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ABSTRACT

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Neuroticism score and the teacher ratings of adjustment status
yielded biserial correlations of .12 and .22, while the biserial
correlations of teacher ratings and IQ scores were -.52 and -.50,
with higher IQ scores being associated with healthier (but
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terms of the practical implications for the screening of school
children for emotional dysfunction and in terms of the implications
for the validity of the CPQ Neuroticism index. (Author)

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Recognition of the importance of providing help before maladaptive

behavior patterns have become so deeply ingrained that they are irreversible

has stimulated interest in screening elementary school children for academic

and behavioral difficulties (Allinsmith & Goethals, 1962; Glavin & Quay,

1969; Lien, Yellot, Cowen, Trost, & Izzo, 1969; Morse, Finger, & Gilmore,

1968; Rhodes, 1968). However, establishing the validity of psychological

tests as screening instruments is quite difficult, particularly if one

attempts to apply the techniques of criterion-oriented validation (APA,

1954, p. 14). To assess the concurrent or predictive validity of a test

requires that there be "acceptance of a set of operations as an adequate

definition of whatever is to be measured (Bechtoldt, 1951, p. 1245)." That

is, there must be a set of measures which, at least temporarily, can be

assumed to have greater a priori validity for the concept being measured

than the measures one wishes to use as a predictor.

In the case of mental health status, the diagnostic findings of mental

health professionals have the highest a priori validity as a criterion

measure. However, it is not economically or otherwise feasible to obtain

clinical assessments of large school populations. Efforts have, therefore,

been made to establish that the more readily obtainable teacher ratings of

pupil adjustment are sufficiently highly correlated with clinical ratings

to be considered as generally equivalent data. The long series of Wickman

studies (Wickman, 1929; Mitchell, 1942; Stouffer, 1952; Beilin, 1959)

traced persistent differences in the perspectives of teachers and clinicians

regarding the nature of psychological maladjustment. Beilin (1959) attrib-
uted these differences to the differing roles of teachers and clinicians,
with teachers tending to be most sensitive to those pupil behaviors which
interfere with successful performance of the teacher role. On the other
hand, Domke reported that "teachers' opinions about the emotional state of
the children agreed exactly with the opinion of mental health personnel in
86% of the cases (1963, p. 509)." Bower (1960) found that 87% of the
pupils known to a child guidance clinic were rated by their teachers as
among the most poorly adjusted in their class. Glidewell, Domke, and
Kantor (1963) reported that teacher ratings and ratings made by psychiatric
social workers on the basis of professional findings were within one point
of each other on a four-point scale 92% of the time. Liem, Yellot, Cowen,
Trost, and Izzo (1969) found that teachers' ratings of pupil maladjustment
on three checklists yielded correlations of -.64 to -.71 with clinical
ratings on a seven-point mental health continuum.

The purpose of the present research was to investigate the concurrent,
diagnostic validity of the Institute for Personality and Ability Testing
Children's Personality Questionnaire (CPQ), Form A, 1963 Edition. In view
of the seeming preponderance of favorable data regarding the validity of
teacher ratings of pupils' adjustment status, the research problem was
specifically stated as an investigation of the extent to which the CPQ
could differentiate between well-adjusted and maladjusted school children,
with teacher referrals to mental health professionals and teacher ratings
serving as dual criteria of mental health status.

<div align="center">Method</div>

Subjects

Subjects for the validation study were 353 white fourth- through

eighth-graders attending the only grade school in an upper middle-class suburb located north of Chicago, Illinois. Subjects for the cross-validation study were 295 white sixth- and seventh-graders attending two junior high schools in a north Chicago suburb adjacent to the one providing subjects for the validation study. The selection of classes to be tested was done on the basis of teachers' willingness to cooperate in the research project.

Procedure

For the validation study, pupils were tested in May, 1968, in classroom groups. The 140-item IPAT Children's Personality Questionnaire, Form A, 1963 Edition, was administered as part of a battery of four tests of personality and creativity. IQ scores, derived mainly from the Lorge-Thorndike Intelligence Test, were obtained from school records. Teachers were asked to rate the adjustment level of each pupil by placing him or her in one of the following four categories: 1) Child is essentially normal and well adjusted; accepted by peers; works up to mental capacity 2) Child has chiefly inner personality problems such as feelings of inadequacy, inferiority, anxiety, or unhappiness; child is the one who suffers most from his or her problems 3) Child has chiefly conduct or behavior problems which cause discomfort, inconvenience, or harm to other people; e.g., child is delinquent, aggressive, destructive, steals, etc. 4) Child has other problems or a mixture of inner personality and conduct problems; e.g., child has low intelligence or learning problems; is hyperactive and distractible; has a severe speech defect; or has many physical complaints that seem related to being emotionally upset.

The files of the schools' department of special services were reviewed and referrals to the school counselor, the school social worker, and the

school psychologist within the preceding two years were matched against the list of pupils tested in the project. Since Lambert's (1968, p. 289) follow-up study had indicated that children rated as maladjusted by their teachers but not referred for help turned out to be just as disturbed as those actually referred for guidance services, in the present validation study, ratings and referrals for guidance services were used as a dual criterion of adjustment status. Either a rating of maladjustment by the current teacher (rating of 2, 3, or 4 on teacher rating scale) or a referral to the special services department within the past two years was sufficient for classification within the maladjusted group.

The boys included in the validation study were classified as follows: 96 well-adjusted and 76 maladjusted (45 both rated maladjusted and referred for help, 27 merely rated maladjusted, and 4 previously referred for help but not rated maladjusted by current teacher). The girls were classified as follows: 141 well-adjusted and 40 maladjusted (23 both rated maladjusted and referred for help, 16 merely rated maladjusted, and 1 previously referred for help but not rated maladjusted by current teacher).

The cross-validation sample was tested in November, 1969, and February, 1971. Again, Lorge-Thorndike IQ scores were obtained from school records. Teachers were asked to rate all pupils in their class on the same rating form used in the original validation study. Since data on referrals for special help were not available, the teacher ratings alone were used to classify the students on adjustment status. The boys were classified as: 107 well-adjusted and 45 maladjusted. The girls were classified as: 129 well-adjusted and 14 maladjusted. In spite of the use of referral data for only one of the two samples, the adjustment criterion was essentially teacher rating data for both samples. In the validation

sample, 348 of the 353 subjects were classified by the dual criterion of teacher ratings and referral data exactly as they would have been classified on the basis of teacher ratings alone.

Analysis of Data

All CPQ raw scores were converted to sten scores by means of the normative data in Tables N-1 and N-4 of the CPQ tabular supplement (Institute for Personality and Ability Testing, 1968). The Neuroticism score was computed by means of the formula indicated in the test manual (Porter & Cattell, 1968, p. 15). In order to dichotomize pupils on adjustment status as indexed by the Neuroticism score, scores of 7 or higher were classified as representing maladjustment, in accordance with the interpretive guidelines of Cattell and Cattell (1969, p. 20). Pupils were classified as well-adjusted or maladjusted on the basis of IQ scores merely by selecting separately for boys and girls in the validation sample that Lorge-Thorndike IQ score which provided optimal discrimination between teacher-rated well-adjusted and teacher-rated maladjusted individuals.

The third basis for categorizing students on adjustment status was discriminant scores obtained from the CPQ. Since a previous study by Lessing and Smouse (1967) had produced a different pattern of discriminant scores for boys and girls, in the present study discriminant scores were obtained separately for boys and girls. The CPQ factor sten scores were subjected to discriminant function analyses by means of a three-phase computer program based on formulas presented by Rao (1962, pp, 257, 318-319) and Kendall (1957, p. 163). In the first phase, the Mahalanobis D^2 statistic V was used as a chi square (with df equal to 14, the number of CPQ factors) to test whether the 14 CPQ factor means for the teacher-rated maladjusted pupils differed significantly from the means of the teacher-rated

well-adjusted pupils. The discriminant coefficients for all 14 factors for
each of the two groups (well-adjusted and maladjusted) were then computed.
Weights to be used as multipliers for each sten score were obtained by
subtracting the coefficients of the well-adjusted group from the coeffi-
cients for the maladjusted group. The program then produced discriminant
scores of a type that the percentage of correct identifications is equal
for categories of subjects being differentiated.

    The CPQ discriminant weights derived from the validation sample data
were applied to the CPQ sten scores of the pupils in the cross-validation
sample. Similarly, the same percentage cut-off point (but not necessarily
the same IQ score) used to discriminate between teacher-rated well-adjusted
and maladjusted individuals in the validation sample was then used as the
basis for categorizing pupils in the cross-validation sample.

                              Results

    Table 1 contains the CPQ sten scores on the 14 first-order factors and
Neuroticism for the validation sample subdivided by sex and teacher rating
of adjustment status. The patterns of factor score differences between the

                    ....
                    Insert Table 1 about here
                    ....

well-adjusted and the maladjusted subgroups was quite similar among boys and
girls. In comparison with individuals rated as maladjusted, both boys and
girls rated as well-adjusted scored significantly higher on sociability,
intelligence, ego strength and emotional resiliency, and social poise and
spontaneity (Factors A, B, C, and H) and significantly lower on social
timidity, social shrewdness and opportunism, and apprehensiveness (Factors
J, N, and O). Among girls only, individuals rated as well-adjusted scored
significantly higher than the maladjusted on self-control and concern for

social standards (Factor Q_3). This association between teacher-rated good adjustment and the expression of socially conforming attitudes that are culturally normative for females may have occurred because fulfilling sex-role expectations is actually adaptive. Or, the association may be a further instance of the previously documented tendency for raters to perceive sex-stereotypic behavior as indicative of good mental health (Broverman, Broverman, Clarkson, Rosenkrantz, & Vogel, 1970, p. 4). In the case of both boys and girls, the CPQ summary pathology index, the Neuroticism score, significantly differentiated between individuals rated as well-adjusted by teachers and those rated as having notable psychopathology.

The discriminant function analysis yielded V statistics of 42.75 and 63.33 for boys and girls respectively ($\underline{df}$ = 14; $\underline{p}$ < .01). This evidence that, in the case of each sex, the 14 CPQ factor means considered together differed significantly for the teacher-rated maladjusted and well-adjusted subgroups justified the computation of discriminant scores. Table 2 contains the weights to be applied to CPQ sten scores and the constant to be added in order to obtain the discriminant scores designed to achieve

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Insert Table 2 about here
. . . .

maximum discrimination between adjustment status subgroups. In the case of the Lorge-Thorndike IQ scores, it was found that the best differentiation between teacher-rated adjustment subgroups in the validation sample was obtained by categorizing all boys in the lowest 43.8% of the range of IQ scores earned by boys in the sample as maladjusted. Among the girls, classifying the lowest 29.4% as maladjusted was optimal. The actual IQ scores corresponding to these cutting points were 115 for boys and 111 for girls in the validation sample. When the percentage cutting points were

applied to the cross-validation sample, the actual IQ scores representing

the cutting points were 110 for boys and 108 for girls. Scores at or below

the cutting point classified a pupil as maladjusted.

Table 3 presents the findings of the study in terms of the criterion-

validation model with teacher ratings of adjustment status serving as a

criterion, to which the Neuroticism score, discriminant score, and IQ were

each attempting to predict. The most noteworthy aspect of the table is the

....
Insert Table 3 about here
....

fact that no predictor measure (neither CPQ Neuroticism score, CPQ discrim-

inant score, nor Lorge-Thorndike IQ) did much better in differentiating

teacher-rated adjustment groups than did a simple prediction derived from

the base rate of maladjustment in the samples. In the validation sample,

merely guessing that every pupil was rated well-adjusted would result in

being right 67.1% of the time; the best predictor, the CPQ discriminant

scores, could improve upon this percentage of correct identifications by

only 6.8 points. In the cross-validation sample, with its lower percentage

of teacher-rated maladjustment, no predictor could do better than simply

guessing that each pupil was well-adjusted. The CPQ Neuroticism score

attained a percentage of correct identifications that was similar to that

obtainable by the base rate prediction by tending to categorize nearly all

pupils as well-adjusted. In no subgroup of either sample were more than

20% of the pupils rated maladjusted by teachers also identified as dis-

turbed by means of the Neuroticism index. The CPQ discriminant score

succeeded in improving upon the accuracy of a base rate prediction in the

validation sample and at the same time was able to screen out an appreciable

proportion of the pupils rated as maladjusted. However, the IQ score from

a routinely administered group test performed quite as well and likewise screened out an appreciable proportion of the students rated as maladjusted by their teachers.

The finding that IQ scores identified teacher-rated maladjusted students. more successfully than did personality test scores raised question as to whether the criterion-validation model could be appropriately applied to the data. Consequently, the data analysis was shifted to a construct validation model (Cronbach & Meehl, 1955) with mental health status designated as the construct believed to underly both teacher ratings of adjustment and selected scores on the CPQ (with neither variable assuming the status of criterion). The convergent and discriminant validation procedures of Campbell and Fiske (1959), which place test scores within a context of relationships relevant to their construct validity, were partially applicable to the data.

Table 4 contains a fragment of a multitrait-multimethod matrix (Campbell & Fiske, 1959, p. 85). The fragment includes three methods for one trait (mental health status) and one method for the second trait (intelligence) so that it is possible to present three values from the validity diagonal (monotrait-heteromethod) and three values from one heterotrait-heteromethod triangle (intelligence evaluated by one method versus mental health status evaluated by three methods). The monotrait-heteromethod correlations

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Insert Table 4 about here
. . . .

appearing in the upper half of Table 4 do not, as a group, surpass the heterotrait-heteromethod correlations in the bottom half of Table 4. The only pair of mental health indices that showed a moderately high relationship (CPQ discriminant scores and teacher ratings in the validation sample)

were little more related to each other than each was related to a measure of intelligence. In the cross-validation sample, their correlation dropped below the correlation of each with intelligence. The measure of mental health status that was most clearly discriminable from the measure of intelligence, namely the CPQ Neuroticism score, was only moderately correlated with the other two indices of mental health status.

One of the three categories combined to form the maladjusted classification of the dichotomized teacher ratings was a miscellaneous grouping including children with low intelligence or learning problems. (See the fourth category of teachers' rating scale as described under "Procedure" section.) Since intelligence test scores would be particularly relevant for the adjustment status of many of the pupils placed in this category, the correlations between teacher ratings, IQ, and CPQ Neuroticism were re-computed for the validation sample after the data for pupils judged to have "mixed or other problems" had been eliminated. The correlation between CPQ Neuroticism and teacher ratings of adjustment did not increase and teacher ratings of adjustment continued to be significantly correlated with IQ even when the teachers were discriminating between levels of adjustment in students who were not manifesting academic problems.

In a final attempt to maximize the correlation between the teacher ratings of adjustment and a predictor score derived from the CPQ, the basis of classification for the validation sample was changed from sex to type of disorder reported in the teacher ratings (well-adjusted versus inner personality problem versus conduct or mixed problems). A new discriminant analysis was performed by means of a computer program whose resulting discriminant scores maximize the total percentage of correct identifications even if some categories are much better discriminated than others. The new

discriminant scores correctly identified only 73.8% of the total sample as
compared with the 73.9% correctly identified by the original discriminant
scores. Moreover, the highest percentage of correctly identified maladjusted
pupils was 46.7% for pupils with conduct problems as compared with the 70%
of maladjusted girls identified by the original discriminant scores.

Discussion

From a practical viewpoint, the implications of the findings are clear.
If one wishes to differentiate between pupils who would be evaluated as
well-adjusted by teachers and those who would be evaluated as maladjusted,
the CPQ Neuroticism score and a special CPQ discriminant score based on
local norms will provide 65-75% accuracy. The Neuroticism score will iden-
tify very few pupils who would be rated by teachers as disturbed, but is
preferable if one wishes to minimize the misidentifications of well-adjusted
students as disturbed. The discriminant score is preferable (when applied
to comparable samples) if one wishes to maximize the identification of
students who would be rated as maladjusted by their teachers even at the
cost of misidentifying a fourth to a third of the teacher-rated normal
students. However, the task of discriminating between groups differing in
teacher-rated adjustment could be performed just as easily by a routinely
administered group test of intelligence without the necessity of any compli-
cated weighted scores.

The finding that a personality inventory has little advantage over an
intelligence test in differentiating between teacher-rated adjustment sub-
groups is not a matter of there being something unusual or atypical in the
sample of pupils and teachers studied. Semler (1960) obtained similar
results although he did not discuss them in terms of this particular issue.
He reported a median correlation of .34 between teacher ratings of adjustment

and pupils' scores on the Otis Intelligence Test as compared with a median

correlation of .39 between teacher ratings of adjustment and pupils' scores

on the California Test of Personality. The requirements of the teacher's

role (see Beilin, 1959) make achievement-related personality patterns most

salient, while the limitations upon the scope and intimacy of teacher-pupil

interactions make it extremely difficult for teachers to be aware of the

inner psychological world of their students. Ullman (1952, pp. 34, 39)

suggested that this distance from the inner world of students made teachers

more comfortable and accurate in rating externally manifest rather than

intrapsychic disorders and accounted for the greater convergence among

measures of adjustment status among boys than among girls. In the present

study, however, the trend was toward greater congruence among teacher rating

and test measures of adjustment among girls rather than among boys, as was

the case in Semler's (1960) study. Semler's suggested explanation might

have been operative in the current study also: Semler found greater congru-

ence among teacher ratings and self-ratings of adjustment when rater and

ratee were of the same sex, with female pupils thus being most often rated

empathically since most teachers in the study were female.

The data of the study are inconclusive in regard to the construct

validity of the CPQ Neuroticism and discriminant scores as measures of

mental health status. Previous studies establishing significant relation-

ships between the CPQ Neuroticism score and admission to a psychiatric

clinic (Lessing & Smouse, 1967) and between teacher ratings and clinical

assessments (Glidewell, Domke, & Kantor, 1963; Liem et al., 1969) estab-

lished sufficiently great a priori validity for each as a measure of mental

health status that their convergence could have enhanced the validity of

both. However, the lack of convergence is ambiguous (see Krause, 1971).

Clearly, the CPQ Neuroticism scores and teacher ratings are measuring the same phenomenon to only a slight degree. But there are insufficient grounds for choosing between the following alternative propositions: 1) the CPQ Neuroticism scores and the teacher ratings are adequate and equally valid measures of different specific components of mental health status, 2) the teacher ratings are a fairly inadequate measure of mental health status as compared with the CPQ Neuroticism scores, and 3) the CPQ Neuroticism scores are a fairly inadequate measure of mental health status as compared with teacher ratings.

In support of the conclusion that the CPQ Neuroticism scores and the teacher ratings are equally valid measures of different components of mental health status, one notes 1) the previously cited evidence that each has been found to be significantly related to mental health status as evaluted clin-ically, and 2) the consistency of such an interpretation with theoretical construals of mental health as a multidimensional concept involving situa-tional and role variables (Jahoda, 1958; Scott, 1958; Smith, 1961). In support of the second alternative conclusion that the teacher ratings are less valid than the CPQ Neuroticism scores, one notes that only the teacher ratings are subject to the validity-reducing implications of greater cor-relation with a measure of a different construct than with another measure of the same construct (APA, 1954, p. 17; Campbell & Fiske, 1959, p. 84). There is, of course, some basis for questioning whether the higher correla-tion of teacher ratings with IQ scores than with Neuroticism scores really represents higher correlation with an index of a concept other than mental health. Jahoda's multidimensional concept of mental health includes an intellectual component under the rubrics of adequate perception of reality and environmental mastery (1958, p. 23). Psychoanalytically-oriented

theorists have conceptualized intelligence and judgment as aspects of ego
adequacy, which in turn is conceptualized as a partial criterion of mental
health (Fenichel, 1945, pp. 33-53; Bellak, Hurvich, & Crawford, 1970).
However, in Loevinger's (1966, p. 195) words, "intellectual development is
not a fair measure of ego-development, even though exercise of intelligence
is an ego function." Intelligence and mental health status are differen-
tiatable concepts even when the latter is viewed largely in terms of ego
adequacy, since intelligence is only one of a large number of ego functions.
Therefore, one cannot discount the negative validity implications of the
higher correlation between teacher ratings and IQ than between teacher
ratings and personality test scores.

It is possible that the heavy confounding of intellectual and personal-
ity evaluation in the teacher ratings is partly a function of methodology.
Datta, Schaefer, and Davis (1968) obtained teacher ratings of pupil adjust-
ment that were uncorrelated with aptitude scores in three out of four sub-
groups when teachers rated only five students each rather than rating an
entire classroom. A less demanding rating task may permit a more differen-
tiated, individualized view of each pupil being rated and decrease teachers'
susceptibility to a halo effect determined mainly by a pupil's amenability
to school roles and routines. Eysenck and Pickup's (1968) finding that the
Neuroticism score of the Junior Eysenck Personality Inventory correlated
very little with teacher ratings of emotional stability, while the latter
correlated moderately highly with teacher ratings of cooperativeness in
school adds further weight to the argument that teacher ratings of the
adjustment of classroom groups of children are subject to certain validity-
reducing factors that have less effect on personality tests.

The third alternative conclusion that the CPQ Neuroticism score (a self-descriptive measure) is a fairly inadequate measure of mehtal health status as compared with teacher ratings of adjustment cannot be supported directly by empirical data. Apparently there have not yet been any direct comparisons of the extent of convergence of CPQ Neuroticism and teacher ratings with other measures of psychopathology. However, in view of the available evidence that different types of teacher ratings and scores on diverse personality tests form separate clusters with moderate intercorrelations within clusters and smaller correlations across clusters (e.g., see Ullman, 1952, pp. 33-34), one might note Lambert's (1964) finding that teacher ratings were more highly correlated with clinical evaluations than were pupil's self-descriptions.

A choice between the possible alternative explanations for the low relationship between CPQ Neuroticism scores and teacher ratings can be made only on the basis of future accumulations of data. Both measures should be compared with a generally accepted criterion measure such as clinical ratings or with status on a number of other variables having implications for construct validity (e.g., sociometric status, parents' reports of symptomatic behavior, etc.). Pending the accumulation of such data, the safest compromise position would be to regard teacher ratings as a measure of the school adjustment component of mental health and CPQ Neuroticism scores as a measure of an intrapsychic component of mental health status that reveals itself very little to external observers who do not have a close personal or clinical relationship with the child. Any suggestion that the Neuroticism index should be modified in various ways to predict teacher ratings as a criterion variable (Lessing & Harrod, 1971; Lessing, 1972) must now be considered premature.

References

Achenbach, T. M. The classification of children's psychiatric symptoms:
A factor analytic study. Psychological Monographs, 1966, 80(7,
Whole No. 615).

Allinsmith, W., & Goethals, G. W. The role of schools in mental health.
New York: Basic Books, 1962.

American Psychological Association. Technical recommendations for psycho-
logical tests and diagnostic techniques. Supplement to the
Psychological Bulletin, 1954, 51(2), 1-38.

Bechtoldt, H. P. Selection. In S. S. Stevens (Ed.), Handbook of experi-
mental psychology. New York: Wiley, 1951. Pp. 1237-1267.

Beilin, H. Teachers' and clinicians' attitudes toward the behavior problems
of children: A reappraisal. Child Development, 1959, 30, 9-25.

Bellak, L., Hurvich, M., & Crawford, P. Psychotic egos. The Psychoanalytic
Review, 1970, 56, 526-542.

Bower, E. M. Early identification of emotionally disturbed children in
school. Springfield, Ill.: Charles C. Thomas Co., 1960.

Broverman, I. K., Broverman, D. M., Clarkson, F. E., Rosenkrantz, P. S., &
Vogel, S. R. Sex-role stereotypes and clinical judgments of mental
health. Journal of Consulting and Clinical Psychology, 1970, 34(1),
1-7.

Campbell, D. T., & Fiske, D. W. Convergent and discriminant validation by
the multitrait-multimethod matrix. Psychological Bulletin, 1959,
56(2), 81-105.

Cattell, R. B., & Cattell, M. D. Handbook for the Jr.-Sr. High School
Personality Questionnaire "HSPQ" (Ages 12 through 18). Champaign,
Illinois: Institute for Personality and Ability Testing, 1969.

Cronbach, L. J., & Meehl, P. E. Construct validity in psychological tests. _Psychological Bulletin_, 1955, _52_(4), 281-302.

Datta, L., Schaefer, E., & Davis, M. Sex and scholastic aptitude as variables in teachers' ratings of the adjustment and classroom behavior of Negro and other seventh-grade students. _Journal of Educational Psychology_, 1968, _59_, 94-101.

Domke, H. R. _An evaluation of a preventive community mental health program: Progress Report III._ Clayton, Missouri: St. Louis County Health Department, 1956. Cited by J. C. Glidewell, H. R. Domke, & M. B. Kantor, Screening in schools for behavior disorders: Use of mothers' report of symptoms. _Journal of Educational Research_, 1963, _56_(10), 508-515.

Eysenck, S. B. G., & Pickup, A. J. Teacher ratings of extraversion and neuroticism and children's inventory responses. _British Journal of Educational Psychology_, 1968, _38_, 94-96.

Fenichel, O. _The psychoanalytic theory of neurosis._ New York: Norton & Co., 1945.

Glavin, J. P., & Quay, H. C. Behavior disorders. _Review of Educational Research_, 1969, _39_(1), 83-102.

Glidewell, H. C., Domke, H. R., & Kantor, M. B. Screening in schools for behavior disorders: Use of mothers' report of symptoms. _Journal of Educational Research_, 1963, _56_(10), 508-515.

Institute for Personality and Ability Testing. Tabular Supplement with Norms for the Children's Personality Questionnaire "CPQ." Champaign, Illinois: IPAT, 1968.

Jahoda, M. _Current concepts of positive mental health._ New York: Basic Books, Inc., 1958.

Jenkins, R. L. Psychiatric syndromes in children and their relation to
family background. American Journal of Orthopsychiatry, 1966, 36(3),
450-457.

Kendall, M. G. A course in multivariate analysis. London: Griffin, and
Co. Ltd., 1957.

Krause, M. S. The implications of convergent and discriminant validity
data for instrument validation. Psychometrika, 1971, in press.

Lambert, N. M. The prediction of school adjustment. U. S. Department of
Health, Education, and Welfare, Office of Education, Cooperative
Research Project No. 1980, Sacramento: California State Department of
Education, 1964.

Lambert, N. M. Early identification of youth with potential mental health
problems. The High School Journal, 1968, 51(7), 289.

Lessing, E. E. Predictive validity of the IPAT Jr.-Sr. High School
Personality Questionnaire as a measure of neuroticism. Journal of
Clinical Psychology, 1972, 28, 179-183.

Lessing, E. E., & Harrod, A. R. Comparative predictive validity of the IPAT
Jr.—Sr. High School Personality Questionnaire for white and black sub-
samples. Proceedings, 79th Annual Convention, A.P.A., 1971, 245-246.
(Summary)

Lessing, E. E., & Smouse, A. D. Use of the Children's Personality Question-
naire in differentiating between normal and disturbed children.
Educational and Psychological Measurement, 1967, 27, 657-669.

Liem, G. R., Yellot, A. W., Cowen, E. L., Trost, M. A., & Izzo, L. Some
correlates of early-detected emotional dysfunction in the schools.
American Journal of Orthopsychiatry, 1969, 39, 619-625.

Loevinger, J. The meaning and measurement of ego development. American
Psychologist, 1966, 21, 195-206.

Mitchell, J. C. A study of teachers' and of mental hygienists' rating of
    certain behavior problems of children. Journal of Educational
    Research, 1942, 39, 292-307.

Morse, W. C., Finger, D. C., & Gilmore, G. E. Innovations in school mental
    health programs. Review of Educational Research, 1968, 38(5), 460-477.

Peterson, D. R. Behavior problems of middle childhood. Journal of
    Consulting Psychology, 1961, 25, 205-209.

Porter, R. B., Cattell, R. B., & Ford, J. J. Manual for the Children's
    Personality Questionnaire "CPQ" Ages 8 through 12. Champaign, Illinois:
    Institute for Personality and Ability Testing, 1968.

Quay, H. C., & Quay, L. C. Behavior problems in early adolescence. Child
    Development, 1965, 36, 215-220.

Rao, C. R. Advanced statistical methods in biometric research. New York:
    Wiley, 1962.

Rhodes, W. C. Utilization of mental health professionals in the school.
    Review of Educational Research, 1968, 38(5), 497-511.

Scott, W. Research definitions of mental health and mental illness.
    Psychological Bulletin, 1958, 55, 29-45.

Semler, I. J. Relationships among several measures of pupil adjustment.
    Journal of Educational Psychology, 1960, 51, 60-64.

Smith, L. M. The concurrent validity of six personality and adjustment
    tests for children. Psychological Monographs General and Applied,
    1958, 72(4, Whole No. 457).

Smith, M. B. "Mental health" reconsidered. American Psychologist, 1961,
    16, 299-306.

Stouffer, G. A., Jr. Behavior problems of children as viewed by teachers
    and mental hygienists. Mental Hygiene, 1952, 36, 271-285.

Symonds, P. M., & Sherman, M. Personality survey of a junior high school.
In W. T. Donahue (Ed.), The measurement of student adjustment and
achievement. Ann Arbor, Michigan: University of Michigan Press,
1949.

Ullman, C. A. Identification of maladjusted school children. Public
Health Monograph, 1952, 67(7, Whole No. 211).

Wickman, E. K. Children's behavior and teachers' attitudes. New York:
The Commonwealth Fund Division of Publications, 1929.

Footnote

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Table 1

Mean CPQ Scores of Well-Adjusted and Maladjusted School Children in Validation Sample

CPQ factor		Boys			Girls	
		Well-adjusted	Maladjusted		Well-adjusted	Maladjusted
		N = 96	N = 76	t	N = 141	N = 40	t
A	Outgoing--Reserved	5.9	5.3	2.17*	6.0	4.9	3.26**
B	Intelligent--Dull	7.5	6.3	4.67**	7.3	6.0	4.35**
C	Ego Strength--Weakness	6.5	5.6	3.96**	6.3	5.1	3.94**
D	Excitable--Placid	6.3	6.4	.33	6.3	5.1	1.96
E	Dominant--Submissive	7.4	7.0	1.34	5.4	5.0	1.39
F	Happy-Go-Lucky--Serious	7.0	7.2	.96	5.0	4.4	1.61
G	Conscientious--Frivolous	4.1	3.9	.82	4.7	4.2	1.59
H	Venturesome--Shy	6.4	5.8	2.11*	6.0	5.1	2.30*
I	Sensitive--Tough	3.8	3.9	.44	6.8	6.4	1.32
J	Restrained--Vigorous	5.4	6.2	2.84**	5.7	6.4	2.13*
N	Shrewd--Artless	6.2	6.9	2.34*	5.2	6.2	2.74**
O	Apprehensive--Self-Assured	4.1	5.0	3.47**	4.7	6.0	4.01**
Q3	Self-Controlled--Lax	4.4	4.1	1.12	5.4	4.6	2.46*

Table 1 (continued)

CPQ factor	Boys			Girls		
	Well-adjusted	Maladjusted		Well-adjusted	Maladjusted	
	$N = 96$	$N = 76$	t	$N = 141$	$N = 40$	t
Q_4 Tense--Relaxed	5.9	5.9	.01	5.8	5.8	.02
Neuroticism	4.5	4.9	2.69**	5.5	6.1	3.30**

Note.--The higher the mean, the more the group resembles the first-named pole of a given factor.

[1]The df for all t-tests were adjusted to allow for unequal sample sizes and variances by means of a technique described by Hayes, 1963, p. 322; since df for this t = 83, $p > .05$.

Table 2

Discriminant Weights to be Used as Multipliers for CPQ Sten Scores

Together with Neuroticism Score Weights

CPQ Factor	Discriminant weights		Neuroticism weights[a]
	Boys	Girls	Both sexes
A	.072	-.141	
B	-.367	-.426	
C	-.274	-.225	-.13
D	.043	.173	.07
E	-.075	-.359	-.13
F	.134	-.079	-.13
G	.069	-.127	
H	.049	.020	-.13
I	.088	-.170	.13
J	.136	.004	.07
N	.187	.096	
O	.084	.227	.13
Q_3	.098	-.223	
Q_4	-.018	-.448	.13
Constant to be added	-.507[b]	9.566[b]	5.45[c]

[a]Porter, Cattell and Ford, 1968, p. 15.

[b]Constant will establish zero as cut-off point with positive scores representing maladjustment.

[c]Constant will establish mean at 5.5 so distribution of scores is comparable to that of sten scores on first-order factors.

Table 3

Percentages of Correct Identifications of Well-Adjusted and

Maladjusted School Children

Subgroup	N	Percentage of correct identifications produced by:			
		Neuroticism score	Discriminant score	IQ score	Base rate prediction
I Validation sample					
Well-adjusted boys	96	100.0	75.0	72.3	
Maladjusted boys	76	3.9	68.4	64.0	
Total: boys	172	57.6	72.1	68.6	55.8
Well-adjusted girls	141	94.3	77.3	80.4	
Maladjusted girls	40	20.0	70.0	64.1	
Total: girls	181	77.9	75.7	76.8	77.9
Grand total	353	68.0	73.9	72.8	67.1
II Cross-validation sample					
Well-adjusted boys	107	96.3	63.6	64.1	
Maladjusted boys	45	11.1	48.9	66.7	
Total: boys	152	71.0	59.2	64.8	70.4
Well-adjusted girls	129	93.0	76.7	72.1	
Maladjusted girls	14	14.3	35.7	57.1	
Total: girls	143	85.3	72.7	70.6	90.2
Grand total	295	78.0	65.8	67.6	80.0

Table 4

Convergent and Discriminant Validity of CPQ Neuroticism and Discriminant Scores

Expressed in Terms of Correlations Between Them and Another Measure of

Mental Health Status and Between Them and a Measure of Another Trait

Correlation coefficients[1]	Validation sample		Cross-validation sample
Among measures of mental health[2]			
Neuroticism vs. teacher ratings	.12	(.04)	.22**
Neuroticism vs. discriminant scores	.33**		.45**
Discriminant scores vs. teacher ratings	.63**		.28**
Between measures of mental health and measures of intelligence[3]			
Neuroticism vs. IQ	-.14*	(-.10)	-.17**
Discriminant score vs. IQ	-.50**		-.34**
Teacher ratings vs. IQ	-.52**	(-.38**)	-.50**

Note.--Correlations computed after elimination of pupils rated as having mixed or other problems (including learning difficulties) appear in parentheses.

[1]Values are for product moment correlation coefficients except in case of dichotomized teacher ratings for which biserial r was computed.

[2]N = 353 for validation sample and 295 for cross-validation sample.

[3]N = 346 for validation sample and 281 for cross-validation sample.

*p < .05.

**p < .01.