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Contingency and Control Beliefs as Predictors of Psychotherapy Outcomes Among Children and Adolescents

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Recent developments in the study of perceived control suggest that control-related beliefs may predict problem-solving behavior in psychotherapy if two conditions are met. First, distinction must be made among beliefs about outcome contingency, personal competence, and control (defined as the capacity to cause intended outcomes). Second, beliefs must be assessed for the specific behavioral domain that is the object of prediction (rather than global locus of control). This notion was tested among 8–17-year-olds referred for outpatient therapy. At the outset, children answered probes assessing contingency, competence, and control beliefs about solving problems at home and at school. At the outset and again 6 months later when therapy had ended, parents reported the children's problems at home and at school, using the Child Behavior Checklist. Perceived contingency and perceived control accounted for 29% of the variance in total problem reduction, indicating that the two beliefs were related to problem solving during therapy. This suggests that the effects of child psychotherapy may be enhanced by targeting children's contingency and control beliefs for intervention.

Control-related beliefs can mediate goal-directed action. Several theoretical models suggest that efforts to achieve a goal depend partly on the perceived controllability of that goal (e.g., Chapman & Skinner, 1985a, 1985b; Dweck & Elliot, 1983; Janoff-Bulman & Brickman, 1982; Lefcourt, 1976; Oppenheimer, in press; Weisz, 1986). Tests of this proposition have focused most often on academic achievement, which has been shown to correlate with perception of control (see reviews by Findley & Cooper, 1983; Stipek & Weisz, 1981). Causal analyses indicate that perceived control can stimulate academic achievement and that the reverse may also be true (Calsyn, 1973; Stipek, 1980). Such findings suggest an important possibility for psychotherapy research: Clients' beliefs about control over problem behavior may mediate their achievements during therapy for that behavior. Clients who believe that their behavior problems are controllable may be more likely to invest the energy necessary for therapeutic gains than clients who believe that their problems are uncontrollable.

One application of this idea can be found in self-efficacy theory and research (e.g., Bandura, 1977, 1982; Bandura, Adams, Hardy, & Howells, 1980). Perceived control, in the form of self-efficacy beliefs, is said to foster initiation of, and persistence at, behavior aimed at problem resolution. Studies have also supported this idea among adults treated for phobias (e.g., Bandura, Adams, & Beyer, 1977; Bandura et al., 1980) and for habits such as smoking (e.g., DiClemente, Prochaska, & Gilbertini, 1985). However, thus far there has been little effort to extend Bandura's work, or to extend control theory more generally, to therapy effects with children.

This relative inattention to child therapy is surprising, because control-related beliefs may be especially predictive of treatment gains among children and adolescents. Unlike adults, whose psychotherapy is usually voluntary and thus implies some expectation that target problems may be controlled, children and adolescents rarely volunteer for treatment (Achenbach, 1982). Thus, some children and adolescents may find themselves in therapy despite serious doubts, or outright disbelief, that their problems can be controlled. Such youngsters may show less effective problem resolution during therapy than children who perceive their problems as controllable. Thus, individual differences in control beliefs might be evidenced by differential rates of change in problem behavior during therapy because children invest levels of energy in the therapeutic process commensurate with their beliefs about control. This was the guiding hypothesis underlying the present study.

This study was designed to explore relations between control-related beliefs and psychotherapeutic gains in children. Thus, a key concern was how to best assess children's control-relevant beliefs. A number of locus of control scales are available (see the review by Weisz & Stipek, 1982), but none provide the kind of assessment needed for the theoretical model that framed the present study. In this two-dimensional model of control cognition, developed by Weisz and others (Weisz, 1983, 1986; Weisz & Cameron, 1985; Weisz & Stipek, 1982), control is defined as

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the capacity to cause an intended outcome. Thus defined, control is a joint function of two factors: *outcome contingency* and *personal competence.* The contingency of a target outcome, such as problem resolution, is defined as the degree to which that outcome depends on the behavior of relevant individuals: in the case of a child, on "kids" in general. Personal competence with respect to outcome is defined as the individual's capacity to produce the behavior on which the outcome is contingent, to the extent that contingency exists. Ordinarily (and in the present study), competence is construed in social-comparative terms, with the individual's capacity gauged relative to that of relevant others (see Harter, 1982; Nicholls, 1978); alternatively, competence can be construed in terms of whether one possesses particular abilities or in terms of which behaviors from a list of increasingly difficult behaviors one can perform (for examples see Weisz, 1983).

Research based on this two-dimensional model has shown that children (as young as 7-years-old) and adolescents can reason about contingency and competence as independent factors, and that the two factors are related to perceived control over target outcomes (see Weisz, 1986). The two-dimensional model underscores the need for (a) separate assessment of contingency, competence, and control beliefs and (b) focus on the particular domain of goal-directed behavior that is of interest rather than on global perceived control. Children's locus of control scales, though useful for many purposes, fail to satisfy both of these criteria. This is not surprising. Locus of control scales ordinarily assess control beliefs construed quite globally, whereas the present criteria dictate the need for precisely focused probes aimed at specific behavioral domains.

Accordingly, for the present study a set of Contingency, Competence, and Control (CCC) probes was constructed, with questions focused on children's beliefs about their problems at home and at school. Children who had been referred to clinics were asked to indicate how contingent they believed the solutions to their problems were on "kids and what they do;" how competent they were at solution-relevant behavior; and how likely it was that they could control their problems, or "solve the problems if I try." The last question was included to check the possibility that control beliefs per se have predictive power independent of children's beliefs about the contingency of outcomes and about their own personal competence.

Any of the three belief dimensions (contingency, competence, or control) may predict problem resolution in therapy. However, problem solving during therapy may be predicted particularly well by contingency beliefs. The belief that problem solution or reduction is not contingent on what children do should discourage problem-solving behavior; there is little to be gained from trying to influence an inherently noncontingent outcome. By contrast, a child who believes that the solution to problems at home and at school "depends on the kids and what they do" is acknowledging that problem solution depends on individual action. According to action theory and the two-dimensional control model, such belief should stimulate problem-solving efforts, and these efforts are likely to be enhanced by a guide to effective action (e.g., a therapist).

The assessment of contingency, competence, and control beliefs through focused probes has benefits and costs. Benefits include a clear separation of the three dimensions and a focus on the behavior domain of primary interest—in this case, on solving problems at home and school. However, a significant cost is incurred by tailoring the question content to the domain of interest in that the experimenter loses the advantages of standardization with large samples, advantages offered by several published locus of control scales. To retain some of these advantages, and to provide a basis for comparison with the CCC probes, the present study included a well standardized measure of perceived control, Connell's (1980, 1985) Multidimensional Measure of Children's Perceptions of Control (MMCPC).

A major aim of this study is to identify relations between beliefs and behavioral gains in naturally occurring therapeutic situations. Accordingly, the children in this sample had all been referred for therapy by family members and were seen by full-time clinicians in public mental health clinics. To reflect the array of home and school problems for which the children were referred and treated, the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) was used as the primary measure of problem behavior and of change with treatment.

Method

Subjects

The initial sample of 78 subjects included 44 boys and 34 girls. Ages ranged from 8 to 17 years, with a mean age of 11.7 years (SD = 2.58). Eleven of the children were black, 67 white. Among the 62 children for whom parent occupation data were available, socioeconomic status (SES) ratings spanned the nine levels of Hollingshead's (1975) scale, with a mean level of 4.3 (SD = 1.95). All subjects had been brought to a public mental health clinic by parents or guardians for treatment. As is typical in outpatient facilities for children, subjects were referred for a broad array of behavior problems at home and school. Only a minority received specific *Diagnostic and Statistical Manual of Mental Disorders* (DSM—III; American Psychiatric Association, 1980) diagnoses. Following DSM—III-based diagnostic interviews by the clinic staff (interviews not standardized, no reliability data available), 26 children were given no diagnosis, 24 were diagnosed with adjustment disorders, and 2 were given residual diagnoses. The 26 diagnosed children were classified across 12 DSM—III categories. Children whose DSM—III diagnosis was mental retardation were not included. On the day treatment began, the children's median total behavior problem T score on the CBCL was 69.9; this placed the average subject at approximately the 98th percentile for his or her age and sex group (Achenbach & Edelbrock, 1983). The T scores were slightly higher for externalizing problems (M = 67.8) than for internalizing problems (M = 65.9).

Clinic Settings, Therapists, and Therapy Sessions

To insure that findings would not reflect idiosyncratic characteristics of any particular mental health center or therapist, the sample was taken from multiple clinics with multiple therapists. The 78 children were drawn from seven public mental health clinics, four in the cities and three in the rural areas of North Carolina. Several therapists (13 men, 21 women) provided individual therapy for the children. Because the aim was to assess correlates of change under naturally occurring treatment, therapy was allowed to run its natural course, with no effort made to influence the number of therapy sessions attended. Thus, number of sessions varied substantially; the range was 1–23, the mean was 7.33, and the median was 5 (SD = 5.62). Types of therapy also varied widely, with most therapists identifying themselves as eclectic. When therapists were asked to estimate the percentage of their effort that could be called

psychodynamic, cognitive, or behavioral, the means were 32%, 26%, and 28%, respectively.

Procedure

On the day of the child's first session with the therapist, the parent filled in the CBCL (Achenbach & Edelbrock, 1983), a standardized parent-report measure that lists 118 child behavior problems. Parents circle 0 for each problem that is *not true* of their child, 1 for each problem that is *somewhat or sometimes true,* and 2 for each problem that is *very true or often true.* The sum is the child's total problem score; norms permit conversion to a *T* score reflecting a child's standing relative to others of the same sex and similar age. (Because norms only extend to age 16, the one 17-year-old in the present sample was scored as a 16-year-old.) Factor analytic research (see Achenbach & Edelbrock, 1983) made possible the computation of summary scores for internalizing problems (e.g., social withdrawal, worrying) and externalizing problems (e.g., aggression, arguing).

On the same day, prior to the first therapy session, the child answered the 24-item Personal Experience–Form A of the MMCPC (Connell, 1980, 1985). Each item includes a statement followed by four response options: *very true, sort of true, not very true, not at all true.* Statements involve either internal causal attributions (e.g., "If somebody is my friend, it is usually because of the way I treat them"), external attributions (e.g., "When I do well in school, it's because the teacher likes me"), or attributions to unknown forces (e.g., "When I get a good grade in school, I usually don't understand why I did so well"). Half of the items involve successes (e.g., preceding examples) and half involve failures (e.g., "If somebody doesn't want to be my friend, there's probably nothing I can do about it"). Thus, the scale yields six perceived control scores: internal success and failure, external success and failure, and unknown success and failure. Factor analyses among third–sixth-graders ($N = 355$) and adolescents ($N = 680$) have revealed strong coherence within internal, external and unknown items, respectively. Within these areas, positive and negative items form separate factors often enough to dictate the need for separate success and failure scores (see Connell, 1985). The validity of the MMCPC as a measure of perceived control has been supported by studies (reviewed by Connell, 1985) showing theoretically appropriate relations between its scores and (a) scores on a measure of perceived personal competence, (b) scores on a measure of intrinsic versus extrinsic classroom orientation, and (c) situational differences presumed to influence perceived control (for example, children who remained in a stable school program over a 17-month period showed sharper decreases in unknown control than did children who changed schools or programs; Connell & Tero, 1982).

On the same day, the child answered the 12 questions that formed the CCC probes, which were based on the two-dimensional control model described previously (Weisz, 1983, 1986). The questions focused on control beliefs for solving problems at home and school. To enhance understandability, the response format of the MMCPC was retained. Four of the questions concerned perceived contingency (e.g., "When kids have problems at home, solving the problems depends on the kids and what they do"). Four concerned perceived personal competence (e.g., "When I have problems at home, I am better than most kids at helping to solve the problems"). And four concerned perceived control, or the belief that the individual can cause the desired outcome of problem resolution (e.g., "When I have problems at home, I can solve them if I try"). Within each set of four items, half concerned problems at home and half concerned problems at school. Each pair of home items and each pair of school items included one positively worded satement (e.g., previous examples) and one negatively worded statement (e.g., "When I have problems at school, I cannot solve them even if I try"). The probes yielded separate scores for perceived contingency, competence, and control. Whereas focused probes of this sort lack the advantages of standardization and validation, several of the correlations between CCC and MMPC measures were consistent with the intended meaning of the probes (see Table 1).

Six months after the beginning of therapy, when all the children had had their final contact with the therapist, parents were asked to complete a current CBCL for their child. Two mailouts were followed by multiple phone reminders until a parent indicated an unwillingness to complete the CBCL. In such cases, informed consent procedures dictated that parents' wishes be respected. Moreover, it seemed possible that unwilling parents would provide data of doubtful validity. Of the 78 parents contacted, 55 (71%) completed the second CBCL. The mean lag between Times 1 and 2 was 190.1 days, or about 6.3 months; the median was 7 months.

Results

To check whether the 23 nonrespondents differed from the 55 respondents, 17 *t* tests were calculated. The two groups were compared on their initial CBCL *T* scores for total problems, internalizing, and externalizing; on all six control measures from the MMCPC; on contingency, competence, and control measures from the CCC; on the demographic variables of age, sex, and SES; and on two therapy participation variables: number of clinic visits and number of missed appointments or "no shows" ($df = 60$ for SES, 76 for other variables). None of these tests revealed a significant difference between respondents and nonrespondents, regardless of whether a Bonferroni correction (Neter & Wasserman, 1974) was used to adjust for multiple significance tests.

Relations Between Control Belief Measures and CBCL Problem Scores

Table 1 shows intercorrelations between control belief and CBCL measures at the outset of therapy. Given the expectancy that 4 of the 78 coefficients could be significant by chance, the 4 lowest statistically significant values were regarded as nonsignificant and those asterisks were deleted from Table 1 (for further details and rationale see Achenbach & Edelbrock, 1981). The pattern of correlations among the contingency, competence, and control belief measures is quite consistent with the two-dimensional control theory (Weisz, 1983, 1986). Children's beliefs about outcome contingency and about personal competence were strongly correlated with their perceived control over problems, but contingency and competence beliefs remained independent of one another.

Table 1 also shows several correlations between MMCPC measures and contingency, competence, and control measures that appear consistent with the intended meaning of the CCC probes. Subjects who rated problem outcomes at home and at school as contingent on children's behavior (on the CCC probes) were unlikely to make causal attributions to external or unknown factors on the MMCPC. Those who rated themselves competent on the CCC probes were relatively unlikely to attribute failure to themselves. Finally, those who rated themselves high in control on the CCC probes were likely, on the MMCPC, to attribute success to themselves and unlikely to attribute outcomes of any kind to unknown factors.

Finally, note that CBCL *T* scores for internalizing, externalizing, and total problems showed almost no significant corre-

Table 1
Intercorrelations Among Control-Related Beliefs, Problem Scores, and Age

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. CCC contingency												
2. CCC competence	.18											
3. CCC control	.43****	.47****										
4. MMCPC internal-S	.18	.23	.42****									
5. MMCPC internal-F	−.16	−.27	−.02	.18								
6. MMCPC external-S	−.27*	−.24	−.21	−.02	.24							
7. MMCPC external-F	−.26*	−.38***	−.17	.04	.31**	.51****						
8. MMCPC unknown-S	−.46****	−.24	−.36**	.14	.21	.52****	.43****					
9. MMCPC unknown-F	−.54****	−.29**	−.43****	−.04	.32**	.58****	.46****	.64****				
10. CBCL total	.01	−.12	−.18	−.06	.07	.21	.04	.15	.07			
11. CBCL internal	.06	−.04	−.15	−.05	.04	.09	.01	.07	.03	.89****		
12. CBCL external	−.17	−.16	−.12	.00	.11	.33**	.08	.23	.14	.91****	.69****	
Age	.25*	−.02	.00	−.26	.04	−.30**	−.13	−.20	−.25*	−.20	−.19	−.35**

Note. CCC = Contingency, Competence, and Control probes; MMCPC = Multidimensional Measure of Children's Perceptions of Control; CBCL = Child Behavior Checklist. S = success; F = failure.
* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

lations with any of the control measures. This finding provides an important counterpoint to relations between control measures and changes in problem scores, which we examine next.

Control Measures as Predictors of Change in Problem Scores

A series of t tests for correlated means (with a Bonferroni correction setting the alpha level at .01) revealed that the sample of 55 respondents showed significant reductions in CBCL scores over the 6-month interval. This was true of the T score for total problems (mean drop of 3.74) T score points, or just over one-third of a standard deviation, $t(53) = 3.46$, $p < .001$; internalizing problems (mean drop of 3.49), $t(53) = 3.37$, $p = .001$; and externalizing problems (mean drop of 2.58), $t(53) = 2.92$, $p < .005$.

The next set of analyses focused on relations between control measures and changes children showed over the 6-month period. First, it was necessary to generate relatively unbiased change scores by controlling for initial problem levels and assessing individual differences in change beyond the general improvement just discussed. For this purpose, linear regression equations were generated using Time 1 problem scores to predict Time 2 problem scores. One equation involved total problem scores; another, internalizing scores; and a third, externalizing scores. The resulting equations were used to generate a predicted Time 2 score for each Time 1 score; the difference between the predicted and the actual score for each individual (the regression residual) was the measure of change used here.

Table 2 shows the correlations between CBCL regression residuals and the control measures as well as six demographic and clinic variables. For protection against significant findings that might arise by chance, the two smallest significant coefficients were regarded as nonsignificant and those asterisks were deleted from the table. For comparison, the analysis included several variables sometimes said to be correlated with change during therapy (see Casey & Berman, 1985; Weisz, Weiss, Alicke, & Klotz, 1986): age, sex (point-biserial correlations reported), number of clinic visits, and type of therapy used (therapist estimates of the degree to which behavioral, cognitive, and psychodynamic interventions were used). The table shows that change in problem scores was not correlated with any of these variables. Change was, however, correlated with certain of the control measures.

Table 2
Correlations of Control-Measures and Other Variables With CBCL Regression Residuals

Variable	CBCL regression residuals		
	Total problems	Internalizing	Externalizing
CCC probe measures			
Contingency	.48**	.33*	.48**
Competence	.07	.03	.04
Control	.41*	.33*	.38*
MMCPC measures			
Internal success	.26	.24	.21
Internal failure	.00	.04	−.05
External success	−.08	−.08	−.04
External failure	−.02	.02	−.04
Unknown success	−.23	−.14	−.27
Unknown failure	−.30	−.15	−.35*
Demographic and clinic measures			
Age	.12	.03	.05
Sex[a]	.14	.14	.11
Clinic visits	−.10	−.08	−.24
% Behavioral therapy	−.09	−.07	−.07
% Cognitive therapy	.18	.16	.17
% Psychodynamic therapy	−.01	−.04	−.13

Note. Positive coefficients indicate that higher scores on measures correlate positively with reduced problems. CCC = Contingency, Competence, and Control probes; CBCL = Child Behavior Checklist; MMCPC = Multidimensional Measure of Children's Perceptions of Control.
[a] Point-biserial correlations (1 = boys, 2 = girls).
* $p < .01$. ** $p < .001$.

Contingency beliefs proved to be a significant predictor; children who believed that "what kids do" determines whether their problems at home and school are solved showed the most marked reductions in problem behavior. Contingency beliefs were marginally stronger predictors of change for externalizing behavior than for internalizing behavior, rs = .48 and .33, respectively, $t(52) = 1.50$, $p < .10$. Competence beliefs showed little predictive power overall. Control beliefs did correlate significantly with changes in problem behavior, but the correlations may have resulted partly from the fact that contingency and control beliefs were correlated with one another (see Table 1 and the following regression analysis). On the MMCPC, the more children attributed failure to unknown causes the less they improved in total problems and in externalizing problems.

Post hoc analyses were used to determine whether correlations between CCC probe measures and CBCL regression residuals differed as a function of sex, of SES (median split: Levels 1–4 vs Levels 5–9 on Hollingshead's, 1975, scale), or of age (ages 8–11 vs. ages 12–17). Correlations were compared via z transformations, with the two lowest significant differences (the chance expectancy) dropped. These procedures revealed no sex or SES differences, but they revealed two potentially important age differences. The residuals for total problems and internalizing were significantly correlated with CCC probe competence scores for the 26 12–17-year-olds (rs = .53 and .57) but not for the 29 8–11-year-olds (rs = −.22 and −.29). The older versus younger difference was significant for total problems, $z = 2.83$, $p = .002$, and for internalizing, $z = 3.28$, $p = .001$.

Regression Analysis

Because several of the control belief measures were correlated with one another, it was important to gauge their independent contributions to the prediction of therapeutic change. Thus, three stepwise linear regression analyses were carried out, using control belief scores to predict changes in CBCL scores. The first analysis focused on total problem residuals, the second on internalizing residuals, and the third on externalizing residuals. In each analysis the predictors included the three measures that showed significant correlations with change in Table 2; CCC contingency and control and MMCPC unknown failure. Age and sex were also included as predictors because some studies (reviewed in Casey & Berman, 1985; Weisz et al., 1986) have suggested that younger children and girls may respond more favorably to psychotherapy than older children and boys.

As Table 3 shows, the predictors accounted for a substantial proportion of the variance in total problem and externalizing problem change scores. In these two analyses, CCC contingency beliefs entered first and accounted for 23% of the variance in change scores. For total problems, contingency beliefs and control beliefs (the only significant predictors) accounted for 29% of the variance in change. For externalizing problem change, the same two predictors entered in the same order and accounted for 26% of the variance. Results for internalizing problem change were somewhat different. Here, control beliefs entered first and control and contingency beliefs accounted for only 16% of the variance.

Table 3
Stepwise Multiple Regression Findings for Changes in Problem Scores

Problem change variable	Step 1 (R^2)	Step 2 (R^2)	Adjusted R^2
Total problems	Contingency: .23	Control: .29	.26
Internalizing	Control: .12	Contingency: .16	.12
Externalizing	Contingency: .23	Control: .26	.23

Note. Adjusted R^2, $df = 52$, provides a "correction for shrinkage" by adjusting for the number of predictors and number of subjects to generate a relatively unbiased estimate of the true R^2 parameter in the population (Howell, 1982, pp. 420–421).

Discussion

According to the theoretical perspective on control described in the introduction, (see Chapman, 1984; Weisz, 1983, 1986; Weisz & Stipek, 1982), control-related beliefs should predict persistence in problem solving if two key conditions are met. First, distinction should be made among beliefs about outcome contingency, personal competence, and control (defined as the capacity to influence outcomes in an intended direction). High levels of perceived contingency should logically foster problem-solving behavior; high levels of perceived competence should have less predictable effects. Second, focus should be maintained on control-related beliefs within the behavior domain of interest and not on global perceptions regarding general life events. The findings of the present study suggest that, given these two conditions, problem resolution in child psychotherapy can be predicted rather strongly from control-related beliefs.

Problem resolution during the 6 months spanned by this study was best predicted by contingency and control beliefs from the CCC probes. Competence beliefs showed no relation to problem reduction over the full sample but a significant relation among 12–17-year-olds. One possible interpretation of this finding is suggested by Nicholls and Miller's (1984) intriguing developmental analysis of children's concepts of ability or competence. Nicholls and Miller reported that children aged 7–9 are not likely to construe ability as capacity or to recognize it as a likely cause of outcomes. By ages 10–11, children have begun to construe ability as capacity, but they do not yet understand how levels of ability influence the likelihood of various outcomes. According to the Nicholls and Miller data, it is only at about age 12 that children begin to reason about ability or competence in relatively adultlike ways. The approach taken by Nicholls and Miller differed from the approach used here in several respects. However, their findings suggest an important possibility: Age differences in the predictive power of competence judgments may reflect developmental differences in children's understanding of competence and its implications.

Changes in problem behavior were correlated more strongly with CCC contingency and control measures than with MMCPC measures. This does not constitute evidence of the superiority of one measurement approach over the other. Instead, it suggests that when assessing behavior change among clinic-referred children in this kind of study, there may be value in using probes

that can disentangle contingency, competence, and control beliefs and can focus attention specifically on problems at home and school. Conceivably, prediction might be more successful in situations that foster a more specific focus (e.g., treatment for a specific phobia, or intervention to improve math performance).

Prediction of problem resolution from contingency beliefs was marginally more successful for externalizing than for internalizing problems (rs = .48 vs. .33). Externalizing problems have also been dubbed "undercontrolled behavior," (see Achenbach & Edelbrock, 1978) suggesting that a key component may be insufficient self-control. Following this reasoning, the present findings might be given the intriguing interpretation that it is therapeutic gains in self-control that are especially well predicted by contingency and control beliefs. However, it should be stressed that even reductions in internalizing problems were better predicted by contingency and control beliefs than by age and sex, number of therapy sessions, or type of therapy.

The finding that contingency and control beliefs predict problem resolution with therapy could be important both theoretically and practically. Theoretically, the findings support and extend the reasoning outlined in the introduction, which grew out of action theory (e.g., Chapman & Skinner, 1985a, 198b; Oppenheimer, in press) and the two-dimensional control model (e.g., Weisz, 1983, 1986). These findings indicate that action aimed at exerting control may be fostered by (a) a belief that desired outcomes are contingent on the behavior of persons like oneself and (b) a belief that one's effort can produce the outcomes (i.e., that one has control). Whereas control-related beliefs and their origins may be of interest in their own right (cf. Weisz, 1983), they become especially important when linked in understandable ways to actual problem solving behavior. This is particularly true when the problems under study are serious enough to warrant clinic referral.

The link between control-related beliefs and problem resolution may prove especially important in the realm of child psychotherapy. Because children rarely volunteer for therapy, they cannot be assumed to believe in its efficacy or in the controllability of their problems that stimulated the therapy. Consequently, there may be considerable variability in children's control-related beliefs in a clinical context. The present findings suggest that this variability can provide considerable power in the prediction of therapeutic gains. The findings also suggest indirectly that children's beliefs about the contingency and controllability of their problems might be made a focus of the therapeutic process. Indeed, some researchers are already exploring the modifiability of control beliefs during child therapy (Omizo & Cubberly, 1984; Porter & Omizo, 1984; Swink & Buchanan, 1984). The present research suggests that such modification, if properly targeted, might set the stage for significant therapeutic gains.

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