

Columbia University  
Contributions to Education  
Teachers College Series



**A COMPARISON OF  
THE INTELLECTUAL AND EDUCATIONAL  
STATUS OF NEUROTIC AND NORMAL  
CHILDREN IN PUBLIC SCHOOLS**

**BY**

**ESTHER KATZ ROSEN, PH.D.**

**TEACHERS COLLEGE, COLUMBIA UNIVERSITY  
CONTRIBUTIONS TO EDUCATION, No. 188**

Published by  
**Teachers College, Columbia University**  
New York City  
1925

Copyright, 1925, by TEACHERS COLLEGE, COLUMBIA UNIVERSITY

## ACKNOWLEDGMENT

THE writer wishes to extend her cordial thanks to all those who made this work possible:

To Dr. Eugene Nifenecker, director of the Bureau of Reference, Research, and Statistics of the Public Schools of New York City, and to Dr. Henry West, superintendent of public instruction in Baltimore, for their letters of introduction to the principals of schools in which the testing for this research was done.

To Mrs. Laura O. Guttmacher, executive secretary of the Jewish Children's Bureau of Baltimore, to Dr. Francis L. Dunham, psychiatrist of the Jewish Children's Bureau, and to Miss Dorothy Kahn, superintendent of the Hebrew Benevolent Society of Baltimore, for their invaluable aid in the selection of the children.

To the principals, teachers, and children for their willing coöperation.

To Professor Arthur I. Gates and Professor William A. McCall, of Teachers College, for their ever ready interest and assistance; to Professor Patty S. Hill and to Professor Rudolph Pintner, members of the dissertation committee, for their help and suggestions; to Professor Leta S. Hollingworth, chairman of the committee, for her guidance and inspiration at all times.

E. K. R.

# CONTENTS

CHAP.	PAGE
I. INTRODUCTION	
Discussion of the Problem .....	1
Purpose of the Study .....	3
II. METHOD OF PROCEDURE	
Selection of Children .....	5
Procedure .....	7
Data Regarding the Two Groups .....	8
III. TREATMENT OF RESULTS	
Stanford Binet Test .....	11
Analysis of Stanford Binet Tests at Each Age Level .....	12
Scattering or Amount of Variability on the Stanford Binet .....	22
Stanford Binet Retest .....	25
Pintner Educational Survey Test .....	28
Age-Grade Status .....	31
Pintner-Paterson Performance Tests .....	32
Handwriting Test .....	36
Cross-Out Tests .....	38
IV. DISCUSSION OF FINDINGS AND CONCLUSIONS .....	40
BIBLIOGRAPHY .....	45
APPENDIX .....	49
Case Histories of Various Neurotic Individuals .....	49

## TABLES

NUMBER	PAGE
I. CHRONOLOGICAL AGES OF INDIVIDUALS STUDIED .....	8
II. MENTAL AGES OF INDIVIDUALS STUDIED .....	9
III. INTELLIGENCE QUOTIENTS OF INDIVIDUALS STUDIED .....	9
IV. GRADE LOCATIONS OF INDIVIDUALS STUDIED .....	10
V. STANFORD BINET RESULTS .....	11
VI. DISTRIBUTION OF IQ'S OF THE NEUROTIC GROUP, THE NON- NEUROTIC GROUP, AND TERMAN'S 905 UNSELECTED CHILDREN...	12
VII. AMOUNTS OF SCATTER OF NEUROTIC AND NORMAL GROUPS ON STAN- FORD BINET TEST.....	24
VIII. COMPARISON OF INTELLIGENCE QUOTIENTS AND SCATTER .....	24
IX. RESULTS OF STANFORD BINET RETEST.....	26
X. PINTNER EDUCATIONAL TEST RESULTS .....	28
XI. EDUCATIONAL INDICES OF MIDDLE FIFTY PER CENT .....	30
XII. COMPARATIVE TABLE OF AGE-GRADE STATUS .....	31
XIII. ANALYSIS OF OVER-AGE PERCENTAGES .....	32
XIV. COMPARISON OF HANDWRITING ABILITY .....	37
XV. COMPARISON OF CANCELATION TESTS .....	38

# INTELLECTUAL AND EDUCATIONAL STATUS OF NEUROTIC AND NORMAL CHILDREN IN PUBLIC SCHOOLS

## CHAPTER I

### INTRODUCTION

#### DISCUSSION OF THE PROBLEM

THERE is no dearth of subjective opinion as to what are the distinguishing marks of the neurotic individual. Sharply defined character traits, intellectual abilities, characteristics desirable and undesirable, are parceled out as if they were actual possessions of the neurotic personality. Whether these delineations present a desirable or an undesirable picture depends upon the particular writer.

Cameron [13, p. 10]<sup>1</sup> emphasizes the inherent possibilities of the neurotic individual: "A sensitive nervous organization is often the mark of intellectual possibilities above the average and the children who are cast outside the ordinary mould, who are the most wayward, most intractable, who react to trifling faults of management with the most striking symptoms of disturbance, are often those with the greatest potentialities for achievement and for good. . . . The mother of the nervous child may often rightly take comfort in the thought that her child is worth the extra trouble and extra care which he demands, because he is sent into the world with a mechanism which, just because it is more powerful than the common run, is more difficult to master and takes longer to control and to apply for useful ends."

This quotation gives to the neurotic make-up a certain glamor, it holds its "possessor" in high esteem. A rather different picture is presented by Hollingworth [24, p. 70]: "Neurotics are those

<sup>1</sup> Throughout this study, numbers in brackets refer to the numbered references in the Bibliography, pp. 45-48.

who are characteristically inferior in these essential qualities, among others,—an ordinary degree of coöperation, adherence to definite directions, power of sustained effort, and fidelity to bare facts. Where impulsive response, negativistic attitude, flightiness and illusion cause failure, neurotic children fail. . . . Nervous instability may be found in combination with any degree of I Q, apparently, from dullest to brightest. The relation between them is not certainly known, though there is now considerable indication that the correlation between stability and intellect will be found to be positive and high (but not perfect). This would mean that there are very probably more ill-balanced children among the stupid than elsewhere in the distribution of I Q. That organic quality, which shows itself in superior intelligence, robustness and longevity, also shows itself in nervous stability, more likely than not."

Many statements are recalled upholding these varying points of view. In the course of conversation, a Johns Hopkins psychiatrist remarked: "Of course, only the bright children are the neurotic. You do not find stupid children showing neurotic traits."

This is also the viewpoint of Trigant Burrow [11, p. 179], and of the majority of the psycho-analytic school: "The neurotic patient is frequently far above the average intellectually."

These quotations express the general and popular belief in compensation, which belief is crystallized in such adages as "Easy come, easy go." "Beauty is only skin deep." "The meek shall inherit the earth."

As Gates says [17, p. 194]: "There is a conviction that people extraordinarily competent along one line must be deficient in another. If the other fellow learns rapidly, he will retain poorly. The pretty girl has little sense. The highly intelligent are nervous, unstable or physically inferior. All of these generalizations are, in fact, incorrect."

Thus Thorndike [56, p. 363] frames a generalization based on psychological evidence: "In original nature, the rule is correlation, not compensation."

In this confusion of opinion, of which further illustration need not be given, there is to be found, nevertheless, among the majority of definitions of the term, neurotic, a middle ground dealing with the problem of adjustment.

Blumgart [7, p. 337] says: "The neurotic child is the emotionally maladjusted. Maladjusted children are those whose conduct at home, at play, and in the school, does not fit them into their environment. Maladjustment is largely the use of errors and false solutions as habitual methods of adjustment to life."

Gates [17, p. 186] says: "Neurotic individuals: easily upset, very sensitive to difficulties in adjustment."

Dr. Francis L. Dunham, by whose diagnosis the majority of the children herein studied were selected, says: "Neurotic is a descriptive term used to indicate tendencies resulting from inadequately controlled reactions of the involuntary nervous system. Diagnosis is based upon the presence of unusual personal habits developing therefrom. The development and organization of 'character' is our chief *criterion*, since most of these habits enter into the conduct of the individual."

#### PURPOSE OF THE STUDY

In the course of clinical experience, valuable empirical evidence has been gathered which presents varying findings on the neurotic personality,—his intelligence, capacity, performance, and various behavior traits. The conflicting conclusions arrived at by various investigators furnished the stimulus for this study.

What facts would be revealed by a study planned to test out this empirical evidence? If these characteristic traits appear when neurotic and normal individuals are tested under the same conditions, then these positive results would lend their bit of weight to the possibility, already initiated, of objective identification of the neurotic child. If, however, such differences do not appear, then these negative results would caution us to question the hard and fast distinctions which have sometimes been made between the neurotic and the normal. (It should be stated here that *normal* or *normal mate* is used throughout this study to mean *non-neurotic*.)

The question we set ourselves is: What are the differences in intellectual and educational status between the normal child in public school and the neurotic child who is able to maintain himself in school? In the attempt to reveal the differences of the

<sup>1</sup> All the tests were administered and scored by the experimenter.

4      *A Comparison of Neurotic and Normal Children*

two groups which had been asserted to exist between them, the following tests were administered: <sup>1</sup>

1. Stanford Binet Test. From this, it was hoped to get light on such points at issue as:

- a. Does the curve of intelligence for neurotic children conform to that for normal children?
- b. Are there any particular tests in which neurotics consistently fail?
- c. Is there a greater scattering over the range of the scale among neurotic children?

2. A second Stanford Binet, given two weeks after the first, for data on the question as to whether neurotic children vary more than the normal on retests.

3. Pintner-Paterson Short Performance Scale:

- a. Will one group surpass the other?
- b. Is there a tendency for either group to earn a higher score on the performance than on the Stanford Binet?

4. Pintner Educational Survey Tests:

- a. Is there a tendency for the school achievement of the neurotic group to fall below their capacity as demonstrated on the Stanford Binet?
- b. Do neurotic children fall lower in certain school subjects than in others?

5. Handwriting test, measured by Thorndike Handwriting Scale.

Cyril Burt [12, p. 71] described the handwriting of neurotic children as "irregular and untidy." Will the quality of their handwriting thus reveal their neurotic tendencies?

6. Cancellation tests.

Is the neurotic child more careless and inaccurate?

## CHAPTER II

### METHOD OF PROCEDURE

#### SELECTION OF CHILDREN

THIS study was begun in New York City in the spring of 1923. Public School No. 64, Manhattan, maintained for a time a class for pupils diagnosed as neurotic by the school psychiatrist; and ten boys who had formerly been in this neurotic class formed part of the group of fifty neurotic children studied. The remaining forty were in the Baltimore public schools and were described as neurotic by the psychiatrist of a children's bureau. The subjects were all of Russian Jewish parentage, as it was considered that results would be more comparable if the group were racially homogeneous.

The forty Baltimore children were secured from a social service bureau to which are referred all children of families who are clients of the family welfare society of this social service agency. Every child brought to this bureau is taken as a matter of routine to the bureau's psychiatrist. For purposes of this study, he selected from his records children diagnosed as neurotic who presented no physical problem, and who were in public schools.

Investigations are necessarily influenced by the kind of sample secured. There is the possibility that in this study the findings on the points at issue enumerated in Chapter I might be influenced by the fact that the neurotic children are cases in which the diagnosis of "neurotic" was paid for by philanthropy. It is conceivable that a group of neurotic children secured from a list of private cases of a psychiatrist would give different results. This study used as controls children who were of the same social stratum as the neurotic group,—children who were taken from the same school and who came therefore from the same neighborhood.

Each neurotic child studied was paired with a normal mate for purposes of comparison. The constants for each pair were

sex, nationality, chronological age, grade, and school. The intention, of course, was to have as far as possible only the one differentiating variable,—the possession of neurotic traits.

The following procedure for selection of a normal child to pair with the neurotic child was used. After locating the neurotic child in his grade in school, the record cards for that grade were secured, from which selection was made of that normal pupil who was of the same sex and nationality, and whose age did not differ more than six months,—the nearest in age being selected. If there were no such child in this particular class, search was made in the other like grades of the same school. If this plan failed to yield the desired mate, a similar search was made in the nearest school of the district. In nineteen cases it was necessary to search for a mate outside of the school in which the neurotic was found. The constant factors of grade and school were selected to secure similarity of environmental influences for the pair; nearby schools in the same district would furnish very much the same desideratum.

When selection of the normal child had been made, his teacher was asked whether he presented any particularly difficult or baffling problem, as even such a gross observation suggests neurotic traits. If such were the case, another selection of a child next closest in age was made. Later on, after contact had been established between experimenter and subject, each normal child was asked if he had ever been to a hospital, and if he had, he was asked to which hospital he had gone, and for what purpose and who the doctor was. This information was elicited, of course, for the purpose of finding whether the child had ever been to a psychiatric clinic. If so, the child did not qualify as a normal mate for the pair. The experimenter has been confronted several times with this question: How do you know that your so-called normal child might not, on psychiatric examination, prove to be one of the group labeled neurotic? The answer was: If a child's course of conduct has been such as not to single him out or to draw attention to him as abnormal, or in need of corrective treatment, the fair assumption is that he is a normal child.

The suggestion that each child selected as a normal mate be taken to a psychiatrist for examination was not possible of execution. First, clinics are sufficiently occupied with children known to need their services; second, the time allowed the

experimenter to have these children away from their classrooms was limited; and third, the parents would probably have objected strenuously. The experimenter concluded, after weighing these facts and after benefit of expert counsel, that it was fair and sound to assume that children thus selected as normal were normal.

#### PROCEDURE

The experimenter, after locating the neurotic children who were in one particular school, selected their normal mates in the manner explained. These children were then released from their classrooms and were brought together in an empty room, usually the teachers' rest-room, a vacant classroom, or the school-nurse's room. The experimenter then vouchsafed the following explanation to the group:

"Did you ever hear of Columbia University in New York? (If in Baltimore, the remark was added that it was a place like Johns Hopkins University, or the University of Maryland.) Teachers from all over the United States and from many other countries go there to learn the best ways of teaching you boys and girls. Now, one thing we are studying is: Just what things and how many and how hard things, can boys and girls do at different ages and in different grades?

"We want to know, for example, how much more to expect of a sixth-grade girl or boy than of a fifth; how much more an eleven-year-old boy or girl can do than one who is nine or ten, because, of course, the older you grow, the more you are generally able to do. Isn't that so? Now, the one way we can find out these things is to have many boys and girls of all different ages and different grades do certain things and answer certain questions for us. Many children in New York City and in other schools here have helped. The work has nothing to do with your own teacher or class. It is simply to help us in our study. I needed more boys and girls of your particular grades and ages, and so from the teachers' record cards, I happened to choose your names. Will you be willing to help?"

With one exception, coöperation was offered with immediate cordiality and interest.

After rapport had thus been established, the group-tests were given. The first contact with the individuals selected was inten-

tionally made with them in a group so that the individual would not think he had been singled out as an object of special attention.

The first test distributed was the Pintner Educational Survey. This was followed by the handwriting test and the cancelation series. The children were then told that the remainder of the work was to be done by each child alone, and all except one of the group returned to their classrooms. The Pintner-Paterson Performance Scale and the Stanford Binet were given next to each child. Two weeks after the first Stanford Binet, the experimenter returned and gave each child a retest.

#### DATA REGARDING THE TWO GROUPS

Tables I through IV tabulate the chronological and mental ages, the I Q's and the grades of the individuals in the two groups.

Table I reads: Of the 50 children in the neurotic group, one was seven years chronological age; one was eight years chronological age, etc. Of the fifty children in the normal group, two were seven years chronological age, none were eight years, etc. As has been explained, chronological age was one of the factors constant for each pair and each individual is within six months chronological age of his mate.

TABLE I  
CHRONOLOGICAL AGES OF INDIVIDUALS STUDIED

Group	Chronological Age								No.
	7	8	9	10	11	12	13	14	
Neurotic . . . .	1	1	5	7	11	13	8	4	50
Normal . . . . .	2	0	4	8	11	14	6	5	50
Total . . . . .	3	1	9	15	22	27	14	9	100

Table II reads: Of the 50 children in the neurotic group, 2 were 7 years, mental age; 7 were 8 years, mental age, etc. Of the 50 children in the normal group, 5 were 7 years, mental age; 3 were 8 years, mental age, etc. (The mental age is obtained from the Stanford Binet Test.)

TABLE II  
MENTAL AGES OF INDIVIDUALS STUDIED

Group	Mental Age											No.
	7	8	9	10	11	12	13	14	15	16	17	
Neurotic .....	2	7	15	4	10	1	6	4	0	0	1	50
Normal .....	5	3	13	10	7	4	7	1	0	0	0	50
Total .....	7	10	28	14	17	5	13	5	0	0	1	100

Table III reads: Of the 50 children in the neurotic group, none were below 66 I Q; 2 had I Q's between 66 and 70; none had I Q's between 70 and 74, etc. Of the 50 children in the normal group, 2 had I Q's between 54 and 58, none had I Q's between 58 and 62, etc.

TABLE III  
INTELLIGENCE QUOTIENTS OF INDIVIDUALS STUDIED

Group	Intelligence Quotient										
	54	58	62	66	70	74	78	82	86	90	94
Neurotic .....	0	0	0	2	0	4	6	4	11	4	5
Normal .....	2	0	1	0	2	2	6	5	5	8	5
Total .....	2	0	1	2	2	6	12	9	16	12	10

Group	Intelligence Quotient									No.
	98	102	106	110	114	118	122	126	130	
Neurotic .....	3	5	1	0	1	1	2	0	1	50
Normal .....	6	5	2	1	0	0	0	0	0	50
Total .....	9	10	3	1	1	1	2	0	1	100

Table IV reads: In each group, 1 is in Grade 1; 2 are in Grade 2; etc. As has been explained, the factor of grade location was constant for each pair, therefore there are the same number of neurotic and normal individuals in each grade.

10      *A Comparison of Neurotic and Normal Children*

TABLE IV  
GRADE LOCATION OF INDIVIDUALS STUDIED

Group	Grade								No.
	1	2	3	4	5	6	7	8	
Neurotic .....	1	2	3	13	12	12	4	3	50
Normal .....	1	2	3	13	12	12	4	3	50
Total .....	2	4	6	26	24	24	8	6	100

## CHAPTER III

### TREATMENT OF RESULTS

#### STANFORD BINET TESTS

No significant difference was found between the two groups in intelligence as measured by the Stanford Binet Tests. The curve for the neurotic group begins at a higher point and ends at a higher point, but the great amount of overlapping is the outstanding fact. Ninety-four per cent of the normals are contained between the limits of the IQ of the neurotics.

TABLE V  
STANFORD BINET RESULTS

	Neurotic	Normal
Mean IQ .....	92.32 $\pm$ 1.33	89.52 $\pm$ 1.19
S. D. ....	13.94	12.44
S. D. Difference .....	2.64	2.64
M. A. ....	10 yr. 10 mos.	10 yr. 6 mos.
Total IQ Range .....	68-130	58-113
Lower quartile .....	68-82.5	58-82
Middle 50 Per Cent .....	82.5-100	82-99
Upper Quartile .....	100-130	99-113
Below 96 IQ .....	66%	66%
Between 96-105 IQ .....	22%	28%
Above 106 IQ .....	12%	6%

The middle 50 per cent is contained within almost the same limits in each group, between 82.5 and 100 IQ for the neurotics, and between 82 and 99 IQ for the normals. The same number of each group fall below 96 IQ; 66 per cent of each group. Fifty-eight per cent or 29 out of 50 neurotics fall below their mean IQ, while 48 per cent or 24 reach the mean IQ of the normals. Forty-four per cent or 22 out of 50 normals fall below their mean IQ, while 54 per cent or 27 reach the mean IQ of the neurotics. Pair for pair, 24 neurotics had higher IQ's than their normal mates, 23 normals had higher IQ's than