R E P O R T R E S U M E S

ED 020 223 UD 005 191

PARENTAL ANTECEDENTS OF ONE MOTIVATIONAL DETERMINANT OF INTELLECTUAL ACHIEVEMENT BEHAVIOR.

BY- CRANDALL, VIRGINIA C. KATKOVSKY, WALTER

PUB DATE 67

EDRS PRICE MF-$0.25 HC-$1.00 23P.

DESCRIPTORS- *PARENT CHILD RELATIONSHIP, *STUDENT ATTITUDES, *STUDENT MOTIVATION, *ACHIEVEMENT, *INDIVIDUAL POWER, STUDENT BEHAVIOR, INTERVIEWS, MOTHER ATTITUDES, BEHAVIOR RATING SCALES, STATISTICAL ANALYSIS, DATA, REINFORCEMENT, SELF CONCEPT, ELEMENTARY SCHOOL CHILDREN, GOAL ORIENTATION, SEX DIFFERENCES, DISCIPLINE, QUESTIONNAIRES, FATHERS, CHILD REARING, CHILD RESPONSIBILITY, FELS LONGITUDINAL PROGRAM

REPORTED ARE TWO SEPARATE STUDIES WHICH RELATE THE INTERACTION BETWEEN PARENT AND CHILD TO THE CHILD'S SENSE OF RESPONSIBILITY FOR HIS OWN ACTIONS. IN THE FIRST STUDY 23 BOYS AND 18 GIRLS, 7 TO 12.5 YEARS OLD, WERE TESTED ON AN ACHIEVEMENT RESPONSIBILITY SCALE TO DETERMINE WHETHER THEY JUDGED THEIR SUCCESS OR FAILURE TO BE CAUSED BY SELF-EFFORT OR BY EXTERNAL FACTORS. THEIR MOTHERS WERE THEN RATED ACCORDING TO THE AMOUNT OF AFFECTION AND PROTECTIVENESS THEY OFFERED TO THE CHILD. VARIABLES RELATED TO THE MOTHER'S MAINTENANCE OF DISCIPLINE WERE ALSO STUDIED. IN A SECOND INVESTIGATION 20 BOYS AND 20 GIRLS IN THE SECOND-, THIRD-, AND FOURTH-GRADES WERE TESTED IN A MANNER SIMILAR TO THE TESTING OF STUDENTS IN THE FIRST STUDY. RELEVANT DATA WERE ALSO GATHERED FROM BOTH PARENTS OF EACH CHILD. RESULTS FROM THE TWO STUDIES INDICATE THAT PARENTS WHO MAINTAIN SUPPORTIVE, POSITIVE RELATIONSHIPS WITH THEIR CHILDREN ARE MOST LIKELY TO FOSTER BELIEFS IN SELF-ACHIEVEMENT THAN ARE PARENTS WHOSE RELATIONSHIPS ARE PUNITIVE, REJECTING, AND CRITICAL. MOREOVER, FATHER-CHILD INTERACTIONS SEEM TO INFLUENCE THE CHILD'S INTERNAL-EXTERNAL CONTROL MORE STRONGLY THAN DO MOTHER-CHILD RELATIONSHIPS. (DK)

Parental Antecedents of One Motivational Determinant of Intellectual Achievement Behavior

Virginia C. Crandall

Fels Research Institute

Walter Katkovsky

Fordham University

The construct with which this study is concerned is generally known as internal vs. external control of reinforcement. It consists of individual differences in the degree to which persons believe that <u>their own</u> actions produce the rewards and punishments they receive, as opposed to a belief that these reinforcements are meted out to them at the whim or discretion of some agent outside oneself, such as powerful others or luck or fate. The extensive utility of this variable in predicting a wide range of behaviors has been summarized by Rotter (1966) and by Lefcourt (1966).

We became interested in the variable because of our on-going efforts to find the determinants of children's achievement behaviors. It seemed reasonable to us that the degree to which a child believes that his own behavior is responsible for his successes and failures in achievement situations should affect his instrumental effort to attain success and avoid failure. That is, the more he feels that these reinforcements are the consequence of his own behavior, the more he should feel that it is worth taking the initiative to obtain

these goals and the more effort and persistence he should show in his pursuit of them. Put conversely, the child who believes that other people or external circumstances control the reinforcements he receives, has little reason to exert effort toward the goal for he sees no connection between his own behavior and the acquisition of it.

I wish there were time to go into a description of the way in which measures of this variable have predicted approach toward academic and intellectual goals and measures of competence in those areas, but this would leave no time to get on to the antecedents of this orientation. So it will simply have to suffice to say that such prediction has been obtained in studies by Franklin (1963), James (1965), Cellura (1963), Chance (1965) and three done by our own group (Crandall, Katkovsky and Preston, 1962; Crandall, Katkovsky and Crandall, 1965; McGhee and Crandall, 1967, in press).

In fact, the report on Equality of Educational Opportunity, recently published by the Office of Education (Coleman, Hobson, McParland, Mood, Weinfeld, and York, 1966), showed that school achievement among children of minority groups is better predicted by this variable than by any of the many other attitudinal, familial, school and teacher variables studied.

As to antecedents of this orientation, Chance (1965) has reported boys' beliefs in internal control were significantly predicted by maternal permissiveness, early independence training

and mothers' flexibility of expectations for their children, but no significant relations were found for daughters'. Cromwell (1963) found that adult males who held internal control orientations perceived their mothers as having been less protective than did externals.

Achievement situations, of course, such as practicing to acquire a particular skill, involve the idea that what occurs is a function of the individual's own competence. Thus, the frequency with which the parent provides the child with such learning occasions may be one of the antecedents of a belief in internal control.

It also seemed that the extent to which parents are positively or negatively reinforcing in achievement situations might also be important. If the reinforcements which follow a child's achievement attempts are most often critical, it seemed that he might deny his responsibility for them in order to defend himself against the threat of punishment, or feelings of insecurity or inadequacy. When the reinforcements are positive, however, it seemed that he might maximize the link between his behavior and the pleasant outcome.

In addition, we thought that the degree to which the parent is, or is not, nurturant, supportive and accepting might be influential in the development of beliefs in internal control. If the child's errors and accidents result in impatience and rejection on the part of the parent, the child is apt to feel threatened,

respond defensively and attribute the error to an external source rather than himself. On the other hand, if the parent expresses tolerance and encouragement concerning the child's difficulties while he is learning, the child is more likely to feel secure enough to accept responsibility for whatever errors he makes.

Data relative to these parental characteristics were obtained in two separate studies.

Study A

Method

The sample used in the first investigation consisted of 23 boys and 18 girls and their mothers, all of whom were subjects in the Fels Research Institute's Longitudinal Study. The children were somewhat above average intellectually with a mean Stanford-Binet IQ of 117. They ranged in age from a little less than 7, to 12 1/2 years old. They were administered our measure of internal-external control of reinforcement orally and individually during their regular attendance at the Fels Summer Day Camp. The instrument is called the Intellectual Achievement Responsibility scale (IAR) and consists of 36 forced-choice items dealing with reinforcements exclusively in the intellectual-academic area of achievement. Each item stem describes either a positive or a negative achievement experience and is followed by two alternative reasons for its occurrence. One states that the event was caused by the child's behavior, while the other attributes the cause to

an external agent. For example, "When you do well on a test at school, is it more likely to be (a) because you studied hard, or (b) because the teacher gave an easy test?" Half of the item stems describe positive experiences like the one I just read, and the other half posit negative experiences. An example of a negative achievement item is, "When you find it hard to work arithmetic problems at school, is it usually (a) because the teacher gave hard problems, or (b) because you haven't tried hard enough to work them?"

The scale is scored in the internal direction and yields three scores: an I+ score consisting of the number of times the child credits himself as causing the positive reinforcements he receives, an I- score consisting of the number of times he accepts the blame for causing his negative reinforcements, and the sum of these two scores (Total I).

The parent measures consisted of ratings on nine of the Fels Parent Behavior Rating Scales or PBR's (Baldwin, Kalhorn & Breese, 1949). These ratings are made by a psychologist based on her observations of the mother's behaviors with her child in the home. She visits the home twice yearly as a routine part of the Fels Longitudinal Program. The ratings used for this investigation were the ones made closest to each child's sixth birthday. I am going to describe the nine PBR variables while I show you the rank order correlations between them and the internality scores.

/ MAY WE HAVE THE FIRST SLIDE, please? /

As you can see, in general, significant positive relations were found between the children's beliefs in internal control and the first four maternal variables..

General Babying refers to what is more often called nurturance, giving help to the child. A high rating means that the mother imposes more help on the child than he needs or wants. A low rating means that she withholds help when the child requests it or demonstrates a need for it. So, when the mother is especially helpful or nurturant, the child is more likely to feel that he causes the rewards and punishments he receives, especially the latter.

General Protectiveness is the extent to which the mother shelters the child from difficulties, discomforts, obstacles and hazards, or allows him to be exposed to them. Thus, again, the child whose mother is most protective is most likely to feel responsible for his own reinforcements, especially his negative reinforcements.

Affectionateness refers to warm and affectionate behavior on the high end to rejecting and hostile behavior on the low end. The more affectionate mother, then, is likely to have a child who can accept blame for his own failure, but affection does not relate significantly to perceptions about responsibility for positive reinforcements.

Direction of Criticism pertains to the degree to which the mother gives the child praise and approval vs. her use of criticism and disapproval. The high end is approval, the low end disapproval. The mother, then, who uses mostly positive verbal reinforcement has the child who perceives his own behavior as cauative. Here there is not quite so much difference between prediction to I+ and I-.

Perhaps you have already noticed that these first four predictive variables constitute a cluster of what might be called "positive" maternal behaviors, i.e. nurturance, protectiveness, affection and approval. I'll discuss the rest of the PBR's with the next slide.

/ MAY WE HAVE THE SECOND SLIDE, please? /

When we made separate analyses by sex of child, you can see that those four maternal behaviors were more predictive of the sons' beliefs in internal control than of the daughters'. You can also see quite readily here that mothers' behaviors were more closely associated with the ability to accept blame for one's own failures (I-) than with the assumption of credit for success experiences (I+).

A few of the other Parent Behavior Ratings correlated significantly with the IAR scores for the sexes separately so let me define the rest of them for you now.

Restrictiveness of Regulations deals with the number and repressiveness of the restrictions, prohibitions and regulations which the mother imposes on the child. This didn't correlate significantly for either sex.

Severity of Punishment deals with the mother's punitive behavior when the child misbehaves, ranging from frequent and severe penalties to few and mild negative sanctions. For the girls, the more punitive the mother, the more the girl felt others were in control of her success experiences.

Clarity of Policy refers to the degree to which requirements and standards are communicated clearly and explicitly to the child or are vague, unformulated or inconsistent. As you can see, there are no significant correlations for either sex.

Coerciveness of Suggestions refers to the degree to which the mother demands immediate obedience or leaves compliance to the child's option; parental attempts toward authoritarian control. Again, girls whose mothers are coercive believe that others are responsible for the good things that happen to them.

Accelerational Attempts refers to the frequency with which the mother provides regular and vigorous training in skills to foster the development of more advanced levels of performance. As you can see, the correlations with accelerational attempts only reached minimal significance in one case, the I- subscore for the boys. You will remember that we had thought that the more

frequently a mother provided such achievement experiences, the more the child might make the connection between his own behavior and the reinforcements he received, but this hypothesis wasn't very strongly supported.

Study B

Method

The second investigation was concerned with data obtained from 40 families, 20 girls and 20 boys and each child's mother and father. There was an overlap of approximately one-half of the children and mothers in this study with those in the sample for the first study. The additional families were not members of the Fels Longitudinal Study, but had been especially recruited for our larger project concerned with the development of children's achievement behavior. All children in this study were distributed equally in the second, third and fourth grades and were again intellectually superior to national norms with a mean Stanford-Binet IQ of 124.

The IAR was administered orally and individually to these children at the Institute.

Both parents of each child were interviewed separately but concurrently about several aspects of their relationships with their children. The interviews were semi-structured, lasted approximately two and one-half hours and were recorded. The variables pertinent to the present study and rated from information

obtained in these interviews consisted of four characteristics of the general parent-child relationship. These were affection, nurturance, dominance and rejection.

Affection referred to the amount of affection and acceptance the parent appeared to feel and reported expressing overtly to his child.

Nurturance assessed the frequency and quality of emotional support and instrumental help given the child by the parent.

Dominance dealt with the frequency and intensity of the parent's attempts to influence and control the child through rules and regulations.

Rejection referred to the frequency and intensity of the parent's direct criticisms and punishments of his child.

Inter-rater reliability ranged from .48 to .87 with a median of .76.

A Parent Reaction Questionnaire was also given to these parents. It consisted of their reported responses to the child's achievement behaviors in four achievement areas, intellectual, physical skills, mechanical and artistic. The total questionnaire consisted of 48 items but only the 12 items concerned with the intellectual area were used in these analyses since the IAR deals exclusively with intellectual achievement situations. Each item stem described a typical situation in which a child exhibits achievement behavior. The stem was followed by a number of

alternatives from which the parent was asked to select his two most typical reactions in similar situations and to indicate by ranking them, which of the two he more often used. The alternatives for each item included positive, praising reactions; negative, critical reactions; and a neutral reaction. For example:

When X was doing schoolwork at home:

(a) I told him I was very pleased with his progress. (P)

(b) I showed him some of his mistakes. (N)

(c) I told him to try to work harder at it than he did. (N)

(d) I was too busy to pay much attention to what he was doing. (Neutral)

(e) I told him I was glad he was interested in his schoolwork. (P)

Results

The analyses of the IAR scores and the interview ratings of the parent-child relationship are shown in the next slide.

/MAY WE HAVE THE THIRD SLIDE, please?/

Consistent with the PBR findings in the first study, mothers' nurturance of their sons was positively correlated with the degree to which their sons generally assumed responsibility for what happens to them and, in particular, their ability to assume blame for failures. The rejection of both parents has greater impact on the girls' beliefs than on those of the boys, especially on their beliefs in the agents who cause their successes. Girls with more

rejecting mothers and fathers were more likely to believe that other people must have been responsible for their intellectual successes. Also, mothers who were highly dominating, controlling, had daughters who were less likely to believe that they had caused their own reinforcements.

While mothers' affection and nurturance here and in the PBR data correlate in a positive direction with their sons' beliefs in internal control, the reverse was found between fathers and their daughters, at least relative to unsuccessful intellectual events. That is, the more affectionate and nurturant the father, the more his daughter blamed others for her failures in intellectual situations.

Correlations between scores on the Parent Reaction Questionnaire and the IAR are on the next slide.

/MAY WE HAVE SLIDE FOUR, please?/

These analyses generally indicate that fathers' praise encourages, and their criticism discourages, the development of beliefs in internal control. Mothers' praise and criticism, however, appear to have little effect on their children's beliefs.

/MAY WE HAVE SLIDE FIVE, please?/

When we broke this analysis down by sex, these generalizations hold up pretty much for both sexes. The strongest relation is shown between the girls' claiming of self-credit for their successes and the amount of positive reinforcement given them by

their fathers. Notice, however, the -.22 correlation between fathers' positive reactions and I- for the girls'. As with fathers' affection and nurturance from the interview data, fathers' praise also seems to militate somewhat against, rather than toward, the daughter's ability to accept blame.

For the boys, only one correlation reaches the level of a .10 trend, but they all reveal consistently positive relations between parental praise and the boys' beliefs in internal control, and consistently negative correlations between parental negative reactions and sons' internal scores.

Discussion

Now, to summarize and pull this together, the relations which stand out most strongly in the two studies are between children's beliefs in their own control of reinforcements and the degree to which their parents are protective, nurturant, approving, affectionate, etc. Consistent with Chance's findings, data from the Parent Behavior Ratings, the interviews and the questionnaires, in general, demonstrate that the parents who maintain supportive, positive relationships with their children are more likely to foster beliefs in internal control than are parents whose relationships are punitive, rejecting and critical. The one exception is between father and daughter, in that highly affectionate and nurturant paternal behaviors seem to militate against the development of the

girls' abilities to assume responsibility for their own failures. It may be that the father who is especially loving and helpful to his daughter intentionally or inadvertantly encourages external thinking to provide her with a cushion to defend herself against failures.

The correlations between parents' babying, protectiveness, affectionateness and nurturance are somewhat higher and more frequent with I- scores than with I+ scores. Apparently the security provided by the loving, non-threatening parent is especially necessary for the child to be able to internalize the responsibility for the negative reinforcements he receives.

It will probably have been noted that significant correlations did not occur as frequently among the interview and questionnaire data as among the PBR data. It seems possible that this may be a function of the self-report nature of the interview and questionnaire as opposed to the direct observations of maternal behavior upon which the PBR ratings are based. Nevertheless, it was possible to give the interviews and questionnaires to <u>both</u> mothers and fathers and the data from those provide a comparison between the influence of the parents of the two sexes. Here the significant correlations occurred <u>more</u> often with paternal variables than with maternal variables. This suggests the possibility that fathers' behaviors and relationships with their children may perhaps be even more potent sources of influence on their children's

internal-external orientations than are those of mothers. It might even be that if father-child interactions could be observed directly, as was the case with the mother-child PBR's, the fathers' behaviors might prove to be as highly predictive of the children's orientations as were the mothers'.

Many other parental behaviors, not investigated in the studies reported here, are certainly likely to play a part in the development of children's beliefs in internal-external control. Three parental influences which occur to us as worthy of investigation are the parent's direct teaching of ideas concerning reinforcement responsibility, the parent's reinforcement of his child's verbalizations of internal and external beliefs, and finally, the parent's own internal-external orientation as it constitutes a model for the child.

References

Baldwin, A., Kalhorn, Joan, & Breese, Fay. The appraisal of parent behavior. Psychol. Monogr., 1949, 63, Whole No. 299.

Cellura, A. R. Internality as a determinant of academic achievement in low SES adolescents. Unpublished manuscript, University of Rochester, 1963.

Chance, June E. Internal control of reinforcements and the school learning process. Paper given at Society for Research in Child Development, Minneapolis, 1965.

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., & York, R. L. Equality of educational opportunity. Superintendent of Documents, Catalog No. F S 5.238: 38001, U. S. Government Printing Office, Washington, D. C.

Crandall, Virginia C., Katkovsky, W., & Crandall, V. J. Children's beliefs in their own control of reinforcements in intellectual-academic achievement situations. Child Develp., 1965, 36, 91-109.

Crandall, V. J., Katkovsky, W., & Preston, Anne. Motivational and ability determinants of young children's intellectual achievement behaviors. Child Develp., 1962, 33, 643-661.

Cromwell, R. L. A social learning approach to mental retardation. In N. L. Ellis (Ed.), Handbook of mental deficiency. New York: McGraw-Hill, 1963.

References
(cont.)

Franklin, R. D. Youths' expectancies about internal versus external control of reinforcement related to N variables. Unpublished doctoral dissertation, Purdue University, 1963.

James, W. H. The application of Rotter's social learning theory in educational settings. Paper given at Society for Research in Child Development, Minneapolis, 1965.

Lefcourt, H. M. Internal versus external control of reinforcement: A review. Psychol. Bull., 1966, 65, 206-220.

McGhee, P., & Crandall, Virginia C. Beliefs in internal-external control of reinforcements and academic performance. Child Develp., 1967, in press.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychol. Monogr., 1966, 80, No. 1. (Whole No. 609).

Winer, B. J. Statistical Principles in Experimental Design. New York: McGraw-Hill, 1962.

Footnote

[1] This study was supported by USPHS Grants MH-02238 and FR-00222. The authors gratefully acknowledge the assistance and suggestions of Anne Preston in carrying out the studies reported in this paper.

Slide 1

Correlations between Parent Behavior Ratings and Children's IAR Scores

	I+	I-	Total I
General Babying	.44**	.68***	.64***
General Protectiveness	.49**	.67***	.64***
Affectionateness	.14	.46**	.38*
Direction of Criticism (approval)	.44**	.56***	.57***
Restrictiveness of Regulations	-.06	.25	.09
Severity of Punishment	-.21	.00	-.13
Clarity of Policy	-.04	-.20	-.13
Coerciveness of Suggestions	-.12	.02	.07
Accelerational Attempts	.21	.22	.17

* $p < .05$

** $p < .01$

*** $p < .001$

Note: All tests of significance are two-tailed.

Slide 2

Correlations between

Parent Behavior Ratings and Children's IAR Scores

Boys N = 23	I+	I-	Total I
General Babying	.34	.62**	.54**
General Protectiveness	.52*	.71***	.66***
Affectionateness	.18	.48*	.39#
Direction of Criticism (approval)	.45*	.65***	.63**
Restrictiveness of Regulations	.05	.14	.07
Severity of Punishment	-.11	-.14	-.17
Clarity of Policy	.13	.04	.05
Coerciveness of Suggestions	.01	-.02	-.01
Accelerational Attempts	.32	.38#	.33
Girls N = 18			
General Babying	.39	.42#	.45#
General Protectiveness	.29	.50*	.45#
Affectionateness	.09	.42#	.35
Direction of Criticism (approval)	.29	.39	.41#
Restrictiveness of Regulations	-.28	.22	-.02
Severity of Punishment	-.43#	.11	-.20
Clarity of Policy	-.11	-.34	-.17
Coerciveness of Suggestions	-.47*	-.14	-.39
Accelerational Attempts	-.01	-.04	-.08

# $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

Note: All tests of significance are two-tailed

Slide 3

Correlations between Parent-Child Relationship Variables and Children's IAR Scores

Boys N = 20	I+	I-	Total I
Mother's affection	.28	.29	.31
Mother's nurturance	.14	.40#	.44#
Mother's dominance	.21	-.14	.02
Mother's rejection	.17	.04	.06
Father's affection	-.16	.25	.16
Father's nurturance	.01	.27	.23
Father's dominance	.03	.21	.18
Father's rejection	-.33	.03	-.03
Girls N = 20			
Mother's affection	.19	.05	.16
Mother's nurturance	.17	-.33	-.11
Mother's dominance	-.09	-.31	-.43#
Mother's rejection	-.66**	-.20	-.61**
Father's affection	.37	-.48*	-.13
Father's nurturance	.34	-.40#	-.11
Father's dominance	-.20	-.27	-.29
Father's rejection	-.45*	-.13	-.42#

\# $p < .10$

* $p < .05$

** $p < .01$

Note: All tests of significance are two-tailed

Slide 4

Correlations between

Parent Reaction Questionnaire and Children's IAR Scores

	I+	I-	Total I
Mother's positive reactions	.08	.11	.12
Father's positive reactions	.35*	.13	.27#
Mother's negative reactions	-.12	-.02	-.09
Father's negative reactions	-.30#	-.40*	-.41**

# $p < .10$

* $p < .05$

** $p < .01$

Note: All tests of significance are two-tailed

Slide 5

Correlations between

Parent Reaction Questionnaire and Children's IAR Scores

Boys N = 20	I+	I-	Total I
Mother's positive reactions	.20	.18	.22
Father's positive reactions	.18	.27	.25
Mother's negative reactions	-.18	-.21	-.24
Father's negative reactions	-.33	-.39#	-.42#
Girls N = 20			
Mother's positive reactions	-.03	.03	-.01
Father's positive reactions	.59**	-.22	.25
Mother's negative reactions	-.11	.12	.01
Father's negative reactions	-.27	-.27	-.25

# $p < .10$

* $p < .05$

** $p < .01$

Note: All tests of significance are two-tailed