

# THE ROLE OF SELF-UNDERSTANDING IN THE PREDICTION OF BEHAVIOR

By CARL R. ROGERS, BILL L. KELL,

THE UNIVERSITY OF CHICAGO

AND

HELEN McNEIL

BUREAU OF JUVENILE RESEARCH  
COLUMBUS, OHIO

A NUMBER of years ago a study in prediction of the behavior and adjustment of delinquent adolescents was made by Kell [3] under the supervision of the senior author. The major finding of the study was so striking and so unexpected that the completed research was laid aside until it might be confirmed or disproved by additional work. Later Miss McNeil repeated the identical method of study on a new group of cases [4] with results which confirmed, though less strikingly, the same findings. It now appears appropriate to present these two studies in somewhat condensed form, together with some of the implications which they seem to have for clinical practice and personality research.

## THE HYPOTHESIS

The hypothesis was the same in both studies. It was that given sufficient information concerning the factors which presumably enter into the determination of an individual's behavior, it should be possible to make ratings of these factors which would predict with some degree of accuracy the individual's later adjustment. More specifically, given information regarding an individual's heredity, physical condition, mental status, family environment, cultural background, social experience, educational experience, and self-insight, it should be possible to rate these factors as to their favorableness for normal development, and on the basis of

these ratings, predict future adjustment. If behavior is caused by factors such as those listed, then an evaluation of such factors should provide a basis for estimating the type of behavioral adjustment which is likely to ensue.

## THE PLAN OF THE STUDIES

The plan of both studies was identical and contained the following general elements.

1. To select a group of delinquent children for whom there was an adequate amount of diagnostic information, and follow-up reports of adjustment covering a period of approximately two years following the initial study.

2. To make ratings of the various factors which might determine behavior, by means of the so-called "Component Factor Method" (described below), these ratings to be entirely on the basis of information available at the time of the initial study, without any reference to the follow-up data.

3. To make independent ratings of the adjustment of the individual two years after the diagnostic study, these ratings to be made without reference to the information obtained in the diagnostic evaluation.

4. To analyze the material for possible correlations between each component factor and later adjustment, also for correlations between all the factors taken together and later adjustment. To consider whether the behavior of these delinquents might have been in

any way predicted by this method, from the information available at the time of the initial study.

The way in which these steps were carried out is presented in some detail in the sections which follow.

#### THE SELECTION OF THE GROUPS

The cases which were used in this study were obtained from the files of the Bureau of Juvenile Research, Columbus, Ohio, and it was due to the wholehearted cooperation of this organization that the research was possible. The procedure was as follows. Mr. Kell went over a few cases to see whether the information contained in the case histories and in the follow-up files was adequate for the type of analysis which he wished to make. It appeared that in many cases the information was adequate for his purposes. None of these preliminary cases was used in the research. He then took 155 cases which had been studied by the BJR after June 1937, and on which there was reported to be follow-up information two to three years after the diagnostic study. Cases were selected at random except that there was some perusal of the follow-up reports to make sure that both failures and successes in adjustment were being included. This was the only contact with the follow-up reports prior to the specific study of the follow-up material reported later.

When the Component Factor ratings were made on these 155 cases, it was found that the information was inadequate in 71 cases, and these were dropped. In making the ratings on follow-up adjustment, information was found to be inadequate in 9 additional cases, thus bringing the total number included in the research to 75. It does not appear that lack of information in the case record would be a selective factor related to the problems being stud-

ied in this research.

In the study made by Miss McNeil, 141 cases were initially selected, the criteria being similar, with the added item that they should all be new cases which had not been utilized in the Kell study. She found it necessary to drop out 65 cases because of inadequate information, thus leaving 76 individuals in her group. Thus in the two studies taken together there are 151 individuals on whom the reported findings are based.

Certain general facts about the two groups are listed in Table I.

TABLE I  
CHARACTERISTICS OF THE GROUPS INCLUDED IN  
THE KELL AND MCNEIL STUDIES

|  | Kell's<br>Group | McNeil's<br>Group |
|--|-----------------|-------------------|
| Average age at time<br>of diagnostic study | 15-2            | 14-6              |
| Range in age .....                         | 8-9 to 17-11    | 7-9 to 18-1       |
| Number of boys .....                       | 57              | 59                |
| Number of girls ....                       | 18              | 17                |
| Whites .....                               | 65              | 66                |
| Negroes .....                              | 10              | 10                |
| Average intelligence<br>quotient .....     | 94              | 90                |
| Range in I.Q. ....                         | 45 to 136       | 41 to 140         |
| From rural homes                           | unknown         | 9                 |
| From urban homes                           | unknown         | 67                |

In an analysis made of Miss McNeil's group it was found that the behavior difficulties were those that we have come to regard as typical of a juvenile delinquent group — stealing, truancy from school and home, incorrigible behavior, untruthfulness, and sex misdemeanors heading the list of complaints. There were 27 of the group who had previously been in court. Broken and discordant homes were the rule, and more than half of the group had had some foster home or institutional experience away from their own home. In general it may be said that the adolescents included in the study appear to be

typical of individuals coming to a juvenile court or behavior clinic.

#### THE RATING OF COMPONENT FACTORS

When the groups had been selected the next step was to rate those factors in the child's background and experience which might presumably be related to future behavior and adjustment. For this purpose the component factor method of case analysis, devised by Rogers and the staff of the Rochester Guidance Center, and described in an earlier publication [5, ch. 3] was used. Since the findings are in terms of the categories used in this device, some description of it is given here, though for a full account of its development or its use in other research [3, 2], the reader is referred elsewhere.

The rationale behind this method of rating and analysis, and a brief description of the method, is given by Rogers in the following statement:

Behavior problems are due to the fact that a child of certain hereditary equipment is dealt with in a certain manner by members of his family environment and at the same time affected by certain broader cultural and social influences. If any one of these elements is altered, the behavior picture is also altered. To understand behavior we must view it as the complex result of all these component factors. Thus in the method under consideration, the forces which have operated in the child's experience are grouped under eight factors, defined so far as possible in terms which will have general understanding. Each of these factors . . . is rated in the case of the individual child on a seven point scale, ranging from influences which are destructive to the child's welfare, to conditions and forces ideal for the child's adjustment. This rating scale is made more objective by means of sample ratings, with experimentally determined values, set up as guideposts. [5, p. 40-41]

The eight factors which are to be rated on the basis of material in the case history are defined in specific terms. For each factor there are also

a series of illustrative ratings, taken from cases, and showing the average scale value which was given to the material by six clinician judges. The definitions to be kept in mind by the rater are stated below as given in the original description by Rogers, and as used by Kell and McNeil in these studies. In the interests of brevity the illustrative ratings have been omitted, except for the family factor, the factor of social experience, and the factor of self-insight. These are included to show the type of guide which was available to the rater.

#### *Rating on Hereditary Factor*

Consider the child's strain of inheritance, as evidenced by parents, relatives, siblings; hereditary predisposition to disease; feeble-mindedness, epilepsy, or psychoses in the ancestry; evidence of neuroses or physical or emotional instability in the ancestry; marked social inadequacy in the ancestry as shown by chronic alcoholism, repeated jail terms. On the constructive side consider freedom from disease and taints and marked social adequacy.

#### *Rating on Physical Factors*

Consider the child's inherited physical and neurological constitution; his physical development, size and weight in relation to norm; physical defects, inferiorities, or abnormalities; glandular dysfunction; physical instability, nervousness, hyperactivity; disease history, with special attention to long periods of illness, or diseases such as tuberculosis, epilepsy, encephalitis, venereal disease, chorea; defects of the special senses. On the constructive side consider freedom from illness or defects, superior physique.

#### *Rating on Mentality Factor*

Consider the child's mental capacities as shown by his development, intelligence test ratings, school achievement, vocational achievement. Consider special abilities and disabilities which have a bearing on his mental functioning. Consider the quality of his intelligence, alertness, persistence, ability to concentrate.

#### *Rating on Family Influences*

Consider the family circle within which the child has developed—the attitudes which have surrounded him. Consider the emotional at-

mosphere within the home—marital discord or harmony, sibling rivalries, attitudes of domination, oversolicitude, rejection, or normal parental love. Frictions or conflicts in regard to illegitimacy or other family irregularity. The child's reaction to the home is also to be considered—reactions toward parents and siblings, toward family standards and discipline. Degree of community of interests with other members of the family.

#### *Illustrative Ratings—Family*

- 3 Mother quite openly immoral, father a weak individual who plays little part at home except when drunk when there are terrific quarrels. Mother controls children by beatings. They are at least partially aware of her immorality.
- 2 Parents not congenial; whole home dominated by father who is rigid, puritanical, and uses excessive discipline. He favors daughter and rejects this boy. Home atmosphere very tense. Mother furtively takes the boy's side.
- 1 Father died when child in infancy. Mother centers all her attention and affection on this only child. Mother is extremely oversolicitous and overindulgent, and has few outside interests.
- 0 This boy is somewhat his father's favorite, and being the oldest child, tends to dominate his younger sibs. Parents are both interested in the home, seem happy together, and have a great deal of affection for their children.
- +3 Parents are very congenial. Family atmosphere harmonious and pleasant. Many special interests and activities fostered by parents. Children encouraged to develop independence. This child feels very secure in the parental affection.

#### *Rating on Economic and Cultural Influences*

Consider the family income, status of father's occupation, social standing in the community, degree of comfort and educative influences within the home; consider the community type—whether delinquency area, residential area, rural area; consider the community standards of behavior and culture; the school, libraries, and recreational resources available.

#### *Rating on the Social Factor*

Consider range and extent of child's social experience; isolation or group contacts; the type of companions available, the social skills

the child has achieved considered in relation to his age; experience in group membership and leadership; organizing ability and social initiative; status in the schoolroom group; friendships with own and opposite sex, considered in relation to age; social relationships with adults; social adjustment to the neighborhood and community; general social maturity or lack of it.

#### *Illustrative Ratings—Social*

- 3 This child is the sissy of the neighborhood—picked on by other boys, unhappy when with them. At school gets on satisfactorily, is well liked by the teacher, has trouble at recess. Has no real friends, but spends most of his free time with his sister three years younger.
- 2 Child has always been kept from much contact with other children; in a group is shy, backward, cannot play games; has two friends younger than self; gets on easily with adults.
- 1 This girl belongs to a YW club, attends irregularly, prefers to stay by herself and read; is a passively accepted individual in the schoolroom; has some companions in the neighborhood but no close friends.
- 0 Boy 13, belongs to no organized club or gang. He has one chum with whom he goes to the movies, builds model planes, etc. Friendly with his school and neighborhood group. Plays on corner lot when urged by the group.
- +1 Boy 12, enthusiastic Scout, member of his grade team at school, lives in isolated home, and has few neighborhood companions, goes to visit one of his Scout friends frequently. Is fair in baseball and swimming.
- +3 This girl is president of her high school class, popular at parties, interested in boys, has a girl chum who has been her companion for years; has taken an active part in school athletics.

#### *Rating on Education—Training—Supervision*

Consider the education, training, and supervision the child has had outside the home. Ordinarily this will mean primarily his school experience. Consider such things as the type of school which the child has attended; the changes of school; the continuity and consistency of school experience; consistency of discipline, both in school and between home and school; the degree of healthy stimulation, the

extent to which tasks have been adapted to ability; the insight shown by teachers and school authorities; the behavior ideals actually inculcated; the cooperation and similarity of viewpoint between home and school.

#### *Rating on Self-Insight*

Consider in relation to the norm for his age, the degree to which the child has or lacks understanding of his own situation and problems; consider such things as defensiveness; inability to admit faults, or tendency to depreciate self and exaggerate faults. Consider not only intellectual understanding of problem but emotional acceptance of the reality situation. Consider child's planfulness and willingness to take responsibility for self; ability to be objectively self-critical. Consider stability of attitudes—whether erratic and changeable or cautious and settled.

#### *Illustrative Ratings—Insight*

- 3 This girl blames everyone else for her trouble and readily excuses herself. She will not face the fact that her situation is serious, and has a breezy optimism entirely unrelated to reality.
- 1 (or—2) This boy's sex behavior indicates real mental conflict. He can give a fair verbal account of the cause of his behavior, but his actions are little influenced.
- 0 This boy has a rather inadequate knowledge of his own assets and liabilities; he has thought only a very little about his own future; he realizes to some extent the fact that his parents tend to keep him childish. He shows no serious behavior problems.
- +2 (or +3) Living in a most unhappy home situation, this boy makes calm judgments as to the degree to which he and his stepfather are to blame, and helps make plans for his own future, away from home, on a carefully reasoned basis. [5, pp. 378-383]

In view of some of the findings to be presented later it should be pointed out that in the development of this instrument, the factor of self-insight was added rather apologetically at the end of the list. Says Rogers, in introducing a discussion of this factor, "The seven factors which have been described would seem to be the basic elements

which, coming together in complex fashion, determine the behavior of the individual. For the young child an evaluation of these factors should be sufficient to gain an understanding of the child's reactions. With the older child, however, the attitudes which he holds toward himself and his behavior are decidedly significant and worthy of evaluation. That these attitudes are formed by the interaction of the other factors in the child's experience is undoubtedly true, but they also operate as an important influence to shape his future behavior." [5, pp. 48-49]

Using this component factor instrument as described, Kell and McNeil rated each of the eight factors for each of the subjects in their groups. The material on which the ratings were based was the initial diagnostic study of the child made while he was at the Bureau of Juvenile Research. This material included written case histories, psychometric examinations, interviews with the child by a psychologist or psychiatrist, or both, report of physical examination, and other similar information. The only materials which were not used in making the rating judgments were the overall diagnostic report compiled by the Bureau, and the follow-up information. The former was excluded because it was felt the ratings should be made on the basis of the material itself, rather than on someone's interpretation of that material. The follow-up information was of course excluded because it was to be rated independently.

No measure of the reliability of the ratings in the present studies was made, but it has been shown by Rogers that the degree of reliability in the clinical use of these rating scales may be expressed by the statement that in rating specific items, the standard deviation of clinician's judgments ranges from .3 to

.6 of a scale step, with heredity and mentality showing the highest reliability, and family and self-insight factors the lowest. When six clinicians rated five cases (rather than specific items from cases) on every factor, the reliability was somewhat lower, 66 per cent of the judgments being in agreement within two scale steps on the seven point scale [5, ch. 3].

#### THE RATING OF LATER ADJUSTMENT

In order to provide an objective measure of the individual's later adjustment, with which the initial ratings might be correlated, Kell devised a scale for rating the behavior of the individual during the two or three year period following the diagnostic study. This too was a seven point scale ranging from extremely poor adjustment to excellent adjustment. The typical characteristic which were set up for the different points on the scale are as follows.

##### Rating Scale of Follow-up Adjustment

- 3 Extremely poor adjustment. Individual in difficulties constantly. A confirmed delinquent or criminal. If institutionalized, makes an unsatisfactory adjustment there—fights continuously against regulations, disliked by other inmates, etc. If in own home, continually disrupts the family, a constant behavior problem at home and in school. Insane or extremely neurotic. Finds few, if any, normal satisfactions. No satisfactory adjustment in any situation.
- 2 Poor adjustment. Continues in some delinquent or criminal activities, but does not seem hopeless. In court a number of times. Gains most satisfactions in an anti-social manner. If institutionalized, makes a partial adjustment to the institution's routine and regulations. If in own home, continues as a behavior problem most of the time, in conflict with school and may drop out. Cannot hold a job or function satisfactorily at one. May adjust satisfactorily in a few situations. Seems quite neurotic. Cannot adjust in foster home.
- 1 Near average adjustment. Continues in a few delinquent activities. May be in court once or twice. If institutionalized, makes a satisfactory adjustment and shows evidence of adjusting outside the institution. If in own home, continues as a problem, but not as a severe one. Continues as a school problem, but makes some progress. May be able to hold a job, but does not function too well at it. May exhibit some neurotic symptoms which have a slight effect on total adjustment. May have to be placed in several foster homes, but finally makes a fairly satisfactory adjustment. Adjusts in some situations and not in others.
- 0 Average adjustment. In few, if any, delinquencies. May be in court once for minor delinquencies and then released. Neurotic tendencies mild and have little effect on total adjustment. Makes a satisfactory adjustment in the home—may have a few minor family difficulties. Makes average progress in school in relation to ability. Makes satisfactory adjustment in foster home. Is able to hold a job, but is not exceptional at it. Adjusts in most situations.
- +1 Above average adjustment. Never in court again. Delinquent tendencies, if any, must be so mild that he is never in any serious difficulty. No evident neurotic symptoms. Very little aggressive, anti-social behavior. Makes a good adjustment to the family situation if returned home. Makes good progress in school. Does quite well on a job. Makes a good foster home adjustment. Adjusts in nearly all situations.
- +2 Very good adjustment. Seems to make the best of nearly every situation. No evidence of any delinquent tendencies. No anti-social behavior. Makes a good school adjustment. Does very well on a job. Never any evident conflict with family if returned home. Makes a very satisfactory foster home adjustment.
- +3 Excellent adjustment. Makes the best of every situation. Never any question of stability or anti-social trends. Seems to make best possible adjustment to family. Excellent adjustment in school, college indicated, etc. Makes excellent progress on a job. Foster home adjustment the best possible. [3, pp. 26-27]

Using this rating scale Kell and McNeil turned to the follow-up reports of the cases in their respective groups, and, without reference to the diagnostic study, evaluated the two to three years of behavior which was described in the follow-up material. This material was made up of reports from probation officers, social workers and institution officials.

To illustrate the range of later adjustments which were found in the group, and the use of the rating scale on adjustment, Kell's notes abstracting the follow-up reports on three cases, and the ratings assigned to these cases, are given below:

- 3 Ran away from foster home. Committed to Boys' Industrial School for stealing. Later released. Practiced sex perversion. Committed to Massillon State Hospital—ran away from there. Very poor present adjustment. Continuing sex perversion.
- 0 Girl made a fair adjustment in first foster home. Did not get along well in second and third foster homes. Later made a good adjustment in a fourth foster home. Now married. Apparently is doing well.
- +2 Boy has graduated from high school with good marks. Now employed as a blueprint reader at \$40.00 per week. Adjustment very good. Says, "BJR is the best thing that ever happened to me." [3, pp. 28-29].

A word is in order in regard to the experiences of these children during the follow-up period. It is fortunate for the purposes of this study (though not for the children) that very little in the way of intensive casework or psychotherapy was utilized in the treatment of these delinquents. We say that this is fortunate for the study, because obviously the aim of all treatment is to defeat the statistical probabilities involved in prediction. That is, the caseworker or therapist in working with a person, is en-

deavoring to alter the behavior which would objectively be predicted for this individual, and thus is hoping to make the prediction an erroneous one. The only type of treatment recommendations which were apt to be carried out in the group under study were the recommendations that the child be placed on probation, or placed in a foster home or institution. There is no way of measuring or indicating the amount of treatment effort invested in these children. It may be said, however, that the amount was relatively small, and that if one grants any efficacy to treatment effort then in so far as this study is concerned, it would only act to reduce the accuracy of behavioral prediction. In other words, whatever predictive accuracy is achieved by the method used, it is safe to say that it would have been greater had no treatment of any kind been attempted.

#### FINDINGS

We are now ready to consider the analysis of the data collected. It should be clear that for each child in the two groups we have a rating on each of eight factors as to the extent to which those factors are likely to produce normal or well adjusted behavior. These ratings were made on the basis of information available at the time the child came to the BJR. We have also independent ratings of the child's adjustment during the two year period following the initial study. The major aspect of the analysis consists in the correlation of these predictive judgments with the evaluations of actual behavior.

The first finding of significance is that all the predictive factors which were rated showed a positive correlation with later adjustment. That is the child with good heredity, or good health, or favorable family environment, etc. is

more likely to display normal and well adjusted behavior during the two year period following study than is the child who is less favored in any of these respects. This would tend to support the general hypothesis that behavior is the result of multiple causation, and that the factors which were selected for study are at least some of the effective elements which seem to determine adjustment or maladjustment.

But the unexpected finding which gives quite a different meaning to this material is the predictive importance of the individual's understanding of himself. As will be seen from Table II, the

which we have been unable to explain, but self-insight again comes out as the best predictor of behavior, correlating .41 with outcome.

In both studies the factor which was second in predictive significance was the social experience and social adequacy of the child. The respective correlations were .55 and .36, both statistically significant. The relationship between the other factors and adjustment was positive, but lower than these two, with the McNeil study finding lower significance for the factors of mentality and economic-cultural influence, and somewhat higher weight for education and training, when her results are compared with those of Kell.

As would be expected, when the various ratings on the separate factors were averaged, they correlated positively with outcome, *r*'s of .66 and .27 respectively being obtained in the two studies. This represents a questionable method of prediction, where the factors obviously have different weightings.

The material from Table II may be summarized by stating that in predicting the behavior of a problem adolescent, the extent to which he faces and accepts himself, and has a realistic view of himself and reality, provides, of the factors studied, the best estimate of his future adjustment. The second best predictor would be the satisfactoriness of his social contacts, the adequacy of his social relationships. These two are outstandingly better bases of prediction than any of the other factors studied, but positive correlation with later adjustment is found in ratings of the hereditary stock from which the individual has sprung; his mentality and mental functioning; the emotional climate of his family environment; his physical condition and health; and finally the economic, cultural, and educational influences to which he has been

TABLE II  
CORRELATION OF RATINGS ON COMPONENT FACTORS WITH RATINGS OF LATER ADJUSTMENT

| Factor                       | Correlations with Adjustment |                     |
|------------------------------|------------------------------|---------------------|
|                              | Kell Study (N=75)            | McNeil Study (N=76) |
| Self-insight .....           | .84**                        | .41**               |
| Social experience..          | .55**                        | .36**               |
| Mentality .....              | .39**                        | .15                 |
| Hereditary .....             | .37**                        | .23*                |
| Family                       |                              |                     |
| Environment ....             | .36**                        | .14                 |
| Economic and                 |                              |                     |
| Cultural .....               | .28*                         | .07                 |
| Physical .....               | .25*                         | .13                 |
| Education and                |                              |                     |
| training .....               | .11                          | .20                 |
| Total averaged ratings ..... | .66**                        | .27*                |

\*\*These correlations are significant at the 1% level of confidence.

\*These correlations are significant at the 5% level.

correlation between self-insight and later adjustment was .84, an unusually high relationship for material of this sort. It was this surprising finding which lead the investigators first to check the data for possible errors and finally to lay it aside until it could be thoroughly rechecked on a new group. In the McNeil study, all the correlations are consistently lower, a puzzling fact

exposed. These factors would be of predictive significance roughly in the order named.

### *Further Analysis Related to Self-Insight*

Since the factor which had most doubtfully been included in the Component Factor method proved to correlate most highly with outcome, special attention will be given to its analysis.

In the first place, the reader may wish to know the type of material upon which the ratings were based. Here are some of the summarized notes from the two investigator's records, indicating the material relating to self-insight which was found in the cases, and the rating based upon it.

- 3 Refuses to discuss his delinquencies; will not or cannot discuss problems arising out of family conflicts; denies his share of responsibility even when confronted with the facts. [4, p. 34].
- 2 Quite frank and open in discussing her misbehavior, but stories are unreliable. Is proud of her misbehavior—does not feel responsible. Does not recognize that family situation is the cause of much of her trouble. [3, p. 20].
- 1 Cautious, fairly truthful, correcting statements on own initiative. Feels some responsibility, realizing he is too easily influenced. Makes no complaints about the family but appears to understand somewhat its poor influence. [4, p. 35].
- +1 Understands his home situation fairly well, not clear about his relationship to it. Recognizes source of difficulties, but needs help in managing them. Admits his delinquencies truthfully with something similar to "They were not to blame. I was on the wrong track." [4, p. 35].
- +2 Freely admits her delinquencies, recognizing and accepting the basis of parental antagonism and rejection. Planful and cooperative. Responsible when placed on her own. Tells facts frankly, recognizes and understands mother's instability and her own need for personal responsibility. Responsive and coopera-

tive in behavior and in making future plans. [4, p. 35].

These examples may be sufficient to indicate the rather crude character of the material available for making this as well as the other ratings. If such significant correlations are achieved on the basis of general case material, the possibility is at least suggested that more refined ways of investigating the degree of self-understanding might give even more significant results.

Since both self-insight and the social factor gave high correlations with outcome, it was thought wise to investigate the degree of relationship between these two factors. In the Kell group the correlation between the ratings on self-insight and the ratings on the social factor was .66, in the McNeil group .63. This is a high degree of interrelationship which does not seem to be explainable on the basis of similarity of definitions of the two factors, or similarity of the material being rated. For example, the notes from three cases as to the social factor, with their respective ratings, are as follows.

- 3 Does not get along well with sibs or school companions. Quarrelsome. Mistreats other children, and cruel to small children and animals. Not successful in trial social adjustment opportunities.
- 0 Somewhat of a leader among the older delinquent boys. Has a passable manner, likes sports, likes to impress the girls.
- +2 Plays on a team. Friends are not delinquents. Good mixer, liked by others in the neighborhood and school. Has a good stamp collection. Has three very close friends. [4, pp. 35-36].

There would seem to be no obvious reason why ratings based on this type of data should correlate closely with ratings made on self-insight. It would seem that the relationship may be of a more underlying nature.

In another attempt to analyze the

meaning of the high correlation of the self-insight factor with later adjustment, this correlation was separately computed for boys and girls, and for negroes and whites. The differences were not striking, and some of the groups were small, but in both studies the correlation was higher for the girls than for the boys, and for the negroes than for the whites.

Another line of investigation gave special consideration to those children who remained in their own homes during the follow-up period. It had been a surprise to the investigators that family environment had not correlated highly with outcome, and that self-understanding had correlated so highly. As the material was examined, it appeared possible that the fact that a sizable number of children from the poorest homes had been removed from their own families as a result of the diagnostic study, might have influenced these results. Consequently both Kell and McNeil selected from their groups those children who had been returned to their own homes during the follow-up period. They also endeavored to determine whether the factor of self-insight was less operative when the home conditions were very unfavorable, by selecting out those with family factors rated -2 or -3, who had been returned to these

very unfavorable homes. The results are shown in Table III. It will be seen that the correlation between insight and later adjustment is relatively unchanged, even when the child comes from and returns to, a very unfavorable home situation. It is still true that a much better prediction of adjustment can be based upon a consideration of the degree of self-understanding, than upon any analysis of the home environment. McNeil further checked this by correlating the family environment factor with later adjustment in the group of 47 children returned to their own homes. This  $r$  was .20. It is higher than the similar correlation for the group as a whole, (.14 in her study) but much lower than the correlation of .43 between self-insight and later adjustment.

When the child is removed from his own home and placed in a foster home, the operation of self-insight as a predictor is enhanced. There were 10 children in Kell's group thus placed and 15 in McNeil's. The correlations between self-insight and later adjustment for these two small groups were .98(!) and .54 respectively. Both of these correlations are significant, the first at the 1% level and the second at the 5% level, in spite of the small numbers involved.

#### *Limitations of the Findings*

Since some of the findings of these studies appear to have considerable significance if they are confirmed by other research, it should be mentioned that they were uncovered in investigations which have certain flaws and limitations. Those limitations which are evident to the investigators will be briefly stated.

It is unfortunate that there is no study of the reliability of the component-factor ratings in these two studies. Knowledge of the degree of reliability

TABLE III  
THE CORRELATION OF SELF INSIGHT WITH ADJUSTMENT AMONG CHILDREN RETURNED TO THEIR OWN HOMES

| Group   | Kell's study |       | McNeil's study |       |
|---|--------------|-------|----------------|-------|
|   | N            | r     | N              | r     |
| Children whose family environment was rated -2 or -3..... | 28           | .76** | 28             | .31   |
| Children whose family environment was rated -1 or 0.....  | 15           | .78** | 12             | .49   |
| All children returned to their own homes.....             | 43           | .79** | 47             | .48** |

\*\*Significant at the 1% level of confidence.

present in a previous study does not entirely compensate for this. There is no study of the reliability of the ratings on final adjustment.

A more serious flaw is the fact that the same judge rated both the initial factors and the final adjustment, even though these ratings were made independently and some time apart. The investigator made some 600 ratings of individual factors in the 75 cases, then without reference to these or to the material upon which they were based, made the ratings on the follow-up material. It would certainly be preferable to have another judge make these judgments. It may be said, however, that if there was any unconscious bias operating in this situation, it could not account for the surprising showing of the self-insight factor, since whatever bias existed was in the direction of supposing that the emotional climate of the family was probably the most influential factor in the determination of behavior.

Another limitation of the studies as a whole is the fact that the rating scales for the eight factors and also for the later adjustment are crude instruments lacking in the degree of refinement which would be desirable in objective research. The information in the case folders was also often lacking in the specificity which would be desirable.

These limitations are real, yet their operation would for the most part tend to reduce correlations. There would seem to be nothing in the design or conduct of the study which would explain the degree of relationship which was found between self-insight and adjustment.

There is one other element in the studies which deserves critical consideration, and that is the sharp difference in the correlations found by the two investigators. It appears from an exami-

nation of the data that it is not due to any difference in the range of the ratings, or to any statistical artifact which can be discovered. Whether it is due to a difference in clinical discrimination in making the ratings, or to some other cause, is unknown. As long as it is unexplained, it would appear that it might cover some unrecognized source of error.

### *Summary of the Findings*

To recapitulate the findings of the two investigations:

1. The ratings of the eight factors specified in the component-factor method all showed a positive correlation with ratings of the individual's later adjustment, in the group of 151 cases studied.
2. The size of these correlations as found in the two studies differed sharply in amount, but there was a high degree of correspondence in the relative significance of the factors.
3. The rating of the individual's understanding and acceptance of himself and the reality situation was, in both studies, the best predictor of what his future adjustment would be.
4. In both studies the factor which was second in predictive capacity was the social experience and social adequacy of the individual.
5. In decreasing order, these factors were also found to have some capacity for prediction of future behavior; the heredity of the individual; his intellectual functioning; the emotional atmosphere which the child has experienced in the family; the economic and cultural conditions which have surrounded him; the quality and consistency of his educational environment.
6. A high degree of relationship was found between the rating on self-insight and the rating on social experience. This correlation does not appear to be explained on the basis of simple overlapping of materials rated, but may involve some deeper relationship between the two factors.
7. In the group of children who came from, and remained in, highly undesirable atmospheres, it was still true that the degree of self-understanding was the best predictor of adjustment, much better than

- an evaluation of the home influence itself.
8. In children who are removed from highly undesirable home atmosphere and placed in foster homes, the degree of self understanding is a decidedly accurate predictor of future adjustment or maladjustment.

#### IMPLICATIONS OF THE FINDINGS

Only gradually, as the clinical experience of the authors has pointed in the same direction as the results of this research, has the full significance of the foregoing findings been recognized and appreciated. Only as work in psychotherapy has driven home the importance of the individual's concept of himself and his relation to reality, and the close relationship between these perceptions and his behavior, have the findings of this research been understood. [See reference 6 for an expression of this line of thought.] It is another experience to illustrate that objective facts have little meaning until they fit, in some recognizable way, into our frame of reference.

If the present studies are confirmed in their central findings by further research, then there are three broad implications which deserve consideration. The first is the socially hopeful character of the findings. Studies in prediction based upon correlating isolated background facts with later adjustment seem uniformly depressing because they add up to the total conclusion that the more adverse the factors operating in the individual's life, the more hopeless he becomes, from any social point of view. The present studies do not flatly contradict this conclusion. It is true that a poor heredity and the presence of destructive organic factors, and a culturally deprived background, all predispose, to some degree, toward a less adequate adjustment. But the significant fact is that the element which above all others should be the most subject to natural change or planned alter-

ation, the individual's acceptance of himself and of reality, is also the most important determiner of his future behavior. Rather than feeling that a person is inevitably doomed by unalterable forces which have shaped him, this study suggests that the most potent influence in his future behavior is one which is certainly alterable to some degree without any change in his physical or social heredity or in his present environment. The most powerful determinant would appear to lie in the attitudes of the person himself.

A second implication which should be mentioned is that the results of these studies would point toward a drastic revision of the methods of dealing with or treating individuals who exhibit delinquent or problem behavior. In the groups which were studied, and in other similar groups, practically all of the investment of money and effort is directed toward altering factors which appear to be only to a small degree determinative of behavior. Vast amounts are expended on foster homes and children's institutions in order to alter the child's whole environment, considerable amounts on probationary supervision which is little more than a checking-up on the youngster, considerable sums on the alleviation of physical deficiencies, but practically nothing on any direct approach to the problem of revising the child's attitudes toward himself. Likewise only a small fraction of the total treatment effort goes to changing the child's social adjustment, which appears to be second only to self-insight in its significance.

If treatment effort was to be expended in most efficient form, in the light of the results of this study, then effective psychotherapy, either individual or group, aimed at helping the child achieve a more realistic acceptance of

his impulses and abilities, and a realistic appraisal of his situation, would be the major investment. Social experiences might need to be provided concurrently, or the psychotherapy might assist him in developing more constructively the social relationships which he has. In any event, it would not be the quantity of social contact, but the degree to which the individual built mature give-and-take relationships with others, which would be regarded as important. A distinctly lesser amount of effort might be expended in endeavoring to improve the family relationships, and the economic status. Some effort to enrich the cultural stimulation of the child might also be justified. The primary aim throughout, would be to provide the opportunities for emotional release, insightful acceptance of self, and positive reorientation of self, which every successful psychotherapy entails. Such opportunities might be offered through the clinic, through the classroom with a specially trained teacher, through special school counseling services, or through group therapy carried on in conjunction with a recreational group. The whole focus of effort would be almost the reverse of the accepted procedures at the present time.

The final implication carried by the results of this study is that if the individual's view of himself and reality is so important—the degree of his defensiveness, the degree of acceptance of himself, his realistic appraisal of reality, his degree of independence and

planfulness, his ability to be objectively self-critical—then a great deal of research is needed in this area. Studies are needed to discover how healthy perceptions of this sort occur, and the circumstances which cause the individual to become defensive and lacking in insight. We need much deeper research into the way in which the individual views himself, and the fashion in which his internal view of experience influences his behavior. Finally we need penetrating investigation of the ways in which such views of experience may be altered in the direction of realism and self-acceptance. Such research would move us forward a great distance in our knowledge of how to deal with those with behavior disorders.

#### REFERENCES

1. BENNETT, C. C. AND ROGERS, C. R. Predicting the outcomes of treatment. *Amer. J. Orthopsychiat.*, 1941, 11, 210-221.
2. BENNETT, C. C. AND ROGERS, C. R. The clinical significance of problem syndromes. *Amer. J. Orthopsychiat.*, 1941, 11, 222-229.
3. KELL, B. L. The predictive possibilities of the component-factor method of diagnosis as applied to children with behavior problems. Unpublished Master's thesis, Ohio State Univ., 1942.
4. MCNEIL, HELEN. Factors significantly related to the later adjustment of children presenting problem and delinquent behavior. Unpublished Master's thesis, Ohio State Univ., 1944.
5. ROGERS, C. R. *The clinical treatment of the problem child*. Boston: Houghton Mifflin, 1939.
6. ROGERS, C. R. Some observations on the organization of personality. *Amer. Psychologist*, 1947, 2, 358-368.