The objective of this study was to develop a low-cost predictive and observational tool for the early detection of disturbed children and the prevention of childhood mental illness. A self-administered questionnaire with approximately 30 items was filled out by parents concerning their children before the child entered nursery school. Following entry into school and again at the end of the semester, the teacher completed a 1-paragraph description of each child according to the parameters outlined in the behavior inventory guideline. On the basis of parent questionnaires and teacher behavior inventories, independent raters experienced in early childhood development and the psychopathology of childhood made predictions about the child's probable emotional difficulties, based on a 4-point scale, 0 to 3. In a sample study, at the end of the first two weeks of school, 4 out of 14 were correct within one rank of prediction of emotional problems including separation problems. By the end of the first semester of school, thirteen out of fourteen were correct within one rank of prediction. It is suggested that this method may be an improvement over the transcribe-interview method used in previous prediction studies. (CS)
PREDICTION STUDY OF SEPARATION AND OTHER EMOTIONAL PROBLEMS AMONG NURSERY SCHOOL CHILDREN

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"It has been established that during the future careers of any class of forty children, seventeen to twenty-six of them will ultimately be disturbed by conditions ranging from chronic unhappiness to criminal behavior or insanity. In any random sampling of one hundred typical children one or two will commit major crimes and serve time in jail; eight to ten of them will become seriously ill mentally and have to be admitted for treatment; three to four will be too retarded to become self-supporting unless they receive specialized training; thirty to fifty of them will be sufficiently maladjusted to add to the statistics of petty crime, vocational failure, chronic unemployment, emotional instability, marital unhappiness or divorce, or other expressions of failure."
(Rogers, 1957)

Prevention of childhood mental illness is magnified and perpetuated when the effectiveness of preventive measures can be demonstrated to those who control society's pursestrings and future practices. A happily strategic scientific and political arena is the entry of millions of children into private and public nursery schools, Headstart programs, and kindergartens—an arena when emotional disorders begin to reach out of the family and into the larger social world. Problems upon school entry are one of the most common harbingers of more serious illness to come.

Hypothesis: By using a questionnaire with approximately thirty items to be filled out by parents concerning their child before the child enters nursery school, an independent rater can predict whether the child would have separation problems which would be observable and observed by the teachers within the first two weeks of school, and whether the child would have other emotional problems which the teachers could observe in the first two weeks of school.

Procedure: A questionnaire has been designed which has taken into account the parent's ability to describe the child's personality—using this as an indication of whether a good rapport exists between the parents and the child. The questionnaire has items designed to make it possible to rate the child's functioning with peers, experience with prior separation from parents, prior separation from home, degree of neighborhood and out-of-home social experience, degree of out-of-neighborhood social experience, frequency of medically enforced separations from parents, frequency of prior hospitalization, illnesses in the family, deaths in the family, and a short list of neurotic traits. Also indicated on the ques-
tionnaire are the child's executive ego functions to some extent, such as the ability to communicate verbally, dress himself, and care for toilet functions independently. In addition, items are designed to elicit the parents' knowledge of the child's own attitude toward going to school, towards growing up, and to new environments. The parents' own attitude towards the child going to school is elicited and the parents' attitude toward the child in terms of a predominant conveying of the child's assets or a predominant conveying of the child's troubles.

On the basis of this questionnaire, the independent raters can make a prediction about the child's emotional difficulties on a four point scale, 0 to 3 (0 = no difficulty, 1 = mild difficulty, 2 = moderate difficulty, 3 = severe difficulty), as they would be observed by the teachers in the nursery school. The predictions are to be made prior to the child's entry into nursery school and are not to be communicated to the parents, children, or teachers. The independent rater is to have no contact with any of the parents or children, and is never present in the classroom.

Following entry into school, teacher's accounts are to be dictated concerning the child's attitude toward leaving his mother as well as his general behavior in the first few days and first two weeks of nursery school. This account is to be made at the end of the first two weeks of school. The dictation is to include reference to the child's play with the other children, interactions with the mother, toileting behavior, eating behavior, dressing behavior, creative activities, relationships with the teachers, and participation in group play. A teacher check list will also be used to insure the inclusion of all important diagnostic items readily observable by the teachers.

An independent rater, different from the one who rated the parent questionnaires, but who also has had no contact with the children or parents or teachers will then rate the teacher observations on the same four point scale.

At the end of the first semester, the teachers will dictate another report on each child as was described above. A third independent rater who also has had no contact with the children, parents, or teachers will rate this teacher observation report on the same four point scale.

Each child will be assigned a code number, which will be different in all three ratings from the code number previously used.

The lack of communication between the independent raters and
the teachers and parents as well as the separate coding system is to prevent self-gratifying skewing of the data.

Correlations between the predictions from the questionnaire and the ratings from the teachers' reports are to be done after the teachers' reports are completed.

For purposes of this study independent raters will be experienced both in early childhood development and the psychopathology of childhood.

There are many factors to be used by the independent raters when the prediction is made concerning separation and other emotional problems using the questionnaire data. While it is not possible to anticipate all the data which may arise from parental responses to the questionnaire, some of the general categories to be considered are:

- The quality of object relations with parents
- The quality of object relations with peers
- The quality of object relations with siblings
- The quality of object relations with adults
- The quality and timing of prior separation experience
- The parental furtherings of independence
- The parental attitudes and expectations regarding separation
- The presence or absence of neurotic symptoms or traits
- The evidence that severe developmental difficulty was present in the past
- The evidence that severe developmental difficulty is present now.

In the description of the child by the mother (or occasionally, the father), it is possible to learn a good deal about the parents' affect toward the child, various parental attitudes toward the child, as well as the parental degree of rapport with the child. Some clues may be gained:

To the child's ability to accept limits which will be imposed by the school
To special assets such as sublimatory activities already present which should be taken into account

About problems with aggressive impulses

About problems with libidinal impulses.

Since separation problems occurring within the first two weeks of school are readily observable, heavy emphasis is given to evidence of successful prior separations and successful social relationships with peers. It is expected that the child who has a positive attitude toward school will be more likely than children with converse factors to make a successful adaptation to separation. It is possible that a child with considerable separation experience may adapt quite well to the separation from his home in the first weeks of nursery school and yet during the same period will be manifestly suffering from other forms of emotional disability which do not take the form of separation difficulty. Evidence for such possibly distinct problems will be found in the items concerning enuresis and other emotional problems.

Review of the Literature: The problem of prediction has of course brought much significance in psychology from a scientific systems-building point of view as well as a practical clinical point of view. There is a tendency for psychologists, and particularly psychoanalysts to be apologetic about the primitive state of their science, and thus place a great deal of emphasis upon studies which have the possibility of testing the predictive value of a particular theory. This tendency is perfectly proper, and not simply defensive in nature, and provides a balance to the usually retrospective quality of clinical psychological studies.

An excellent review of broad predictive study is given by Escalona in Prediction and Outcome. The particular kind of prediction being attempted in the current study is much narrower in scope than Escalona's efforts to predict general personality trends by immediate neonatal measurements and inference. There are precedents, however, for the current endeavor and some of the precedents are very comparable in topics and instruments used for prediction.

First, regarding the question of what is being measured (the topic) there is ample precedent for the use of parent and teacher information when assessing the mental health of preschool children. The general question of reliability of such reports has been dealt with by Thomas, Chess, Birch, Hertzig, and Korn (1963).

The general question of validity of teacher reports concerning
the emotional health of young children has been studied a number of times (Ullman, 1957; Bower, 1960; Ewald, 1955; Harper and Wright, 1957). The correlation of teacher ratings with the ratings of clinicians was best studied by Ullman who found (as did Kliman and other investigators) that teachers identified eight percent of their pupils as maladjusted, and that their ratings correlated .86 with the ratings of clinicians, a highly significant correlation.

The entire literature, including a quick critical review of predictive efforts beyond infancy can be found in Benjamin's "Prediction and Psychopathologic Theory." Particularly close to the current study is a still unpublished project on "Prediction on Underachievement in Kindergarten Children" (Cohen). This study was conducted with the hypothesis that using observations of the teachers, psychologists, and child psychiatrists of a team, the team could predict which kindergarten children would learn to the IQ potential in first grade the next year. By observing the five year old kindergarteners' behavior, it was further hypothesized that specific reading and arithmetic difficulties could be predicted. Fifty-six kindergarten children were studied, none of them in any psychiatric treatment, none having any known brain damage, psychopathy, psychosis, or mental retardation. The data used for predictive inferences included a developmental history on each child, which was obtained by using a questionnaire developed by the kindergarten teacher and the principal. Direct classroom observation by the psychiatrist was added to the data. Furthermore, the psychologist gave each child a WISC, a "House, Tree Person," a Bender-Gestalt, and Rorschach Test.

The psychiatrist also used a standard play situation for each child alone in a playroom with standard equipment.

A complicated set of estimates were made of the child's developmental status, as was his estimated IQ and potential IQ.

One year later after seventy percent of the first grade was completed a test very comparable to the WISC was given and the score was compared with the potential IQ derived from previous testings. A predicted score was derived by adding +.2 or -.2 to the grade level score for every ten points above or below an IQ of 100. Thus where the grade level was 1.7 for a child with an IQ of 120 the predicted score would be 2.1, and a child with an IQ of 89 would achieve a predicted score of 1.5. By this means children could be grouped into "underachievers," "average achievers," and "overachievers," the latter being those who scored over .2 by their predicted score.

Another thirty-one children were available for scrutiny in the second grade to show improvement from first to second grade.
The children the psychiatrist thought would underachieve did prove to be underachievers as based on predicted scores derived from their IQ tests. The children the psychiatrist thought would work up to or beyond their potential did do so. The success in prediction far exceeded what could have been achieved by random distribution of guesses. The teacher's prediction, however, was considerably better than the psychiatrist's. The psychiatrist had a P of less than .05 whereas the teacher's prediction of achievement had a P of less .0005. The psychologist was intermediate with a P of less than .005. The three predictions certainly proved the hypothesis that this team and individual members of it, could predict which kindergarten children could learn up to their IQ potential in first grade. However, the psychiatrist's predictions suffered from a general problem of tending to predict underachievement more frequently than it actually occurred. In this school only eight children were considered underachievers, whereas twenty-one were average-achievers and twenty-seven were overachievers. The raters predicted seven children would be underachievers, were wrong about two of the cases, and missed three. On the other hand they agreed on thirty positive cases and were wrong on two of them.

What impressed the researcher most about this study was how well the kindergarten teacher did just as well alone as all three raters combined. From the school's practical standpoint, her judgments were not only economical and efficient, but more accurate in prediction of positive and negative achievement than the judgments and predictions of her more technically skilled colleagues.

An immediate predecessor of the current study was a "Prediction of Separation Problems and Other Emotional Problems Among Nursery School Children" (Kliman, Kliman, Ronald, & Burian, 1964, unpublished). In that study the investigators found that they could predict both separation and general emotional problems other than separation problems. These predictions were successful. Thirteen out of fifteen predictions of emotional problems in general were correct to within one rank when comparing predictions made before school with teacher's detailed descriptions at the end of two weeks and making judgments based on those predictions. Prediction of separation problems was almost fully successful, twelve of the fifteen predictions were correct to within one rank.

The current study is an effort to make the prediction and the check on prediction process more practical, though building on the prior study. The questionnaire to be filled out by parents is essentially the same one originally devised by the researcher for a "Death of a Parent Study" in 1959, and modified for the 1964 prediction of emotional problems study. It is still
used as a self-administered questionnaire to be filled out before school starts. The data are then used to make a prediction on a 0 to 3 scale of prediction of emotional problems. In contrast to the earlier prediction study a new instrument for the follow up was used. In the earlier study, extremely lengthy interviews were conducted by one of the principal investigators with the children's teacher. These interviews took up to half an hour for each child, were tape recorded, and then rated by the psychiatrist who read the typed transcript. The rating was done without the psychiatrist having any knowledge of the identity of the children, or of their pre-class rating.

Because such lengthy interviewing, transcribing, and rating from transcriptions would obviously cancel the economical and efficient use of predictions for preventive or public health purposes, the researcher set out on the current study. The precedent for development of a behavioral inventory was the Burdock and Hardesty Behavior Inventory which has been standardized for children of preschool age, as well as older children.
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<th>Parent Questionnaire</th>
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The parent questionnaire was rated by the author.

The two-week followup teacher rating was rated by an independent nursery school director.

The teacher rating at the end of the first semester was rated by an independent child psychiatrist.

*Ratings: 0 = no pathology 1 = mild pathology
2 = moderate pathology 3 = severe pathology
Results: When all the ratings were finished the data obtained was compared. Correlations between the predictions from the questionnaire and the ratings from the teachers' reports were as follows:

End of first two weeks of school: Fourteen out of fourteen were correct within one rank of prediction of emotional problems including separation problems. Of those fourteen ten were correct in the same rank. (Correct within one rank means that, for example, a prediction of 2 emotional problem correlated with a prediction for 1 or 3 emotional problem according to the rating of the teachers' reports. Correct in the same rank means that, for example, a 2 prediction from the questionnaire correlated with a 2 prediction from rating of the teacher reports.) The statistical significance within one rank was .0001 or less than 1 chance in 10,000 that this correlation could have happened by chance.

End of the first semester of school: Thirteen out of fourteen were correct within one rank of prediction. Of those thirteen, six were correct in the same rank. The statistical significance within one rank was .001 or less than 1 chance in 1,000 that this correlation could have happened by chance.

It seems apparent from the results that a notable advance has been made over the previous prediction study. In contrast to the dozens of pages of transcribed interview material concerning a class of fifteen children (about forty typewritten pages), the teachers were able to give a one paragraph description of each child while taking into account the parameters outlined in the behavior inventory. The material emerging was sufficiently clear to permit accurate prediction and correlation with a child psychiatrist using the one paragraph teacher description to judge the children's behavior in the nursery school. The capacity to use a parent self-administered questionnaire and a teacher self-administered behavior inventory, self-condensed by the teachers into one paragraph moves us another significant step closer to possession of preventively useful, low-cost predictive and observational tools for the detection of vulnerable and disturbed children.
BIBLIOGRAPHY

Benjamin, J.D.: "Prediction and Psychopathologic Theory"


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