments Questionnaire indicate that variations in the obtained degree of relationship between specific questionnaire scales and locus of control measures have most probably resulted primarily from sampling fluctuations. Correlations between Contingency of Rewards and Punishments Questionnaire scales and locus of control scores have been consistently in the predicted direction. The particular relationships that attain significance appear to be more the result of the subject sample used than of any real differences between relative potency of perceived noncontingency of parental punishment versus perceived noncontingency of parental
reward influences in the development of locus of control beliefs.

An inspection of the intercorrelations in Table 2 indicates that Beck Depression Inventory scores are related to Contingency of Rewards and Punishments Questionnaire scales in a pattern very similar to Rotter I-E Scale scores, further supporting the analogy between depression and locus of control. Interpretation of the particular relationships between various individual Contingency of Rewards and Punishments Questionnaire scales and the Beck Depression Inventory, it seems then, can most reasonably be made in light of past findings concerning relationships between Contingency of Rewards and Punishments Questionnaire scales and locus of control as discussed. The present results indicate two significant relationships—both male and female subjects who perceived their fathers as having been noncontingently rewarding also reported greater depression. However, all the relationships between Contingency of Rewards and Punishments Questionnaire scales and depression are in the predicted direction and the particular relationships that attained significance, in comparison to those that did not, are very likely the result of subject sample rather than any real differences among the Contingency of Rewards and Punishments Questionnaire scales.

Lefcourt (1976) characterizes the relationship between locus of control and depression measures as a concurrence of descriptions. Extrapolating his interpretation to include
the present results, subjects who describe their parents as having delivered reinforcement more noncontingently are also more likely to describe themselves as more external and as more depressed. These relationships have been consistently replicated and appear to be valid. Variations in strength of intercorrelations between scores on these variables reported across studies are proposed in this paper to result primarily from sampling fluctuations. Clues to the sources of this variability are provided by three prominent researchers in the locus of control literature.

First, Rotter (1966) proposes that generalized expectancies, specific expectancies, and the value of potential reinforcements all influence a particular behavior choice. Instruments used to measure personality traits typically derive a score which is assumed to represent only subjects' generalized expectancies regarding a particular construct of interest. However, widely diverse individual differences in reaction to specific situations and different reinforcements make it difficult to construct a scale which will contain a broad sample of items across the construct being measured and be reasonably short. With this practical limitation, the particular items selected might sample specific expectancies for many subjects, and their scores would not accurately reflect their actual degree of generalized expectancy. On a short scale, only three or so such items could make a significant difference in an individual's score. The
problem is compounded in correlational research because two or more scales are used, and each scale has this limitation.

Davis' (1969) hypothesis might indicate one reason why relationships between Contingency of Rewards and Punishments Questionnaire scales and the Rotter I-E Scale are not stronger. His results indicate that inconsistency may be a sufficient condition for developing externality, but that internality may not necessarily develop from the converse situation. Loeb (1975) supports this contention. Certain subjects scoring high on externality on the Rotter I-E Scale might have also scored low on noncontingently punishing and noncontingently rewarding Contingency of Rewards and Punishments Questionnaire scales counter to the predicted relationship, because they perceived their parents as having been contingently reinforcing. However, the quality of their parents' behavior might have been consistently domineering, resulting in the subjects' sense of externality.

Finally, Phares (1976) observes that in child research, efforts are frequently made to determine relatively simplisitic construction of early childhood parent/child interactions that bypass intervening experiences and relate directly to adult locus of control scores. Moderator variable effects of intervening experiences could dramatically alter adulthood beliefs that were formed in early childhood as the result of parent/child relationships. Variables such as birth order, peer interactions, social pressures, and socioeconomic status
all mediate early childhood beliefs. Therefore, any particular isolated type of parent/child interaction would not be expected to be so pervasive an influence as to directly determine adult locus of control beliefs.

The regression analysis indicates that, for the present, sample parental rewards are perceived as significantly more noncontingent than parental punishments. These data support Paris and Cairn's (1972) findings that rewards are more indiscriminately administered by adults than punishments. Therefore, there could be some consistent differential influence between parental rewards and punishments that has not been detected through using the present instruments and correlational techniques. Also, the regression analysis shows the significant trend that females perceive reward as more noncontingently given by parents than male subjects do. This trend, although significant, did not represent a major factor. Previous research has indicated various sex differences which may indicate cultural tendencies in socialization of children, e.g., males may be subjected to more stringent contingencies for obtaining rewards than females. Such differences should be given consideration in analysis of the results of future studies to determine if consistent and meaningful patterns of sex differences do exist and can be detected.

Regarding the relative influence of parental punishments versus rewards in inducing locus of control beliefs, Crandall's (cited in Lefcourt, 1976) longitudinal study indicates that
contingent reward influences may become more influential during teenage years and young adulthood. Individuals in these age groups are beginning to perceive cause and effect relationships between their behaviors and rewards received—whereas, during childhood, rewards may have been delivered on a much more noncontingent basis than punishments. Although the Contingency of Rewards and Punishments Questionnaire instructions directed the subjects to think especially about the time prior to age 12, their recollections may have been considerably influenced by more recent experiences. The present data could actually reflect more current attitudes than perceptions of past experiences. Therefore, further research with preteenagers seems indicated to determine more accurately the relative influences of parental noncontingent punishment versus reward in the development of locus of control beliefs and susceptibility to developing reactive depression.
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