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# **Mental Health of Rural Children in Ohio**

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In Cooperation With

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The project was known locally as the Miami County Health and Human Development Study. At the county level it was fostered by the Miami County Mental Hygiene Association in cooperation with the schools, the Miami County and Troy Health Department, and with other agencies. In the work of sponsoring this study the local sponsoring group was given financial support by the Fraternal Order of Eagles through its Piqua, Troy, and Tippecanoe City Aeries.

While many persons contributed to the making of this bulletin, the author is especially indebted to John R. Seeley of the Department of Sociology of the University of Chicago. As a member of the research staff, Mr. Seeley actively participated in the collection of the data and critically read the manuscript, making many valuable suggestions for final revision.

It is hoped that this report will be of interest to the general reader as well as to the scientific expert in the field of human development. To this end an attempt has been made to write the text in a style that should be interesting and understandable to the average reader, but which preserves accuracy of statement. The technically critical reader will be interested not only in stated results but also in their validity, their reliability, and in details of methodology. To help meet this interest some basic statistical tables include not only mean scores, but also standard deviations, standard errors, and critical ratios. These last three types of statistics may be ignored by the nontechnical reader.

The research staff was assisted by a professional Advisory Committee which included Dr. John F. Cuber (Sociology), Dr. Herschel Nisonger (Special Education), and Dr. Carroll L. Shurtle (Psychology), all of The Ohio State University and Edward J. Humphreys, M. D., Acting Commissioner of Mental Hygiene for Ohio.

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# *MENTAL HEALTH*

## *of Rural Children in Ohio*

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### INTRODUCTION

Medical practitioners see many patients who suffer from a great variety of illnesses and disorders which do not arise from organic causes, and which are not curable by medicines or by surgery. These illnesses and defects may be called personality disorders, since they are signs of distorted or deviant attitudes and emotions. According to widely accepted theory, these disorders have their origin in emotional tensions and conflicting attitudes.

Such tensions and inner conflicts which cause troublesome physical and mental symptoms are usually outside the conscious awareness and control of those whose lives are limited by their effects. They arise out of continued frustration of basic social and emotional needs, such as the child's need for a secure place in the affections of parents and others who guide him and his need for confidence in himself and in those about him.

It is now understood that a great many of the health problems of adult people have their origin in the frustrations, anxieties, and feelings of inferiority experienced in their childhood and youth. This offers an important clue to a new approach to health. It is believed that one of the most promising ways to raise the level of rural health and to prevent many illnesses and accidents at all ages is to provide happier social and emotional lives for more rural children.

#### **Meaning of Key Terms.**

The term "mental health" as used in this report means adequate personality adjustment. This definition requires some explanation. No fully satisfactory description of the human personality can be given in a brief statement. It is agreed that personality is a social product built up as a result of the innumerable experiences which each person has with other persons. In spite of its complexity, personality can be described simply for present purposes. It is made up of various systems of attitudes built up in the person as a result of his life experiences.

These attitudes are essentially states of readiness on the part of the person to think, feel, and act in characteristic ways toward various situations. Perhaps the most basic of these attitudes are those toward oneself and toward other people. Toward himself a person may develop an attitude of self-confidence and self-esteem or one of inferiority. Toward others he may develop attitudes of warm friendly acceptance or of anxiety and rejection. Such attitudes become the ruling forces in a person's life.

The term "adjustment" as used here refers to the extent to which the various systems of attitudes, feelings, and actions which make up the personality function harmoniously together, and the extent to which a personality functions efficiently in a world of other persons. Good personality adjustment implies a minimum of warped and distorted attitudes and emotions on the one hand, and a reasonable harmony in the operation of the persons normal attitudes on the other. It also implies adequate opportunities to carry out the activities demanded by one's normal attitudes in harmonious relations with other persons.

Poor personality adjustment or maladjustment arises in the child or adult when conflicting demands made upon him arouse within him conflicting and inconsistent attitudes and feelings, and when he is denied or deprived of the kinds of experiences necessary to satisfy his basic social and emotional needs. Such conflicts and deprivations when long continued without relief or hope of relief are called frustrations. They arouse emotional tensions and strong feelings which may produce both bodily and mental symptoms. They may produce the same kinds of bodily aches, pains, and discomforts as are produced by some physical disease. Also these frustrations or tensions may produce mental symptoms ranging all the way from a sense of boredom, futility, and lack of fulfillment to profound exhaustion or paralyzing feelings of anxiety.

Mental health then means good personality adjustment. It does not imply absence of emotional conflicts and frustrating episodes in life. It does imply the ability to manage one's tensions, resolve one's conflicts, and to find wholesome escapes from frustrations.

### **Why This Report Was Prepared**

This report has been prepared primarily to present the results of an attempt to test an important hypothesis. The hypothesis or assumption tested is that farm homes and farming communities as compared to city homes provide a relatively favorable environment for healthy personality growth in children.

Interest in problems of mental health was greatly stimulated during the recent War by the findings pertaining to health defects among Selective Service registrants. The draft screenings uncovered an enormous amount of chronic partial disability among men of military age. Most surprising to many people was the fact that throughout the history of the Selective Service, personality disorders and character defects constituted the leading causes for rejection. Such disorders and defects also were the leading reasons for the medical discharge of men from the armed forces.

Rural people have been especially concerned about the personality difficulties revealed during the War. The evidence indicated that such difficulties were even more prevalent among farm men than among those in other occupations. Relatively few of these men suffered from such grave symptoms as those characterized by insanity. Great numbers did, however, have weak spots in their personalities which, in the eyes of Selective Service examiners, made them vulnerable to serious breakdown under conditions of unusual emotional stress and strain. This vulnerability, it was presumed, made them unfit or poor risks for army or navy. It may be assumed further that most of the personal and social maladjustments which unfitted rural men for military service place decided limitations upon the effectiveness of their functioning in civilian activities. Doubtless their emotional tensions and conflicts at the best make them less happy, less efficient, than they might otherwise be.

Various interpretations have been placed upon the Selective Service finding of disproportionately large numbers of farm men with personalities inadequate to the demands of military service. The following views have been stated among others:

1. Some have thought that the psychiatric screening was finer for farm men than for other registrants. This might mean that some attitudes and behavior that appeared abnormally deviant to the urban-minded examiner might actually be accepted as normal and expected in some rural communities.
2. Some have felt that agricultural deferment policies tended to keep disproportionately large numbers of the best adjusted and emotionally most stable farm men from being screened at all, since they often had a greater stake in the land and a greater opportunity to produce food during the War.

3. Another interpretation is that disproportionately large numbers of the best adjusted farm-reared youth leave farming for other occupations. This would have the effect of lowering the average level of mental health among adults in the farm population, by leaving disproportionately large numbers of poorly-adjusted persons in the country.
4. Finally, it has been assumed by some very thoughtful persons that rejection rates for personality disorders were higher among farm men because, compared with cities, farm homes and farm communities provide a relatively unfavorable environment for healthy personality development in children and youth. This assumption cannot be accepted unless proven by careful scientific research.

Equally valid is the opposite assumption that farm-reared children as a group are achieving as high, or a higher average level of personal and social adjustment than are comparable groups of children reared in city, town, or village homes. This is the assumption with which this report is concerned.

### **Previous Studies Related to This Problem**

The assumption that farms provide a relatively favorable environment for rearing mentally healthy children has received little scientific study. Only a few comparative studies of rural and urban children have been made by competent research personnel.

Earlier studies have generally shown that rural children usually tend to rate somewhat lower in personality adjustment than do comparable groups of urban children when results of the ordinary paper and pencil tests were used as measures. Such factors as lower material standards of living, and the more authoritative patterns of family organization have been cited as important determiners of poor adjustment among country children.

Some more recent studies have suggested that rural living under some circumstances at least, is definitely associated with desirable personal and social adjustment in children.<sup>1</sup>

### **Source of Data**

The subjects of the present study were 1,229 third and sixth grade children in the public schools of Miami County, Ohio. These were subjects of a personality testing program administered in the spring of 1946.

The subjects of this study were age-comparable. They were classified into three residence categories. A total of 371 lived on farms and were attending the various township and village schools in the county. The largest number, 573, lived in the several small towns and villages and in the open country but not on farms. These are designated village, or rural nonfarm, children. The remaining 285 boys and girls lived in the city of Piqua (population about 16,000 in 1940).

Third and sixth grade children in the city of Troy were also included in the larger study from which the data for this report are drawn. Since, however, the methods of study were slightly different in the case of the Troy children the results are not included in this report.

### **The Larger Study**

The data used in this report were collected as a part of the project known locally as the Miami County Health and Human Development Study. It was initiated in April 1946 to investigate mental health needs and resources in a

<sup>1</sup> Stott, Leland H. 1945. "Some environmental factors in relation to the personality adjustment of rural children." *Rural Sociology* 10; 394-403.

typical rural and semi-rural area. The study was organized for three major purposes:

1. To make a county-wide survey of mental health needs and resources.
2. To make scientific studies of the factors associated with good and with poor mental health.
3. To carry out experiments in community organization and social planning to meet the county's health and human development needs.

The survey included, in addition to the study of school children, a study of personality disorders among Selective Service registrants, a study of delinquent and dependent children, a study of adult crime, a study of commitments to State institutions for the mentally ill, the mentally deficient, epileptics, and a study of divorce.

Three mimeograph reports dealing with survey results have been issued to date.<sup>2</sup>

### **The Survey County**

There were two major reasons for the choice of Miami County for inclusion in this study. The first was its representative character. The second reason was the great local interest and enthusiasm for the project.

In several respects this county is usually considered fairly typical of many counties in western Ohio. In a study of the rural regions of the United States it was included as one among more than 100 counties making up a region designated the "Eastern Midwest." This region included a considerable area in Ohio as well as parts of Indiana and Michigan.

The population of Miami County is distributed among two small cities, a number of villages, and among open country farm and nonfarm homes. In 1940 the county had a population of about 52,600. By place of residence that population was distributed as follows:

1. About 25,700 people lived in two small cities—Piqua with a population of almost 16,000 and Troy with a population of about 9,700.
2. The only other place with more than 2,500 inhabitants was Tippecanoe City, the population of which was about 2,900 in 1940.
3. About 6,700 residents lived in nine incorporated places scattered throughout the county. The population of these small places ranged from 212 in the smallest to 1,945 in the largest village.
4. This left about 17,300 people living in unincorporated territory. Of these, 12,700 lived on farms. The remaining 4,600 lived in nonfarm homes in the open country and in small unincorporated villages.

The majority of workers employed in this county were engaged either in manufacturing or in agriculture. In 1940, machine manufacturing was the largest of the urban industries, though many small plants turned out a great variety of products. Large numbers of workers were engaged, however, in wholesale and retail trade and in the various service trades.

### **Methods of Collecting Data for This Study**

For the study of personality adjustment of school children, three instruments were used in recording data. These included:

1. A standardized personality test by which each student in the survey recorded his own feelings and attitudes pertaining to his personal and social adjustment.
2. A device by which each classroom teacher was asked to rank her students according to her best judgment of their mental health.
3. A companion's rating scale by which students in each class were allowed to record their own observations of deviant attitudes and behavior in the other members of their class.

<sup>2</sup> Progress report No. 1, "Mental and Personality Disorders Cause nearly One-fourth of all Rejections in Miami County"; Progress report No. 2, "Mental Health Problems Among School Children in Miami County"; Mimeographed Bulletin No. 195, "Mental Health Needs in a Rural and Semi-rural Area of Ohio"; all published by the Department of Rural Economics and Rural Sociology at The Ohio State University, Columbus.

<sup>3</sup> Mangus, A. R. 1939. "Rural Regions of the United States" U. S. Government Printing Office, Washington, D. C.

The Elementary Series of the California Test of Personality<sup>1</sup> was the standardized test employed. This test is comprised of two main sections. Each section is made up of six subtests. Each of the subtests contains 12 questions, a total of 144 altogether. Section I of the inventory contains the subtests pertaining to **self-adjustment**. These are designed to provide measures of: (1) Self-reliance, (2) Sense of personal worth, (3) Sense of personal freedom, (4) Feeling of belonging, (5) Freedom from withdrawing tendencies, and (6) Freedom from nervous symptoms.

Section II deals with the following six components of **social adjustment**: (1) Social standards, (2) Social skills, (3) Freedom from anti-social tendencies (4) Family relations, (5) School relations, and (6) Community relations.

Each subtest is scored separately, and the separate scores are added to obtain a **self-adjustment** score, a **social adjustment score**, and a **total adjustment** score for each child.

Tests of personality are designed to measure modes of thinking, feeling, and acting, including attitudes or tendencies to act. They are generally less reliable statistically than are tests of ability and achievement. The authors of this test did, however, obtain a high degree of statistical reliability by using standard methods of determination. The authors of the test tried to assure its validity by a careful selection of the items used in the inventory, and by disguising the items so as to prevent the subject's ready detection of their purpose and to reduce the likelihood of his painting a self-portrait better than the original.

In recording the teacher's judgment of her students, each instructor was asked to arrange the members of her class in rank order on the basis of her best judgment of each child as a "normal, wholesome, happy, well-adjusted person."

The companions' ratings were used to obtain evaluation of each child by his companions. Children are acutely sensitive to deviant behavior or deviant attitudes in other children. In order to utilize children's judgment of each other a **Guess Who** test was administered to all third and sixth grade children. This device was constructed and used by members of the Psychology Department at The Ohio State University for a similar purpose in 1941.<sup>2</sup>

The Guess Who Game had 42 statements by means of which each child in a given class could rate every other child in his room. Some of the items appeared quite innocuous such as: "This person has traveled more than anyone else in the room. Guess Who....." Such questions added to the play interest and helped to make a game of the procedure. They also helped disguise the object of the test and the real significance of some questions from those taking the test. Twenty of the items were designed to select mal-adjusted children, and to reveal deviant behavior. One example: "This person is always picking on the kids who are younger and smaller. Guess Who..." A few items were positive in nature, as: "Who is the person everybody would like for a friend?.....", and "Who is it that has more friends than anyone else in the room?.....".

Each child was asked to write in the name of the proper person (himself or another) or to write in **Nobody** if the description fitted no one in his room.

In scoring this test no child was given a positive or a negative score unless he was named by at least one-fifth of his classmates on one or more significant items. If so large a proportion of his classmates named him on any such item, a count was made of the total number of times that each child was named on all significant items in the test. This total was then divided by the number of children in the classroom to get a final test score. The **me** entries were ignored since the subject could not be identified.

<sup>1</sup> Published by the California Test Bureau, Los Angeles, California.

<sup>2</sup> See "A Study of the Mental Health Problems in Three Representative Elementary Schools," 1942. Ohio State University Bureau of Educational Research Monograph 25, 130-161.

## **Additional Purposes of This Report**

As stated earlier, the main purpose of this report is to test the assumption that, in a high ranking agricultural county in Ohio, living on a farm is more favorable to good personality adjustment in children than is living in a rural nonfarm or small city home. Two additional goals are included: (1.) To report some significant findings regarding sex differences in personality adjustment in school children, and (2.) To report some significant findings pertaining to the personality adjustment of children retarded in their school progress.

## **Limitation of The Study**

While Miami County is, in many respects, typical of numerous other counties, it cannot be considered representative in all respects. Whether the county is representative of residence differences in personality adjustment of school children is unknown. Hence, the conclusions stated in this report may have no validity for areas other than the ones actually included in the present study.

## **PERSONALITY ADJUSTMENT OF FARM AND NONFARM CHILDREN**

Does living on a farm and growing up in a farm house prove to be a help or a hindrance to the achievement of good mental health as compared with living in a village or in a city?

It may be taken for granted that in any area **some** farm children will achieve better personality adjustment than will **some** city, or small town boys and girls. Also, that some farm children will lag behind some city children in their personal and social growth and development.

The problem here is to discover whether farm children as a group are as well adjusted as are comparable groups of rural-nonfarm and of city children. How does a representative group of farm boys as a group compare socially and emotionally with representative groups of boys living in village and in city homes? How do groups of farm and nonfarm girls compare with respect to their personality adjustment?

## **Methods of Analyzing Personality Test Results**

As previously stated, the California Test of Personality, elementary series, was administered to children in the third and sixth grades of the schools in Miami County in the spring of 1946. This test was designed to reveal characteristic tendencies on the part of each child to respond to a variety of situations of major importance in his life. Its major purpose is to provide measures of the extent to which the child is adjusting to the problems and conditions which confront him, in other words, the extent to which he is developing a normal, happy, and socially effective personality.

The basic data used here consisted of the scores achieved on these various subtests of the California Personality Test by more than 1,200 children included in this report. The scores for self-adjustment and for social adjustment had a possible range from 0 to 72. The actual range was from 18 to 72. The possible range of scores for each subtest was 0 to 12. The actual range of scores varied among the several tests.

The methods of analysis and comparison followed the usual statistical procedures applied to data of this kind. The scores for each test were arranged in frequency distributions by residence and by sex. The usual methods of summarization, comparison, and analysis were then applied to these frequency tables.

The first step in summarization and analysis was a computation of the mean or average score for each distribution. When these means were compared it was found that the average farm child stood well above the average city



child in both personal and social adjustment. The differences between farm and village children were quite small, favoring the farm children with respect to self-adjustment and village children with respect to social adjustment.

The means could not be accepted as absolutely reliable measures of the difference in adjustment status of rural and urban children in Miami County. The means were in the nature of estimates derived from a sampling of farm, village, and city children. In any sample such as this, numerous unrelated factors are known to operate independently to produce a given score and to produce a given group mean. It is well known to research workers that a mean derived from a sample is variable. Repeated samples, such as the ones used in this study, will give a distribution of means, which vary due to chance conditions of sampling. Relatively small differences between means may therefore arise from chance errors of sampling and may imply no real or statistically significant difference.

Fortunately, the unreliability of the mean scores and the difference between scores can be estimated. This is possible because the distribution of means from repeated samples have been found to follow the laws of chance.

In order to determine the statistical significance of the differences between mean adjustment scores for rural and urban children, additional analyses were made. The standard deviation was computed for each distribution. Using these standard deviations in relation to the number of cases in the samples it was possible to compute the standard errors of the means and the standard error<sup>6</sup> of the differences between mean scores by the usual statistical methods.

### **Analysis of Personality Test Results**

As a result of careful statistical analyses it appears conclusive that farm children in Miami County as a group achieve a somewhat higher level of personal and social adjustment than do urban children living in the small city of Piqua.<sup>7</sup> This assumes, of course, that the California Test of Personality provides a valid measure of these group differences.

While Miami County farm children differ favorably from city children in that county in personality adjustment, no significant differences either in self-adjustment or in social adjustment were found between rural farm and rural nonfarm boys and girls. (The results are shown in detail in Table 1).

The mean self-adjustment score for the 371 farm children in this study was 48.68. This mean was 3.25 points higher than that for the city children at the same grade levels in school. This difference favoring farm children was 4 times greater than its standard error as indicated by the critical ratio shown in Table 1. Its probability of chance occurrence is only about 1 in 1,000. In other words, it represents a statistically significant difference in mean scores for the two groups of boys and girls.

Each actual difference between mean scores when expressed in terms of its standard error gives a result known as the critical ratio (C.R.). This constitutes the measure of unreliability used in this study. In interpreting the critical ratio it is customary to consider a difference twice as great as its standard error indicative of a statistically significant difference. A difference that great in relation to its standard error would occur only 5 times in 100 repeated samples. A critical ratio of 3 and over in 100 repeated samples amounts to practical certainty that the observed difference is too large to be accounted for by chance errors of sampling.

<sup>6</sup>The term **error** as here used means a deviation, not a mistake.

<sup>7</sup>No claim is made here for the validity of this conclusion for areas other than the ones actually included in this study.

Similarly, farm children as a group differed favorably from city children with respect to social adjustment. The difference of 2.17 in mean social adjustment scores between the two groups was not quite as great as the difference in self-adjustment but was nevertheless a significant difference as indicated by a critical ratio of 2.8 (Table 1).

Village and open country nonfarm children also differ favorably from the city children in this study, both in self-adjustment and in social adjustment. On the other hand, such differences as appeared between the farm and rural nonfarm groups proved to be small and of no statistical significance, the critical ratios being in each case considerably less than 2.

TABLE 1. COMPARISON OF MEAN ADJUSTMENT SCORES FOR THIRD AND SIXTH GRADE CHILDREN IN THE PUBLIC SCHOOLS OF MIAMI COUNTY, OHIO, 1946

| A. Means and Standard Deviations |                    |                 |                    |                   |                    |  |
|----------------------------------|--------------------|-----------------|--------------------|-------------------|--------------------|--|
| Residence                        | Number of Children | Self-Adjustment |                    | Social Adjustment |                    |  |
|                                  |                    | Mean Score      | Standard Deviation | Mean Score        | Standard Deviation |  |
| Farm                             | 371                | 48.68           | 10.20              | 56.25             | 9.00               |  |
| Village*                         | 573                | 47.95           | 10.40              | 56.58             | 9.65               |  |
| City                             | 285                | 45.42           | 10.60              | 54.08             | 10.35              |  |

  

| B. Group Differences |                           |                              |                |                           |                              |                |
|----------------------|---------------------------|------------------------------|----------------|---------------------------|------------------------------|----------------|
| Groups Compared      | Self-Adjustment           |                              |                | Social Adjustment         |                              |                |
|                      | Difference in Mean Scores | Standard Error of Difference | Critical Ratio | Difference in Mean Scores | Standard Error of Difference | Critical Ratio |
| Farm - City          | 3.25                      | .824                         | 4.0            | 2.17                      | .770                         | 2.8            |
| Farm - Village       | .73                       | .683                         | 1.1            | -.33                      | .611                         | 0.5            |
| Village - City       | 2.53                      | .762                         | 3.3            | 2.50                      | .732                         | 3.4            |

\*Includes some children living in open country non-farm homes.

### Residence Comparisons by Sex

It is well known among child study experts that boys and girls generally differ considerably with respect to personality adjustment. The question may also be raised as to how farm boys compare with village and city boys, and how farm girls rate in relation to nonfarm girls. This question was made a subject for investigation for the samples included in this study. The findings may be briefly summarized.

It was found that both farm and village boys differ favorably from city boys but do not differ significantly from each other. The statistically significant differences in mean scores favored the rural boys both with respect to self-adjustment and with respect to social adjustment (Table 2).

Farm girls differed favorably from city girls with respect to self-adjustment but not with respect to social adjustment. Village girls on the other hand showed superior adjustment both personally and socially as compared to those living in the city. As in the case of the boys, farm and village or rural nonfarm girls did not differ significantly from each other (Table 2).

TABLE 2. COMPARISON OF MEAN ADJUSTMENT SCORES FOR THIRD AND SIXTH GRADE CHILDREN BY RESIDENCE AND SEX  
A. Means and Standard Deviations

| Sex and Test      | Mean Score |          |       | Standard Deviation |          |       |
|-------------------|------------|----------|-------|--------------------|----------|-------|
|                   | City       | Rural    |       | City               | Rural    |       |
|                   |            | Non-Farm | Farm  |                    | Non-Farm | Farm  |
| Boys (Number)     | 158        | 272      | 190   | —                  | —        | —     |
| Self Adjustment   | 11.33      | 47.47    | 46.91 | 10.35              | 10.95    | 10.15 |
| Social Adjustment | 51.17      | 54.07    | 51.15 | 11.10              | 10.75    | 9.80  |
| Girls (Number)    | 127        | 301      | 181   | —                  | —        | —     |
| Self Adjustment   | 47.90      | 50.23    | 50.61 | 10.60              | 10.25    | 9.60  |
| Social Adjustment | 57.91      | 59.68    | 58.49 | 8.85               | 7.70     | 7.55  |

B. Group Differences

| Sex and Test      | Farm - City |       |      | Farm - Non-Farm |       |      | Non-Farm - City |       |      |
|-------------------|-------------|-------|------|-----------------|-------|------|-----------------|-------|------|
|                   | Diff.       | S.E.  | C.R. | Diff.           | S.E.  | C.R. | Diff.           | S.E.  | C.R. |
| Boys              |             |       |      |                 |       |      |                 |       |      |
| Self Adjustment   | 2.58        | 1.118 | 2.3  | -.56            | 1.010 | 0.6  | 3.14            | 1.058 | 3.0  |
| Social Adjustment | 2.98        | 1.153 | 2.6  | .08             | .964  | 0.1  | 2.90            | 1.118 | 2.6  |
| Girls             |             |       |      |                 |       |      |                 |       |      |
| Self Adjustment   | 2.71        | 1.095 | 2.5  | .98             | .933  | 0.4  | 2.33            | 1.049 | 2.2  |
| Social Adjustment | .55         | .892  | 0.6  | -1.19           | .720  | 1.7  | 1.74            | .844  | 2.1  |

Residence Comparisons on Subtests

On what particular components of personal and of social adjustment are farm and village children favored when compared to those in the city? Are rural boys and girls more self-reliant? Do they have a greater sense of security, of self-confidence, of personal freedom? Are they better adjusted to home, school, and community?

Answers to these questions were sought by analyzing the scores of the various subtests of the California Test of Personality in the same way as were the scores for total self- and social adjustment. The results are shown in Table 3.

It was found that farm children differ favorably and significantly from city children in every component of self-adjustment save one. This one related to a sense of personal freedom. Even in this quality, however, farm children were on a par with their city cousins. The average farm child was also superior to city boys and girls in three of the six components of social adjustment.

**Self-reliance.**—The farm group was significantly more self-reliant than was the one city group included in this study. This would indicate that the country children learn to do things independently of others, and to depend upon themselves and direct their own activities to a favorable degree. Likewise, village children on the average were more self-reliant than those in the urban sample.

**Sense of personal worth.**—Farm boys and girls were especially favored in their possession of a sense of personal worth. It is well known that one of the basic foundations for mental health or adequate personality development is

TABLE 3. COMPARISON OF MEAN ADJUSTMENT SCORES FOR THIRD AND SIXTH GRADE CHILDREN IN THE PUBLIC SCHOOLS OF MIAMI COUNTY, OHIO, BY RESIDENCE, 1946

**A. Means and Standard Deviations**

| Test                      | Mean Score |          |       | Standard Deviation |          |      |
|---------------------------|------------|----------|-------|--------------------|----------|------|
|                           | City       | Rural    |       | City               | Rural    |      |
|                           |            | Non-Farm | Farm  |                    | Non-Farm | Farm |
| Self Adjustment           |            |          |       |                    |          |      |
| Self-Reliance             | 7.18       | 7.58     | 7.49  | 2.02               | 1.76     | 1.81 |
| Sense of Personal Worth   | 7.38       | 7.92     | 8.51  | 2.36               | 2.46     | 2.36 |
| Sense of Personal Freedom | 8.50       | 8.85     | 8.41  | 2.41               | 2.24     | 2.61 |
| Sense of Belonging        | 9.14       | 9.85     | 10.04 | 2.32               | 2.18     | 1.93 |
| Withdrawing Tendencies    | 6.60       | 6.85     | 7.15  | 3.17               | 3.10     | 3.11 |
| Nervous Symptoms          | 6.62       | 6.90     | 7.08  | 2.93               | 3.01     | 2.77 |
| Social Adjustment         |            |          |       |                    |          |      |
| Social Standards          | 10.04      | 10.12    | 10.01 | 1.76               | 1.64     | 1.66 |
| Social Skills             | 8.10       | 8.96     | 8.80  | 2.24               | 1.91     | 1.80 |
| Anti-Social Tendencies    | 9.16       | 9.33     | 9.25  | 2.47               | 2.25     | 2.27 |
| Family Relations          | 9.20       | 9.53     | 9.45  | 2.57               | 2.65     | 2.49 |
| School Relations          | 7.74       | 8.45     | 8.56  | 2.87               | 2.74     | 2.57 |
| Community Relations       | 9.84       | 10.19    | 10.18 | 2.30               | 1.76     | 1.58 |
| Number of Children        | 285        | 573      | 371   |                    |          |      |

**B. Group Differences**

| Test                   | Farm - City        |                   |                   | Farm - Rural Non-Farm |      |     | Rural Non-Farm - City |      |                  |
|------------------------|--------------------|-------------------|-------------------|-----------------------|------|-----|-----------------------|------|------------------|
|                        | Diff. <sup>1</sup> | S.E. <sup>†</sup> | C.R. <sup>‡</sup> | Diff.                 | S.E. | CR. | Diff.                 | S.E. | CR. <sup>*</sup> |
|                        | Self Adjustment    |                   |                   |                       |      |     |                       |      |                  |
| Self-Reliance          | .31                | .155              | 2.0               | -.09                  | .123 | 0.7 | .40                   | .138 | 2.9              |
| Personal Worth         | 1.13               | .187              | 6.0               | .59                   | .162 | 3.6 | .54                   | .176 | 3.1              |
| Personal Freedom       | -.09               | .195              | 0.5               | -.44                  | .165 | 2.7 | .35                   | .171 | 2.0              |
| Sense of Belonging     | .90                | .171              | 5.3               | .19                   | .185 | 1.4 | .71                   | .165 | 4.3              |
| Withdrawing Tendencies | .55                | .247              | 2.2               | .30                   | .208 | 1.4 | .25                   | .228 | 1.1              |
| Nervous Symptoms       | .46                | .226              | 2.0               | .18                   | .192 | 0.9 | .28                   | .215 | 1.3              |
| Social Adjustment      |                    |                   |                   |                       |      |     |                       |      |                  |
| Social Standards       | -.03               | .135              | 0.2               | -.11                  | .110 | 1.0 | .08                   | .127 | 0.6              |
| Social Skills          | .70                | .165              | 4.2               | -.16                  | .123 | 1.3 | .86                   | .155 | 5.5              |
| Anti-Social Tendencies | .09                | .187              | 0.5               | -.08                  | .152 | 0.5 | .17                   | .173 | 1.0              |
| Family Relations       | .25                | .200              | 1.3               | -.08                  | .171 | 0.5 | .33                   | .187 | 1.8              |
| School Relations       | .82                | .217              | 3.8               | .11                   | .176 | 0.6 | .71                   | .205 | 3.5              |
| Community Relations    | .34                | .162              | 2.1               | -.01                  | .110 | 0.1 | .35                   | .155 | 2.3              |

<sup>\*</sup>Actual difference between mean scores.

<sup>†</sup>Standard error of the difference between mean scores.

<sup>‡</sup>Critical ratio: the difference divided by its standard error.

a reasonable degree of confidence in oneself and in those about one. This study shows that in the survey county farmers' sons and daughters have this quality to a greater degree than either city or village children. Their average score in this trait was 8.51 as compared to scores of only 7.38 for the city group and 7.92 for the village group. The differences among these means were all significant of real differences in the groups compared (Table 3).

**Sense of belonging.**—Another basic foundation for mental health, it is widely agreed, is a child's sense of personal security, or a "sense of belonging" in his relations with other persons and groups that exert determining influence in his development. In this quality rural children, both farm and nonfarm, differed favorably from the city group.

**Withdrawing tendencies.**—Normal personality adjustment is characterized by reasonable freedom from withdrawing tendencies. Such tendencies when present are seen in the child who is sensitive, timid, and lonely, and who tends to daydream and to concern himself with fantasy as a substitute for successes in real life. In the test of this quality, farm children again excelled when compared with the city sample.

**Nervous symptoms.**—Emotional conflicts frequently give rise to such symptoms as loss of appetite, frequent eye strain, inability to sleep, or a tendency to be chronically tired. This study showed that farm children were freer from such symptoms than were urban children.

**Personal freedom.**—It is believed that a reasonable sense of personal freedom is conducive to good personality adjustment. A person enjoys such a sense of freedom when he is permitted to have a reasonable part in the determination of his activities and in setting the rules which will determine his life. Farm children did not excel in this component of self-adjustment. This result is not surprising since other studies indicate that the farm family is generally less democratic than the typical urban family. They did not differ significantly from urban children, but they differed unfavorably from village boys and girls in this trait (Table 3).

With respect to the components of social adjustment, farm children did not fare quite so well. In no component, however, did they compare unfavorably either with city or village children.

**Social skills.**—The achievement of good mental health, or good personality adjustment, depends to a considerable degree upon the development of skills in getting along with other people. Since farm children are thought of as being rather isolated from many social contacts it was surprising to find that they showed decided superiority over urban children in being socially skillful or effective as measured by test results. Village boys and girls, and those living in open country nonfarm homes, also showed superiority over the urban group in this component. As in most other respects, the farm and village groups did not differ significantly from each other.

**School relation.**—Rural children, both farm and nonfarm, were on the average better adjusted to the school situation than were those in the city. Those pupils living on farms had an average adjustment score nearly one point higher than urban pupils on the 12-point scale designed to measure adjustment to school. The difference was statistically significant as indicated by the fact it was 3.8 times as great as its standard error (Table 3).

Farm and village students did not differ significantly with respect to their school adjustment.

**Community relations.**—Farm and village children as groups were making relatively good adjustments to community situations as indicated by the test results. The indications are that the average rural child mingles more happily with his neighbors, takes pride in his neighborhood, is more tolerant of strangers and more respectful of laws and regulations than is the average city child of the same elementary school age.

**Family relations.**—The young person who exhibits desirable family relations generally feels that he is loved, wanted, and well-treated at home. He lives easily and comfortably with other members of his family. He is usually subjected to parental control that is neither too strict nor too lenient.

It is interesting that no one of the three groups of children—city, farm, and village—differed significantly from any other in this respect. The average score on the family relations test was highest for village children and lowest for those in the city. The differences were too small, however, to be considered statistically significant.

**Social standards.**—Another component of social adjustment is an understanding of what is regarded as being right and wrong in one's group and an appreciation of the necessity of subordinating one's own desires to the demands of the group under some circumstances. In this component, as in the case of family relations, no significant group differences appeared among the three residence groups of children in this study.

**Freedom from anti-social tendencies.**—The anti-social boy or girl is generally thought of as one who tries to satisfy his own wants in ways that are damaging or unfair to others. Antisocial behavior is seen in such acts as bullying other children, frequent quarreling, property destruction and other socially unacceptable tendencies. Normal personality adjustment is characterized by a reasonable degree of freedom from these tendencies.

This study shows that farm, village, and city children were about on a par with respect to this component of social adjustment. The mean scores for these groups did not show any significant differences among the three residence groups (Table 3).

### **Comparison of Rural Children With a Standard Group**

Results presented up to this point indicate that in Miami County there are factors involved in rural living that are favorable to personality adjustment in children as compared to children of comparable age in an adjacent city of small size. The question remains as to whether the mean adjustment scores found for the groups of children in this study are as high or higher than would normally be expected for children of elementary school age.

No completely satisfactory norms against which the children in the present study may be compared are available. The only available standard for comparison is found in a table of percentile norms published with the California Test of Personality.<sup>8</sup> These norms were established on the basis of experimental test results provided by about 1,000 elementary school children in and around Los Angeles. These children comprised the "standard group" adopted by the authors of the test.

When the mean or average personality subtest scores for the rural children of Miami County were compared with those of the "standard group" it was found that in self-reliance the average rural child rated significantly above the norm established for this test. In most other respects the rural children as a group rated below the established norms. The discrepancies may, however, be due to differences in language factors and other regional culture differences rather than to actual differences in personality adjustment.

### **Teacher's Ranking of Farm and Nonfarm Children**

It will be recalled as a part of this study of personality adjustment of rural and city children, teachers were asked to rank the members of their respective classes. In response, each teacher ranked the members of her class into 7 groups on the basis of her considered judgment of the normality of their personal and social development.

Did the teachers tend to rank farm or nonfarm children higher as normal, healthy, wholesome persons? Unfortunately this question could be answered only for those teachers in the county and village school systems, and comparisons could be made only as between rural farm and rural nonfarm children. This was due to the fact that while both rural farm and rural nonfarm students were found in the classes of the country and village schools, only city children attended the city schools.

Interestingly enough, teachers tended to rate farm children above rural nonfarm children as normal, healthy, wholesome persons. In the county and village schools, students living in farm homes made up 39.5 percent of all stu-

<sup>8</sup> Manual of Directions, California Test of Personality, Elementary Series, p. 16.

dents, but they made up 42.7 percent of those that teachers ranked highest. On the other hand, the farm children who constituted 39.5 percent of all students comprised only 33.9 percent of those ranking lowest in the teacher's estimation. (Table 4).

TABLE 4. TEACHERS' RANKING OF THIRD AND SIXTH GRADE STUDENTS BY RESIDENCE AND SEX, 1946

**Both Sexes**

| Rank         | Number |      |                |      | Per Cent |       |                |       |
|--------------|--------|------|----------------|------|----------|-------|----------------|-------|
|              | Total  | City | Rural Non-Farm | Farm | Total    | City  | Rural Non-Farm | Farm  |
| <b>Total</b> | 1225   | 285  | 569            | 371  | 100.0    | 100.0 | 100.0          | 100.0 |
| 1            | 107    | 18   | 17             | 42   | 8.7      | 6.3   | 8.3            | 11.3  |
| 2            | 134    | 33   | 58             | 43   | 10.9     | 11.6  | 10.2           | 11.6  |
| 3            | 116    | 38   | 70             | 38   | 12.9     | 13.3  | 12.3           | 10.2  |
| 4            | 493    | 131  | 211            | 148  | 40.3     | 16.0  | 37.6           | 39.9  |
| 5            | 139    | 33   | 65             | 41   | 11.3     | 11.6  | 11.4           | 11.1  |
| 6            | 104    | 16   | 57             | 31   | 8.5      | 5.6   | 10.0           | 8.4   |
| 7            | 102    | 16   | 58             | 28   | 8.3      | 5.6   | 10.2           | 7.5   |

**Boys**

| Total | 618 | 158 | 270 | 190 | 100.0 | 100.0 | 100.0 | 100.0 |
|-------|-----|-----|-----|-----|-------|-------|-------|-------|
| 1     | 35  | 6   | 12  | 17  | 5.7   | 3.8   | 4.4   | 8.9   |
| 2     | 56  | 12  | 26  | 18  | 9.1   | 7.6   | 9.6   | 9.5   |
| 3     | 64  | 20  | 29  | 15  | 10.4  | 12.7  | 10.7  | 7.9   |
| 4     | 237 | 70  | 89  | 78  | 38.2  | 44.3  | 33.0  | 41.1  |
| 5     | 82  | 20  | 37  | 25  | 13.3  | 12.7  | 13.7  | 13.2  |
| 6     | 71  | 16  | 39  | 19  | 12.0  | 10.1  | 14.8  | 10.0  |
| 7     | 70  | 14  | 38  | 18  | 11.3  | 8.9   | 14.1  | 9.5   |

**Girls**

| Total | 607 | 127 | 299 | 181 | 100.0 | 100.0 | 100.0 | 100.0 |
|-------|-----|-----|-----|-----|-------|-------|-------|-------|
| 1     | 72  | 12  | 35  | 25  | 11.9  | 9.4   | 11.7  | 13.8  |
| 2     | 78  | 21  | 32  | 25  | 12.9  | 16.5  | 10.7  | 13.8  |
| 3     | 82  | 18  | 41  | 23  | 13.5  | 14.2  | 13.7  | 12.7  |
| 4     | 256 | 61  | 125 | 70  | 42.1  | 48.0  | 41.8  | 38.7  |
| 5     | 57  | 13  | 28  | 16  | 9.4   | 10.2  | 9.4   | 8.8   |
| 6     | 30  | —   | 18  | 12  | 4.9   | —     | 6.0   | 6.6   |
| 7     | 32  | 2   | 20  | 10  | 5.3   | 1.6   | 7.6   | 5.5   |

### Companions' Judgment of Farm Children

Farm children also received fewer adverse judgments from companions than did nonfarm children. In the third grade, 15.1 percent of all farm children received negative scores on the companions' rating scale, as compared to 18.7 percent of the city group and nearly 20 percent of the rural nonfarm group. At the sixth grade level, 16.9 percent of the farm boys and girls and 17.2 percent of the village group received unfavorable scores as compared to nearly 30 percent of the city children (Table 5).

TABLE 5. THIRD AND SIXTH GRADE CHILDREN IN THE PUBLIC SCHOOLS OF MIAMI COUNTY WHO RECEIVED NEGATIVE RATINGS BY COMPANIONS, 1946, BY RESIDENCE AND SEX.

| Residence and Sex | Third Grade  |                      |          | Sixth Grade  |                      |          |
|-------------------|--------------|----------------------|----------|--------------|----------------------|----------|
|                   | Total Number | With Negative Scores |          | Total Number | With Negative Scores |          |
|                   |              | Number               | Per Cent |              | Number               | Per Cent |
| Total             | 654          | 118                  | 18.0     | 575          | 112                  | 19.5     |
| City              | 155          | 29                   | 18.7     | 130          | 36                   | 27.7     |
| Boys              | 81           | 24                   | 29.6     | 77           | 23                   | 29.9     |
| Girls             | 74           | 5                    | 6.8      | 53           | 13                   | 24.5     |
| Rural - Non-Farm  | 294          | 58                   | 19.7     | 279          | 48                   | 17.2     |
| Boys              | 111          | 36                   | 25.0     | 128          | 29                   | 22.7     |
| Girls             | 150          | 22                   | 14.7     | 151          | 19                   | 12.6     |
| Rural Farm        | 205          | 31                   | 15.1     | 166          | 28                   | 16.9     |
| Boys              | 109          | 25                   | 22.9     | 81           | 19                   | 23.5     |
| Girls             | 96           | 6                    | 6.3      | 85           | 9                    | 10.6     |

## THE PREVALENCE OF SUPERIOR ADJUSTMENT AND OF MALADJUSTMENT

The results presented up to this point have been concerned mainly with comparisons of farm and rural nonfarm children with respect to their mean adjustment scores. It has been demonstrated that the average level of mental health as measured by the California Test of Personality was significantly higher for farm children than for those living in the small city included in this study. It was also demonstrated that the average rural nonfarm or village child was better adjusted to his life situations than was the average small city child. At the same time it was shown that in the survey county average level of personality adjustment was not significantly different as between rural farm and rural nonfarm boys and girls.

### Deviations from Mean Scores

In the following pages of this report the problem of personality adjustment among rural children is approached from another angle. An attempt will be made to estimate for the Miami County children the prevalence of superior adjustment on the one hand and of maladjustment on the other. The mean scores analyzed in the preceding section of this report provide adequate estimates of the average level of personality adjustment among the several groups of third and sixth grade children. In each group there are children who deviate rather widely from the average. They vary both in the direction or superior adjustment and in the direction of inferior adjustment. The main concern here is with these deviant children rather than with the average child.

Some of the major questions for consideration are included in the following: What proportions of children show evidence of superior mental health or of superior personal and social adjustment? What proportions are maladjusted? What proportion is just average? How do these proportions differ among the three main residence groups of farm, village, and city children? How do they differ between boys and girls? How do these proportions compare with those found in the urbanized standard group on which norms have been based?

In estimating the prevalence of good adjustment and of poor adjustment among the subjects of this study, two major criteria were used. The first was a scale of total adjustment provided by the California Test of Personality. The



second was a composite index of personality adjustment obtained by combining the total adjustment scores from the standardized test with those obtained from teachers' ratings and companions' ratings.

### Estimates Based On the Standardized Test

The California Test of Personality provides one set of scores which supposedly measure self-adjustment and another set of scores which are designed to measure social adjustment. When added together for each child a third scale called **total adjustment** is obtained. These total adjustment scores ranged from a low around 50 to a high of 140 with an average of 104, for the children in the present study.

Those scores that deviate far above the mean signify superior adjustment or superior mental health. Those that deviate far below the mean indicate poor adjustment or maladjustment. Those that are found adjacent to the mean identify children of normal or average personality adjustment.

In order to achieve the purposes of this study it was necessary to determine definite limits on the scale of total adjustment which would differentiate between average and superior adjustment on the one hand and between average adjustment and maladjustment on the other. Unfortunately, there is no absolutely valid method available for doing this since adjustment and maladjustment, mental health and mental disorder are relative matters.

How high must a child's total adjustment score be in order to rate him a person of superior personality adjustment? How low must his score be to classify him as maladjusted? For purposes of this study the total range of scores was divided into 4 classes. Scores of 125 and over were taken as indicative of superior adjustment. Children who rated so high on the scale had scores which correspond to those in the upper 25 or 30 percent of the standard group. Children with scores of 95 and less were considered poorly adjusted, and those with less than 85, very poorly adjusted. A score of 85 corresponded to the percentile norm of around 20, which means that only around 20 percent of the standard group had scores as low or lower. A score of 95 corresponded roughly to the thirtieth percentile in the published table of norms.

**Superior Adjustment.**— Of the 1,229 children for whom total adjustment scores were available, 13.0 percent were classified as persons of superior adjustment on the basis of their high scores of 125 and over. This proportion of high ranking boys and girls being based on the total sample has a high degree of statistical reliability. It was, however, a proportion that was much lower than that expected on the basis of the norms established for the test which provided the basis for the rating.

In the present study, farm children compared favorably with those living in nonfarm homes, with respect to prevalence of superior adjustment. It was found that 13.7 percent of the boys and girls from farms were persons of superior adjustment as defined here. The comparable prevalence rate for village children was somewhat higher, 14.3 percent. This small difference between the farm and village groups does not, however, have any statistical significance.

Both rural farm and rural nonfarm pupils differed favorably from those in the city where only 9.5 percent were placed in the superior adjustment class. The difference between the farm and city group did not prove to be statistically significant. The difference between the village and city group was, however, above the 5 percent level of significance. That is, the difference was great enough that it could not be expected to occur by chance more than 5 times in 100 repeated samples (Table 6).

It may be concluded that in the spring of 1946 about 1 in every 8 third and sixth grade children in Miami County had achieved a level of adjustment comparable to the highest 25 percent of the standard group. The prevalence of superior adjustment was greater among the rural children than among the city children in the sample.

TABLE 6. COMPARISON OF PROPORTIONS OF FARM, VILLAGE, AND CITY CHILDREN WITH SCORES ABOVE AND BELOW CERTAIN LIMITS ON A TOTAL ADJUSTMENT SCALE

| A. Means and Proportions |               |            |              |              |              |
|--------------------------|---------------|------------|--------------|--------------|--------------|
| Residence                | No. in Sample | Mean Score | Per Cent     |              |              |
|                          |               |            | 125 and Over | Less Than 95 | Less Than 85 |
| Total                    | 1229          | 103.5      | 13.0         | 30.8         | 16.9         |
| City                     | 285           | 99.5       | 9.5          | 40.7         | 23.2         |
| Village                  | 573           | 104.5      | 14.3         | 29.0         | 14.8         |
| Farm                     | 371           | 104.9      | 13.7         | 25.8         | 15.1         |

  

| B. Group Comparisons |                    |      |      |                |      |      |                |      |      |
|----------------------|--------------------|------|------|----------------|------|------|----------------|------|------|
| Groups Compared      | Score 125 and Over |      |      | Score Under 95 |      |      | Score Under 85 |      |      |
|                      | Diff.              | S.E. | C.R. | Diff.          | S.E. | C.R. | Diff.          | S.E. | C.R. |
| Farm - City          | 4.2                | 2.5  | 1.7  | -14.9          | 3.6  | 4.1  | -8.1           | 3.1  | 2.6  |
| Farm - Village       | -0.6               | 2.5  | —    | -3.2           | 2.9  | 1.1  | 0.3            | 2.4  | —    |
| Village - City       | 4.8                | 2.3  | 2.1  | -11.7          | 3.5  | 3.3  | -8.4           | 2.9  | 2.9  |

**Inferior adjustment.**—Of all children in this study, 30.8 percent were classified as poorly adjusted. This included all those with scores of 94 and less on the total adjustment scale. These scores corresponded to those lying below the thirtieth percentile in the table of norms published with the test used in this study. A still lower level of adjustment was delineated by taking as very poorly adjusted all those children with test scores of 84 and less. It was found that 16.9 percent of all children fell into this category. (This was true of around 20.0 percent of the standard group.)

On the basis of these findings it seems safe to estimate that from 17 to 30 percent of all Miami County third and sixth grade children were maladjusted to greater or lesser degree according to this standardized personality test.

The prevalence of maladjustment as defined here was considerably greater among city children than among those living on farms or in villages. Of all the farm children studied, nearly 26 percent were maladjusted with total adjustment scores of 94 and less, and 15 percent were very poorly adjusted with scores of 84 and less. For the city children the comparable prevalence rates were 41 percent poorly adjusted and 23 percent very poorly adjusted. These farm-city differences were too large to be accounted for by chance. They probably signify real differences in the prevalence of maladjustment in the two residence groups.

With respect to prevalence of maladjustment, village children also differed favorably from the city children. No significant differences were found between farm and rural nonfarm boys and girls (Table 6).

### Estimates Based on Composite Adjustment Scores

In the preceding section of this report the total adjustment scores yielded by the California Test of Personality were used as criteria for estimating the prevalence of superior adjustment and of inferior adjustment among Miami County children. The second criterion to be used here is a composite index of personality adjustment. The components of the index include the total adjustment scores provided by the standardized test and two additional factors. These additional factors are teacher ratings of individual pupils and companions' ratings.

A relatively simple method was employed in combining the results of these three measures of adjustment. The range of total adjustment scores was divided into seven class intervals. These intervals were based on published percentile norms and corresponded roughly to the intervals into which teachers ranked their students. These intervals included a model class, three successively higher classes and three successively lower classes. The companions' rating scores were divided into comparable intervals so far as that was possible. Strictly comparable intervals of these scores were not available because they were so largely neutral or negative.

For each of these three component scales the modal interval was assigned a value of zero. Positive step deviation 1, 2, and 3 were then assigned as weights to each successive interval above the modal class, and negative step deviations 1, 2, and 3 were assigned as weights to each lower interval below the mode. The composite index was then obtained by adding together these unit deviations or weights for each child, taking account of the algebraic signs involved.

The method may be summarized as follows:

| Teacher's Ranking        |                 | Total Adjustment Test |                 | Companions' Ratings |                 |
|--------------------------|-----------------|-----------------------|-----------------|---------------------|-----------------|
| Verbal Description       | Assigned Weight | Score                 | Assigned Weight | Score               | Assigned Weight |
| Far above average        | 3               | 135 and over          | 3               |                     |                 |
| Well above average       | 2               | 129 - 134             | 2               |                     |                 |
| Noticeably above average | 1               | 122 - 128             | 1               | Positive            | 1               |
| Just average             | 0               | 97 - 121              | 0               | 0.0 - 0.7           | 0               |
| Noticeably below average | -1              | 85 - 96               | -1              | 0.8 - 1.9           | -1              |
| Well below average       | -2              | 70 - 84               | -2              | 2.0 - 2.9           | -2              |
| Far below average        | -3              | 69 and less           | -3              | 3.0 and over        | -3              |

In order to further clarify the method of obtaining composite adjustment scores for individual children, a concrete example may be cited. A child is ranked "far above average" by his teacher. This gives him three points as indicated in the table of weights above. He has a total adjustment score of 140 which rates him 3 more points. He further has a positive score from his companions which adds an additional point. His composite score is then  $3 + 3 + 1$  which equals 7. This is the highest possible score obtainable by this method. The lowest obtainable score is  $(-3) + (-3) + (-3)$  which equals -9.

In order to eliminate all negative scores, the number 10 was added to the index for each child. This provided a scale with values ranging from 1 to 17. The actual scores assigned to the children in this study ranged from 2 to 16 as shown in the accompanying table (Table 7).

The summation procedure which provided the composite index of personality adjustment gave results which, for each group of children, were different from those given by any single criterion alone. Cross tabulations of teachers' ranking, total adjustment scores, and companions' ratings showed that the amount of correlation among them was only moderate so that the composite score gave results different from those based on a single criterion.

Careful study of individual adjustment indexes in relation to all other relevant information available for particular children made it possible to draw lines of demarcation between children of average adjustment and those of superior adjustment, and to discriminate between average and inferior adjustment. Agreement was reached by the research staff that children with scores of 13 and over represent persons of superior adjustment, while those with scores of 7 or less are maladjusted and for the most part show evidences of poor mental health.

TABLE 7. COMPOSITE ADJUSTMENT INDEX FOR THIRD AND SIXTH GRADE CHILDREN

| Index | Number |      |         |      | Per Cent |       |         |       |
|-------|--------|------|---------|------|----------|-------|---------|-------|
|       | Total  | City | Village | Farm | Total    | City  | Village | Farm  |
| Total | 1225   | 285  | 569     | 371  | 100.0    | 100.0 | 100.0   | 100.0 |
| 16    | 7      | 3    | 1       | 3    | 0.6      | 1.1   | 0.2     | 0.8   |
| 15    | 26     | 4    | 17      | 5    | 2.1      | 1.4   | 3.0     | 1.3   |
| 14    | 41     | 6    | 17      | 18   | 3.3      | 2.1   | 3.0     | 4.9   |
| 13    | 78     | 17   | 40      | 21   | 6.1      | 6.0   | 7.0     | 5.7   |
| 12    | 113    | 23   | 49      | 41   | 9.2      | 8.1   | 8.6     | 11.1  |
| 11    | 158    | 33   | 81      | 44   | 12.9     | 11.6  | 14.2    | 11.9  |
| 10    | 257    | 59   | 106     | 92   | 21.1     | 20.6  | 18.6    | 21.7  |
| 9     | 178    | 49   | 75      | 54   | 14.5     | 17.1  | 13.2    | 14.6  |
| 8     | 136    | 41   | 62      | 33   | 11.1     | 14.3  | 10.9    | 8.9   |
| 7     | 94     | 17   | 49      | 28   | 7.7      | 6.0   | 8.6     | 7.5   |
| 6     | 54     | 13   | 28      | 13   | 4.4      | 4.6   | 4.9     | 3.5   |
| 5     | 41     | 4    | 28      | 9    | 3.3      | 1.4   | 4.9     | 2.4   |
| 4     | 27     | 10   | 10      | 7    | 2.2      | 3.5   | 1.8     | 1.9   |
| 3     | 12     | 5    | 5       | 2    | 1.0      | 1.8   | 0.9     | 0.5   |
| 2     | 3      | 1    | 1       | 1    | 0.2      | 0.4   | 0.2     | 0.3   |

Summary

|         |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|
| 13 - 16 | 152  | 30   | 75   | 47   | 12.4 | 10.6 | 13.2 | 12.7 |
| 8 - 12  | 842  | 205  | 373  | 264  | 68.8 | 71.7 | 65.5 | 71.2 |
| 2 - 7   | 231  | 50   | 121  | 60   | 18.8 | 17.7 | 21.3 | 16.1 |
| Mean    | 9.62 | 9.42 | 9.57 | 9.84 | —    | —    | —    | —    |

Further studies of individual boys and girls have indicated that an adjustment score of seven or less is much more than a mere statistical fact. It is highly probable that back of each such score is a history of frustration and adverse life experiences. Perhaps these low scores pick out candidates for future inmates of jails and mental hospitals, for clients of divorce courts and relief agencies, and persons living lives of unhappiness and futility.

On the other hand, an adjustment score of 13 and over is probably a strong indication that the person concerned has a good foundation for continuing mental health.

On the basis of the definitions established in connection with the composite index of personal and social adjustment, it was found that 12 percent of all children in the study were in the superior class with scores of 13 and above. Approximately 19 percent were poorly adjusted with scores of 7 and less. The remaining 72 percent were in the average or modal class with scores ranging from 8 to 12, inclusive.

The mean score was 9.62 for all children in the study. Bearing out previous findings, the mean score on this composite scale was significantly higher for farm boys and girls (9.84) than for those living in the city (9.42).

The proportion of children of superior adjustment according to the composite index was highest among village and among farm children and was lowest among those in the city. The differences were small, however, and were of no statistical significance (Table 7). Hence, it would appear on this basis that the prevalence of superior adjustment among elementary school children in Miami County is about the same among those living in farm, village, and city homes.

The proportion of children apparently maladjusted and showing evidences of poor mental health according to the composite index did not vary widely among the three residence groups. It was 21 percent among village boys and girls, 18 percent among city pupils and 16 percent among those from farms. The largest difference was between village and farm students. It was found, however, that this difference barely reached the 5 percent level of statistical significance.

## **SEX DIFFERENCES IN PERSONALITY ADJUSTMENT**

Some of the outstanding and conclusive findings of the present study relate to sex differences in personal and social adjustment. All evidence points to the conclusion that in Miami County the level of mental and social health is decidedly higher among girls than among boys. These differences favoring girls were found for all children in the study regardless of their place of residence and for each criterion used in evaluating adjustment status.

### **Composite Adjustment Scores for Boys and Girls**

For farm, village, and city children, girls averaged from about one to nearly two points higher than boys on the 17-point composite adjustment scale devised for this study. Farm boys had an average score of 9.26 but the average farm girl had a score of 10.44, a difference of 1.18 in their favor. Village girls rated 1.54 points higher on the average than village boys, and city girls were 1.95 points above the average for boys. Analysis proved these differences to be statistically significant, and not attributable to sampling errors.

Further study showed that the prevalence of superior adjustment was much greater among girls than among boys. On the other hand boys were much more frequently found in the category of very poorly adjusted persons. Those children who are extreme deviates on the composite adjustment index are considered very poorly or very well adjusted. Among the farm children it was found that nearly 17 percent of the girls had composite scores of 13 and over. This placed them in the category of exceedingly well adjusted individuals. In contrast, only around 9 percent of the farm boys ranked so high. In other words, the prevalence of superior adjustment was nearly twice as high for girls as for boys. Even more striking was the fact that only about 8 percent of all the farm girls' scores were low enough to place them in the category of very poorly adjusted persons as defined by the study. The corresponding proportion for boys was 24 percent, a rate three times that for females. These proportions refer to the children who had scores of 7 and less on the composite adjustment scale (Table 8).

The situation was similar for village and other rural nonfarm boys and girls. Nearly 19 percent of these girls fell into the category of very well adjusted persons and only 11.5 percent were very poorly adjusted. By contrast only 7 percent of the boys rated superior while nearly 32 percent showed up as very poorly adjusted. In this group of children the prevalence of poor personality adjustment was nearly three times as great for boys as for girls, while the prevalence of superior adjustment was nearly three times as great for girls as for boys (Table 8).

Even greater sex differences favoring the female group appeared among those comprising the city group. Here the prevalence rate for superior adjustment was four times higher for girls than for boys. About 18 percent of these city girls attained the high level of adjustment rated superior, but only 4.4 percent of the city boys made such a favorable showing. Among these city children, the prevalence rate for maladjustment was reversed for the sexes. The rate was a little more than four times greater for boys than for girls, being 26.6 for the one sex but only 6.3 for the other (Table 8).

TABLE 8. COMPOSITE ADJUSTMENT INDEX FOR THIRD AND SIXTH GRADE BOYS AND GIRLS

| Score | Number |       |                |       |            |       | Per Cent |       |                |       |            |       |
|-------|--------|-------|----------------|-------|------------|-------|----------|-------|----------------|-------|------------|-------|
|       | City   |       | Rural Non-Farm |       | Rural Farm |       | City     |       | Rural Non-Farm |       | Rural Farm |       |
|       | Boys   | Girls | Boys           | Girls | Boys       | Girls | Boys     | Girls | Boys           | Girls | Boys       | Girls |
| Total | 158    | 127   | 270            | 299   | 190        | 181   | 100.0    | 100.0 | 100.0          | 100.0 | 100.0      | 100.0 |
| 16    | —      | 3     | —              | 1     | 1          | 2     | —        | 2.4   | —              | 0.3   | 0.5        | 1.1   |
| 15    | —      | 4     | 5              | 12    | 1          | 1     | —        | 3.1   | 1.9            | 1.0   | 0.5        | 2.2   |
| 14    | 1      | 5     | 4              | 13    | 5          | 13    | 0.6      | 3.9   | 1.5            | 4.3   | 2.6        | 7.2   |
| 13    | 6      | 11    | 10             | 30    | 10         | 11    | 3.8      | 8.7   | 3.7            | 10.1  | 5.3        | 6.1   |
| 12    | 7      | 16    | 15             | 34    | 16         | 25    | 4.4      | 12.6  | 5.6            | 11.5  | 8.4        | 13.8  |
| 11    | 15     | 18    | 35             | 46    | 18         | 26    | 9.5      | 14.2  | 13.0           | 15.5  | 9.5        | 14.3  |
| 10    | 28     | 31    | 38             | 68    | 33         | 49    | 17.7     | 24.4  | 14.0           | 22.8  | 22.7       | 27.0  |
| 9     | 32     | 17    | 42             | 33    | 30         | 24    | 20.3     | 13.4  | 15.5           | 11.0  | 15.8       | 13.3  |
| 8     | 27     | 14    | 35             | 27    | 20         | 13    | 17.1     | 11.0  | 13.0           | 9.0   | 10.5       | 7.2   |
| 7     | 13     | 1     | 36             | 13    | 23         | 5     | 8.2      | 3.1   | 13.3           | 1.3   | 12.1       | 2.8   |
| 6     | 11     | 2     | 18             | 10    | 11         | 2     | 7.0      | 1.6   | 6.7            | 3.3   | 5.8        | 1.1   |
| 5     | 4      | —     | 19             | 9     | 5          | 4     | 2.5      | —     | 7.0            | 3.0   | 2.6        | 2.2   |
| 4     | 8      | 2     | 9              | 1     | 6          | 1     | 5.1      | 1.6   | 3.3            | 0.3   | 3.2        | 0.6   |
| 3     | 5      | —     | 4              | 1     | —          | 2     | 3.2      | —     | 1.5            | 0.3   | —          | 1.1   |
| 2     | 1      | —     | —              | 1     | —          | —     | 0.6      | —     | —              | 0.3   | 0.5        | —     |

  

| Summary Table |      |       |      |       |      |       |      |      |      |      |      |      |
|---------------|------|-------|------|-------|------|-------|------|------|------|------|------|------|
| 13-16         | 7    | 23    | 19   | 36    | 17   | 30    | 4.4  | 13.1 | 7.1  | 13.7 | 8.9  | 16.6 |
| 8-12          | 109  | 96    | 165  | 208   | 127  | 137   | 69.0 | 75.6 | 61.1 | 69.8 | 66.9 | 75.6 |
| 2-7           | 42   | 8     | 86   | 35    | 46   | 14    | 26.6 | 6.3  | 31.8 | 11.5 | 24.2 | 7.8  |
| Mean          | 8.55 | 10.50 | 8.76 | 10.30 | 9.26 | 10.41 | —    | —    | —    | —    | —    | —    |

### Total Adjustment Scores for Boys and Girls

The findings presented above were derived from a summation of the results of teacher rankings, companions' ratings, and self-ratings on a standardized personality test. The question was raised as to whether boys would also appear at a disadvantage judged in terms of the results of the standardized test alone. This was found definitely to be the case.

A study of the extreme deviants on the total adjustment scale yielded by the California Test of Personality provides one means of judging sex differences in personality adjustment. Children whose scores fell below 70 on this scale were almost certainly persons notably lacking in happiness and mental health. Yet among the farm children, 5.9 percent of the boys in the sample were found at this low level of adjustment. The same was true for only 1.8 percent of the girls. At this extremely low level of personality adjustment was nearly 8 percent of the village boys and close to 10 percent of the city boys, but only about 1 percent of the village girls and only 4 percent of the city girls (Table 9).

A somewhat higher average level on the total adjustment scale but still on the side of very poor adjustment are those scores of 84 and less. It was found that 22 percent of the farm boys, 22 percent of the village boys, and 30 percent of the city boys were in this category. The same was true of only 8 percent, 9 percent, and 14 percent respectively of the farm, village, and city girls (Table 9).

TABLE 9. TOTAL ADJUSTMENT OF THIRD AND SIXTH GRADE CHILDREN BY RESIDENCE AND SEX.

| Score        | Number |       |         |       |      |       | Per Cent |       |         |       |       |       |
|--------------|--------|-------|---------|-------|------|-------|----------|-------|---------|-------|-------|-------|
|              | City   |       | Village |       | Farm |       | City     |       | Village |       | Farm  |       |
|              | Boys   | Girls | Boys    | Girls | Boys | Girls | Boys     | Girls | Boys    | Girls | Boys  | Girls |
| Total        | 158    | 127   | 272     | 301   | 190  | 181   | 100.0    | 100.0 | 100.0   | 100.0 | 100.0 | 100.0 |
| Less than 60 | 2      | 1     | 9       | 1     | 2    | 1     | 1.3      | 0.8   | 3.3     | 0.3   | 1.1   | 0.6   |
| 60 - 64      | 6      | 2     | 1       | 1     | 2    | 1     | 3.8      | 1.6   | 1.5     | 0.3   | 1.1   | 0.6   |
| 65 - 69      | 7      | 2     | 8       | 1     | 7    | 1     | 4.4      | 1.6   | 2.9     | 0.3   | 3.7   | 0.6   |
| 70 - 74      | 9      | 4     | 9       | 3     | 13   | 1     | 5.7      | 3.1   | 3.3     | 1.0   | 6.8   | 0.6   |
| 75 - 79      | 14     | 2     | 11      | 11    | 9    | 7     | 8.9      | 1.6   | 4.0     | 3.7   | 4.7   | 3.9   |
| 80 - 84      | 10     | 7     | 18      | 9     | 9    | 3     | 6.3      | 5.5   | 6.6     | 3.0   | 4.7   | 1.7   |
| 85 - 89      | 16     | 10    | 21      | 16    | 9    | 6     | 10.0     | 7.9   | 7.7     | 5.3   | 4.7   | 3.3   |
| 90 - 94      | 17     | 7     | 22      | 22    | 13   | 12    | 10.7     | 5.5   | 8.1     | 7.3   | 6.8   | 6.6   |
| 95 - 99      | 12     | 10    | 25      | 24    | 18   | 18    | 7.6      | 7.9   | 9.2     | 8.0   | 9.5   | 9.9   |
| 100 - 104    | 13     | 14    | 25      | 20    | 15   | 15    | 8.2      | 11.0  | 9.2     | 6.6   | 7.9   | 8.3   |
| 105 - 109    | 8      | 8     | 31      | 28    | 21   | 16    | 5.1      | 6.3   | 11.4    | 9.3   | 11.1  | 8.8   |
| 110 - 114    | 19     | 13    | 20      | 28    | 22   | 24    | 12.0     | 10.2  | 7.4     | 9.8   | 11.6  | 13.2  |
| 115 - 119    | 9      | 17    | 26      | 42    | 12   | 24    | 5.7      | 13.3  | 9.6     | 11.0  | 6.3   | 13.2  |
| 120 - 124    | 8      | 11    | 18      | 38    | 21   | 18    | 5.1      | 8.7   | 6.6     | 12.6  | 11.1  | 9.9   |
| 125 - 129    | 4      | 10    | 12      | 25    | 11   | 19    | 2.6      | 7.9   | 4.4     | 8.3   | 5.8   | 10.5  |
| 130 - 134    | 4      | 6     | 12      | 23    | 5    | 14    | 2.6      | 4.7   | 4.4     | 7.6   | 2.6   | 7.7   |
| 135 and over | —      | 3     | 1       | 9     | 1    | 1     | —        | 2.4   | 0.4     | 3.0   | 0.5   | 0.6   |

A higher average level of adjustment is represented by total adjustment scores of 94 and less. It was found that 33.6 percent of the farm boys had scores in this category but only 17.9 percent of the girls rated that low. In the village sample, 37.4 percent of the boys but only 21.2 percent of the girls had scores of 94 or less. Similarly, the comparable percentages for the city group were 51.1 for boys and 27.6 for girls (Table 9).

Measured in terms of the standardized test, the prevalence of superior adjustment was much greater for girls than for boys. Very superior adjustment may be attributed to those individuals with total adjustment scores of 125 and over. Nearly 19 percent of all farm girls in the sample had scores as high as that and may be considered persons of exceptional personal and social adjustment. Only 8.9 percent of the farm boys ranked so high, a proportion less than one-half that for the opposite sex. The proportions for the two sexes were about the same among the village children, but an even greater sex difference appeared for the city group. Here only 5.2 percent of the city boys rose so high on the adjustment scale as to achieve scores of 125 and over, but 15.0 percent of the city girls rose to this very high level of adjustment (Table 9).

### Comparison of Mean Adjustment Scores

The California Test of Personality taken by nearly all of the children in this study provides measures of various components of personality. It will be recalled that these measures include 6 components of **self-adjustment** and an equal number of components of **social adjustment**. For the basic sample, sex differences were studied with respect to each of these components. It was

found that girls scored 3.7 points higher than boys in self-adjustment, and 4.3 points higher in social adjustment. These differences were greater than could be accounted for by chance. This evidently signifies real differences in the average level of adjustment of the sexes to life situations (Table 10).

Further study was undertaken to find in what components of personality girls excelled boys. Of the 12 components included in the test administered, girls on the average differed favorably and significantly from boys on 9. In the category of self-adjustment, girls were especially favored with a sense of personal worth, with freedom from withdrawing tendencies, with a sense of personal freedom, and with a sense of belonging to intimate groups. Sex difference in means for self-reliance was not great enough to be considered statistically significant. Also there was no significant sex difference in the average score for freedom from nervous tendencies. It would appear that boys and girls are about equally prone to nervous symptoms.

TABLE 10. COMPARISON OF MEAN ADJUSTMENT SCORES FOR THIRD AND SIXTH GRADE FARM BOYS AND GIRLS, MIAMI COUNTY PUBLIC SCHOOLS, 1946

| Test                 | Mean Score |       | Standard Deviation |       | Diff. (Girls - Boys) | Standard Error | Critical Ratio |
|----------------------|------------|-------|--------------------|-------|----------------------|----------------|----------------|
|                      | Boys       | Girls | Boys               | Girls |                      |                |                |
| Self Adjustment      | 46.91      | 50.61 | 10.45              | 9.60  | 3.70                 | 1.04           | 3.6            |
| Self-Reliance        | 7.35       | 7.65  | 1.79               | 1.76  | .30                  | .155           | 1.9            |
| Sen. Per. Worth      | 7.93       | 9.12  | 2.42               | 2.17  | 1.19                 | .239           | 5.0            |
| Sen. Per. Freedom    | 8.05       | 8.79  | 2.52               | 2.23  | .74                  | .247           | 3.0            |
| Sen. Belonging       | 9.76       | 10.34 | 2.03               | 1.76  | .58                  | .198           | 2.9            |
| Withdrawing Ten.     | 6.68       | 7.68  | 3.10               | 2.97  | 1.00                 | .315           | 3.2            |
| Nervous Symp.        | 7.14       | 7.03  | 2.66               | 2.85  | -.11                 | .287           | 0.4            |
| Social Adjustment    | 54.15      | 58.49 | 9.80               | 7.55  | 4.34                 | .91            | 4.8            |
| Social Standards     | 9.76       | 10.27 | 1.84               | 1.43  | .51                  | .173           | 2.9            |
| Social Skills        | 8.68       | 8.92  | 1.89               | 1.72  | .24                  | .190           | 1.3            |
| Anti-Soc. Tendencies | 8.69       | 9.85  | 2.45               | 1.88  | 1.16                 | .226           | 5.1            |
| Family Relations     | 9.15       | 9.77  | 2.74               | 2.15  | .62                  | .255           | 2.4            |
| School Relations     | 7.91       | 9.26  | 2.65               | 2.25  | 1.35                 | .255           | 5.3            |
| Community Relations  | 9.96       | 10.42 | 1.69               | 1.37  | .46                  | .162           | 2.8            |
| No. Children         | 191        | 179   | —                  | —     | —                    | —              | —              |

In the category of social adjustment, girls were particularly favored in having better school relations and greater freedom from anti-social tendencies. Girls also averaged higher in family relations, in community relations, and in social standards. They did not differ significantly from boys with respect to social skills (Table 10).

### Teachers' Rankings and Companions' Ratings

In the light of these findings there can be little doubt but that, in the survey county, girls find it easier to adjust to conditions of living than do boys. Evidence from the standardized personality test is borne out by teachers' rankings and companions' ratings. It was found that teachers ranked 19.5 percent of all farm boys at or next to the lowest class in the scale of teachers' ratings. Only 12.1 percent of the farm girls were ranked so low. On the other hand, teachers ranked 27.6 percent of all farm girls at or next to the top of the ranking scale but only 18.4 percent of the farm boys were placed so high (Table 4).

Further study of the ratings made by teachers showed that 28.9 percent of village boys were ranked in the two lowest classes of adjustment and only 14.0 percent were placed in the two highest classes. On the other hand, only 13.6 percent of the girls were placed in the two most unfavorable classes while 22.4 percent were placed in the two top groups.



In the city schools, teachers made even greater discrimination in favor of female students. Nearly 26 percent of all the girls were rated among the most favorable one-fifth of their respective classes by their teachers. The same was true of only 11.4 percent of all the city boys. On the other hand 19.0 percent of the boys were ranked among the least favorable one-fifth of their respective classes but only 1.6 percent of the girls were ranked so low (Table 4).

The students themselves tended to judge boys with less favor than girls. It was found that in the farm group 23.5 percent of all boys received negative ratings from their classmates. The same was true for only 10.6 percent of all farm girls. The situation was similar for village children. Here 22.7 percent of the boys but only 12.6 percent of the girls rated as maladjusted as judged by companions' ratings. City children also tended to discriminate in favor of girls. The discrimination was not so great, however, as was the case for rural children (Table 5).

### **Adjustment Does Differ Between Sexes**

The average level of personality adjustment as measured by this study is significantly higher for girls than for boys. At present there is no certain explanation as to why these sex differences exist, or whether they are to be interpreted as completely undesirable. The differences are not due to differences in mental ability. It was found that among rural children, boys and girls did not differ significantly in average level of intelligence as measured by a group test. The test used was the California Test of Mental Maturity.

Sex differences in personal and social adjustment may be due to one or more of several factors. Girls are generally taught to be more submissive and docile than boys. It may be that as a result they more readily accept and adjust to situations of various kinds. In spite of the notion that "this is a man's world" it may be that the school and family environments in which children grow up are so designed that they meet the social and emotional needs of girls better than those of boys.

It is interesting to note in this regard that in our society feminine influences are generally dominant in the lives of children both at home and at school. Mothers and female teachers may create a social and emotional climate that is more conducive to the personality development of girls than of boys. This is a hypothesis that requires research before final conclusions are reached.

### **PERSONALITY ADJUSTMENT AND SCHOOL RETARDATION**

On the basis of the findings presented in the preceding pages it was estimated that at least 1 in each 5 rural children in Miami County showed definite evidence of poor mental health at the time of the survey in 1946. This estimate may be applied to all boys and girls in the elementary school grades, although only those in the third and sixth grades were included in the sample which provided the data for this report.<sup>9</sup>

While the lowest one-fifth of these children was singled out for special study and for comparative purposes there is no doubt that many who rated higher in the adjustment scale had basic weak spots in their personalities which more intensive studies would reveal. The lowest one-fifth are believed to represent children whose basic social and emotional needs have been so thwarted and their attitudes so warped by frustrations and adverse experiences that they stand in special need of guidance services.

<sup>9</sup> One reason for selecting the third and the sixth grades for study was that they were considered most typical of the elementary school grades.

Determination of the causal factors which are associated with superior adjustment on the one hand, and with inferior adjustment on the other is a subject for further investigation. It is believed that the emotional distortions and deviant attitudes which appear as maladjustment to life situations arise out of frustrated needs.

Among these needs, two are generally considered fundamental by child guidance experts. The child's need for a continuing sense of personal security in his relationships with those responsible for his care is one of these. Lack of such a sense of security results in fear, anxiety, emotional tensions, and inner conflicts which in turn result in deviant attitudes and behavior.

A second major need of the child is that of a feeling of confidence in himself and in those about him. Such confidence comes from the achievement of success along some lines and from receiving recognition and praise for successful accomplishment. Frustration of this emotional need for a feeling of adequacy, self-esteem, and personal worth leads to a sickening sense of inferiority. This, combined with a blighting sense of insecurity and anxiety, it may be assumed, produces the maladjusted personality.

What are the frustrating factors in the lives of children in Miami County which lead to signs and symptoms of social and personal maladjustment? Studies of this question are now under way. In the meantime, one very significant finding from the data already available is very suggestive. Evidence indicates that inability on the part of the child to learn at the normal or expected rate in school is very closely associated with personality difficulties. Among the 940 rural children included in the present study, 181 or nearly 1 in each 5 were classified as very poorly adjusted. It was found that about one-third of these maladjusted children were age misfits in their school classes. That is, they were one year or more older than the average child in their respective classes.<sup>10</sup> That means that they had experienced a series of failures in school and had been forced to repeat one or more grades. An additional number of these poorly adjusted children were so far below par in their school work that their teachers reported that they were not passing their grades at the time the data for this study were collected near the end of the school year in the spring of 1946.

It is difficult to evaluate the extent to which lack of ability to get along well in academic work at school is a cause or an effect of emotional difficulties in children. That they are closely related will be shown in the following pages.

### **Prevalence of School Retardation**

In this study, a child was considered an age misfit in his class if he was 12 months or more older than the average child in his room at school. It was found that 12.2 percent of all children in the sample were in this category of retarded or overaged students. As would be expected, retardation was somewhat more prevalent at the sixth grade level than in the third grade, but no statistically significant differences were found among children from city, village, and farm homes (Table 11).

While the percentage of age misfits was similar among the three residence groups of children, the rate of overageness was twice as great among boys as among girls. Most striking was the fact that nearly 17 percent of all third and sixth grade boys were age misfits in their respective classes. The same was true of a little less than 8 percent of the girls. In other words, while about 1 in each 6 boys was a misfit, only about 1 in 13 girls was in the same category.

It is evident that, on the average, girls get along better in school subjects than do boys. This was found to be true regardless of place of residence. In the city schools included in the present study, retardation rates were about 4 or 5 times as high for boys as for girls. For rural nonfarm children the rates were about twice as great among boys. Only among sixth grade farm children did the sexes approach equality in this regard (Table 11).

<sup>10</sup> The same was true of 1 in 8 of all children studied.

TABLE 11. THIRD AND SIXTH GRADE CHILDREN IN THE PUBLIC SCHOOLS OF MIAMI COUNTY WHO WERE ONE YEAR OR MORE OLDER THAN THE AVERAGE AGE OF CHILDREN IN THEIR RESPECTIVE CLASSES BY RESIDENCE AND SEX, 1946

| Residence and Sex | Third Grade  |          |          | Sixth Grade  |          |          |
|-------------------|--------------|----------|----------|--------------|----------|----------|
|                   | Total Number | Overaged |          | Total Number | Overaged |          |
|                   |              | Number   | Per Cent |              | Number   | Per Cent |
| Total             | 654          | 75       | 11.3     | 575          | 76       | 13.2     |
| City              | 155          | 19       | 12.3     | 130          | 19       | 14.6     |
| Boys              | 81           | 16       | 19.8     | 77           | 16       | 20.8     |
| Girls             | 74           | 3        | 4.1      | 53           | 3        | 5.7      |
| Rural Non-Farm    | 294          | 35       | 11.6     | 279          | 37       | 13.3     |
| Boys              | 144          | 22       | 14.6     | 128          | 23       | 18.0     |
| Girls             | 150          | 13       | 8.7      | 151          | 14       | 9.3      |
| Rural Farm        | 205          | 21       | 10.2     | 166          | 20       | 12.0     |
| Boys              | 109          | 17       | 15.6     | 81           | 11       | 13.6     |
| Girls             | 96           | 4        | 4.2      | 85           | 9        | 10.6     |

### Mental Ability and School Retardation

It seems evident that lack of learning capacity is not the only cause for the failure of children in academic school subjects, and for the repetition of school grades. This was suggested by the fact that girls generally get along so much better in school than do boys. No one would contend that this sex difference in school achievement is due to any sex difference in native intelligence.

In order to get an evaluation of the mental ability of children included in the present study, the California Test of Mental Maturity<sup>11</sup> was administered along with the California Test of Personality. This is a group intelligence test which yields I.Q. values as do other tests of general ability. A tabulation of the I.Q.'s for the 106 age misfits among the rural children in this study showed that 42.3 percent of them were in the range of normal intelligence. In other words, about two-fifths had I.Q.'s of 90 and over. As a whole, these overaged boys and girls were, however, children of limited intelligence. Their average I.Q. was only 88.0 and only 13.0 percent had I.Q.'s of 100 and over (Table 12).

TABLE 12. INTELLIGENCE QUOTIENTS (I.Q.'s) FOR OVERAGE RURAL CHILDREN WITH INTELLIGENCE TEST SCORES, 1946

| I. Q.        | Number | Per Cent |
|--------------|--------|----------|
|              | 106    | 100.0    |
| Less than 70 | 4      | 3.8      |
| 70 - 74      | 6      | 5.7      |
| 75 - 79      | 17     | 16.1     |
| 80 - 84      | 13     | 12.3     |
| 85 - 89      | 21     | 19.7     |
| 90 - 94      | 22     | 20.7     |
| 95 - 99      | 9      | 8.5      |
| 100 - 104    | 5      | 4.7      |
| 105 - 109    | 7      | 6.6      |
| 110 - 114    | 2      | 1.9      |
| Mean I. Q.   | 88.0   | —        |

<sup>11</sup> Published by the California Test Bureau, 5916 Hollywood Blvd., Los Angeles 28, California.

## Personality Adjustment of Normal and Retarded Children

Children who fail in school and who become age misfits in their classes are generally persons of inferior personality adjustment. Those children who are slow to learn academic subjects and who become involved in school failure or a series of failures provide a fertile recruiting ground for juvenile delinquency as one aspect of their deep-seated personality difficulties. Deviant personal and social reactions displayed by the age misfits were evident from the results of the several means used for evaluating personality adjustment.

**The composite adjustment index.**—Most telling evidence of the serious personal and social adjustment problems of retarded children was provided by the composite adjustment index used in this study. On this criterion, 51.3 percent of all the overaged children in the rural school showed up as very poorly adjusted persons. The other 48.6 percent were just average. Not a single one appeared as a person of superior adjustment. In contrast were those children who were progressing normally through the school grades. Of these, only about 15 percent were in the category of the very poorly adjusted. Another 15 percent were persons of superior adjustment as defined by this study, while 70 percent were of average adjustment (Table 13).

**TABLE 13. TOTAL ADJUSTMENT RATINGS FOR THIRD AND SIXTH GRADE RURAL CHILDREN WHO WERE ONE YEAR OR MORE OLDER THAN THE AVERAGE CHILD IN THEIR RESPECTIVE CLASSES IN SCHOOL, 1946**

| Score                | Number |            |         | Per Cent |            |         |
|----------------------|--------|------------|---------|----------|------------|---------|
|                      | Total  | Normal Age | Overage | Total    | Normal Age | Overage |
| Total                | 940    | 827        | 113     | 100.0    | 100.0      | 100.0   |
| 2                    | 2      | 1          | 1       | 0.2      | 0.1        | 0.9     |
| 3                    | 7      | 2          | 5       | 0.7      | 0.2        | 4.4     |
| Poor Adjustment      | 17     | 12         | 5       | 1.8      | 1.5        | 4.4     |
| 4                    | 37     | 20         | 17      | 3.9      | 2.4        | 15.0    |
| 5                    | 41     | 32         | 9       | 4.4      | 3.9        | 8.0     |
| 6                    | 77     | 56         | 21      | 8.2      | 6.8        | 18.6    |
| 7                    | 95     | 77         | 18      | 10.1     | 9.3        | 15.9    |
| 8                    | 129    | 121        | 8       | 13.7     | 14.6       | 7.1     |
| Average Adjustment   | 198    | 180        | 18      | 21.1     | 21.8       | 15.9    |
| 9                    | 125    | 118        | 7       | 13.3     | 14.3       | 6.2     |
| 10                   | 90     | 86         | 4       | 9.6      | 10.4       | 3.5     |
| 11                   | 61     | 61         | —       | 6.5      | 7.4        | —       |
| 12                   | 35     | 35         | —       | 3.7      | 4.2        | —       |
| Superior Adjustment  | 22     | 22         | —       | 2.3      | 2.7        | —       |
| 13                   | 4      | 4          | —       | 0.4      | 0.5        | —       |
| 14                   | —      | —          | —       | —        | —          | —       |
| 15                   | —      | —          | —       | —        | —          | —       |
| 16                   | —      | —          | —       | —        | —          | —       |
| Mean Score           | 9.68   | 9.98       | 7.47    | —        | —          | —       |
| <b>Summary Table</b> |        |            |         |          |            |         |
|                      | 940    | 827        | 113     | 100.0    | 100.0      | 100.0   |
| Poor Adjustment      | 181    | 128        | 53      | 19.3     | 14.9       | 51.3    |
| Average Adjustment   | 637    | 582        | 55      | 67.8     | 70.4       | 48.6    |
| Superior Adjustment  | 122    | 122        | —       | 12.9     | 14.8       | —       |

**Self-adjustment and social adjustment.**— On the scale of self-adjustment provided by the California Test of Personality the overaged children in the rural schools were nearly 5 points lower than were those of normal age for their grade in school. The detailed tests showed that they were particularly lacking in a sense of personal worth and were especially prone to withdrawing tendencies, and to neurotic symptoms. They were also lacking in a normal sense of belonging, and in a sense of personal freedom. Only in self-reliance did they approach closely the average for the younger children in their classes (Table 14).

TABLE 14. SELF-ADJUSTMENT SCORES FOR THIRD AND SIXTH GRADE RURAL CHILDREN AND FOR THOSE ONE YEAR OR MORE OLDER THAN THE AVERAGE CHILD IN THEIR RESPECTIVE CLASSES IN SCHOOL, 1946

| Score   | Number |            |         | Per Cent |            |         |
|---------|--------|------------|---------|----------|------------|---------|
|         | Total  | Normal Age | Overage | Total    | Normal Age | Overage |
| Total   | 944    | 831        | 113     | 100.0    | 100.0      | 100.0   |
| 15 - 19 | 2      | 2          | —       | 0.2      | 0.2        | —       |
| 20 - 24 | 11     | 8          | 3       | 1.2      | 1.0        | 2.7     |
| 25 - 29 | 32     | 25         | 7       | 3.4      | 3.0        | 6.2     |
| 30 - 34 | 58     | 46         | 12      | 6.1      | 5.5        | 10.6    |
| 35 - 39 | 101    | 86         | 15      | 10.7     | 10.3       | 13.4    |
| 40 - 44 | 118    | 101        | 17      | 12.5     | 12.2       | 15.0    |
| 45 - 49 | 164    | 138        | 26      | 17.4     | 16.6       | 23.0    |
| 50 - 54 | 172    | 155        | 17      | 18.2     | 18.7       | 15.0    |
| 55 - 59 | 153    | 144        | 9       | 16.2     | 17.3       | 8.0     |
| 60 - 64 | 106    | 100        | 6       | 11.2     | 12.0       | 5.3     |
| 65 - 69 | 27     | 26         | 1       | 2.9      | 3.1        | 0.9     |
| Mean    | 48.24  | 49.21      | 44.45   | —        | —          | —       |

On the scale of social adjustment yielded by the standardized personality test, retarded children were below par. They approached equality with their younger classmates in social skills and in their community relations, but showed up at a disadvantage in their school relations and in their family relations. Also, they were below par in their knowledge and practice of social standards and in anti-social tendencies (Table 15).

TABLE 15. SOCIAL ADJUSTMENT SCORES FOR THIRD AND SIXTH GRADE RURAL CHILDREN AND FOR THOSE ONE YEAR OR MORE OLDER THAN THE AVERAGE CHILD IN THEIR RESPECTIVE CLASSES IN SCHOOL, 1946

| Score   | Number |            |         | Per Cent |            |         |
|---------|--------|------------|---------|----------|------------|---------|
|         | Total  | Normal Age | Overage | Total    | Normal Age | Overage |
| Total   | 944    | 881        | 113     | 100.0    | 100.0      | 100.0   |
| 15 - 19 | 1      | 1          | —       | 0.1      | 0.1        | —       |
| 20 - 24 | 3      | 3          | —       | 0.3      | 0.4        | —       |
| 25 - 29 | 7      | 6          | 1       | 0.7      | 0.7        | 0.9     |
| 30 - 34 | 10     | 7          | 3       | 1.1      | 0.8        | 2.7     |
| 35 - 39 | 31     | 21         | 10      | 3.3      | 2.5        | 8.8     |
| 40 - 44 | 63     | 56         | 7       | 6.7      | 6.7        | 6.2     |
| 45 - 49 | 87     | 72         | 15      | 9.2      | 8.7        | 13.3    |
| 50 - 54 | 141    | 124        | 17      | 14.9     | 14.9       | 15.0    |
| 55 - 59 | 170    | 153        | 17      | 18.0     | 18.4       | 15.0    |
| 60 - 64 | 229    | 199        | 30      | 24.3     | 24.0       | 26.6    |
| 65 - 69 | 193    | 182        | 11      | 20.4     | 22.0       | 9.7     |
| 70 - 72 | 9      | 7          | 2       | 1.0      | 0.8        | 1.8     |
| Mean    | 56.45  | 57.33      | 58.32   | —        | —          | —       |

**Teachers' and companions' judgments.**— Retarded children do not rate high in personality adjustment according to their teachers' judgment. More than one-half of all children in the rural and village schools of Miami County who were classed as age misfits were ranked among the lowest one-fifth of their classes by teachers. The teachers were asked to rank their charges on the basis of their judgment of each child as a happy, wholesome, normal, well-adjusted person, rather than on the basis of his academic achievement. Their judgments were probably influenced, however, by the fact that teachers' evaluations of students are generally made on the basis of their mental growth and school achievements rather than in terms of their personal and social growth and development.

While teachers, following survey instructions, placed about 10 percent of all children in the most favorable mental health rank, they did not place any overaged student in that most favorable group. In fact, only 9 out of 112 of these were ranked above average (Table 16).

TABLE 16. TEACHERS' RANKING OF THIRD AND SIXTH GRADE RURAL CHILDREN AND FOR THOSE ONE YEAR OR MORE OLDER THAN THE AVERAGE CHILD IN THEIR RESPECTIVE CLASSES IN SCHOOL, 1946

| Rank  | Number |            |         | Per Cent |            |         |
|-------|--------|------------|---------|----------|------------|---------|
|       | Total  | Normal Age | Overage | Total    | Normal Age | Overage |
| Total | 940    | 828        | 112     | 100.0    | 100.0      | 100.0   |
| 1     | 89     | 89         | —       | 9.5      | 10.7       | —       |
| 2     | 101    | 99         | 2       | 10.7     | 12.0       | 1.8     |
| 3     | 108    | 101        | 7       | 11.5     | 12.2       | 6.2     |
| 4     | 362    | 334        | 28      | 38.5     | 40.3       | 25.0    |
| 5     | 106    | 89         | 17      | 11.3     | 10.7       | 15.2    |
| 6     | 88     | 72         | 16      | 9.4      | 8.7        | 11.3    |
| 7     | 86     | 44         | 42      | 9.1      | 5.3        | 37.5    |
|       | 3.94   | 3.76       | 5.46    | —        | —          | —       |

Children themselves also tended to reject retarded boys and girls in their classes. About 30 percent of the overaged pupils received negative ratings from companions, and only 1 overaged child received a favorable score on the basis of companions' ratings.

### Retardation and Juvenile Delinquency

A special study of juvenile delinquents before the County Court in 1944 was made as a part of the Miami County Health and Human Development Project. One outstanding result of study was the finding that juvenile offenders were generally children who did not get along well in school. Only 63 percent of those brought before the Court were in school at all, although they were all less than 18 years old and practically none had finished high school. The 37 percent who were not in school had dropped out on age and working certificates, or on other grounds. Those still in school were in many cases outstandingly retarded in their school work and were finding little or no real satisfactions in their school experience.

Of 206 juvenile offenders in Court in 1944, only 1 had finished high school. Their median age was around 16 years but the median child had completed only seven grades in school. The offenders who were far behind in their school progress were particularly prone to sex offenses, truancy, running away, and to charges of being "ungovernable" in their conduct.

This study suggests that retardation in school may be a potent determinant of personality maladjustment in children. In some instances, school failure may be a basic cause of emotional tensions in the life of the child. Such failure is apt to be destructive of the child's confidence in himself and may make him feel like a failure in the eyes of his teachers, parents, and more successful classmates. In other instances, basic maladjustments in the child's personality may be aggravated and intensified by a series of school failures. There are no doubt other instances where failure to learn academic subjects is an outright result of emotional disturbances and deviant attitudes which arise from other sources.

This study emphasizes a vital need for school programs better fitted to the emotional and social needs of children. More emphasis should be placed on the individual school child and on his problems. This study shows that many children stand in grave need of help in working out their conflicts, and in meeting the threats to their sense of security and self-esteem. Such help from schools and other sources should serve to gradually raise the level of mental health.

## SUMMARY

This report deals with the mental health status of 1,229 third and sixth grade school children. A study of these children was made as part of a larger mental hygiene research program in Miami County, Ohio. The children who are the subjects of this report were about equally divided between boys and girls. Of the total, 371 lived on farms, 573 lived in the small towns and villages of Miami County or in open country nonfarm homes, and 285 lived in Piqua, a city of around 16,000 population.

The field work for this study was done in the Spring of 1946. All third and sixth grade children in the public schools of Miami County were given a battery of tests and ratings to obtain results for evaluating their mental health, defined in terms of personality adjustment. The testing program included a group intelligence test in addition to a standardized personality test. Further data were provided by classroom teachers who ranked their students into seven categories on the basis of their appraisal of the personality adjustment of each child. The teachers also supplied certain background data for each child concerning his age, sex, place of residence, and school record. Additional data were provided by the children themselves, by rating their companions.

These data were collected for all children in the third and sixth grades of all the school in Miami County. The major omission from this report is the data for children in the city of Troy. This omission was necessary due to lack of strict comparability in the methods used in gathering the information.

Miami County was chosen as the location of the larger study because of its representativeness as a high class rural and semi-rural county and because of local interest and enthusiasm for the study.

A statistical analysis of the data pertaining to the personality adjustment of school children was undertaken to throw light on certain vital problems of interest to rural people and their leaders. These problems may be stated in the form of hypotheses or assumptions to be tested by research techniques. These hypotheses are three in number:

- 1. That in a high ranking agricultural county in Ohio, living on a farm and in a farm home is more favorable to good personality adjustment in children than is living in a small city, or in other nonfarm homes.**

Doubts have been expressed in regard to this assumption as a result of Selective Service findings of greater prevalence of personality disorders among farm men than among those in other occupations.

- 2. That in the survey county, boys and girls are about equally well adjusted to their various life situations.**

It seemed important to test this assumption in view of the present mental hygiene ideal that the same standards of personality adjustment should be held for boys and girls.

- 3. That retardation in school makes for personality maladjustment in children.**

It is widely recognized that school programs are not always adapted to the individual needs of children. The expectation of failure on the part of some children has become a part of the school system. Yet failure, or a series of failures is rather certain to be frustrating experiences in the life of the child and a hindrance to his mental health.



## CONCLUSIONS

The results of the present study of elementary school children in Miami County are fairly conclusive with respect to the above assumptions. In the survey county the average farm home provides a relatively favorable environment for the personality adjustment of children.

At the time of the present survey, the average level of personality adjustment was significantly higher among farm children than among those living in city homes in the one city included in the study. Between rural farm children and those from rural nonfarm homes, no significant differences were found. Both groups differed favorably from the city boys and girls in the study.

Farm children differed favorably from city children in a number of ways. They were more self-reliant, they had a greater sense of personal worth, a greater sense of belonging, greater freedom from withdrawing tendencies and nervous symptoms. Also they showed evidence of greater social skills and rated superior in school and community relations. They failed to show any superiority in their sense of personal freedom and in their adjustments in the family. Neither did they show superior adjustment in social standards nor in freedom from anti-social tendencies.

While the farm children in this study differed favorably in most respects from city children, also in the study they tended to rate below the norms established by the California Test of Personality. These farm children did, however, rise above the established norms in self-reliance and in confidence in themselves.

Teachers tended to rank farm children above nonfarm children as "normal, healthy, wholesome persons." Farm children also received relatively fewer adverse judgments from companions than did nonfarm children.

The proportion of children of superior personality adjustment was found to be highest among farm and village children and lowest among city children. The category of superior personality adjustment established by the study included about 13 percent of the rural children and around 11 percent of the city group.

The proportion of children classified as very poorly adjusted was not significantly different among farm, village and city children. About 1 in each 5 or 6 were in this category.

The average level of personality adjustment as measured by this study is significantly higher for girls than for boys. Among farm children the proportion classified as very poorly adjusted was about three times as great among boys as among girls, while the proportion considered persons of superior adjustment was nearly twice as great for girls as for boys. The situation was similar among village and even more extreme among city children. No fully satisfactory explanation was found for the sex difference in personality adjustment in childhood.

Results of this study point to the conclusion that failure, or a series of failures in school are major hazards to the mental health or personality adjustment of children.

One in every eight children were one year or more retarded in their school work and were a year or more older than the average child in their respective classes at school. Boys were more retarded than girls, the relative proportions being 1 in 6 boys and 1 in 13 girls.

A little more than one-half (51.3 percent) of all the overaged children fell within the ranks of the very poorly adjusted as defined by this study. The remainder were only average, none appearing as persons of superior personality adjustment.

The results of this study which show that children retarded in school are poorly adjusted were verified in part by a study of juvenile delinquents in the same county. That study showed that juvenile offenders are generally children who fail to get along well in school.

Finally, it may be pointed out that while farm children compare favorably with nonfarm children in personality adjustment, about 1 in every 12 farm girls and nearly 1 in every 4 farm boys in Miami County present evidences of poor mental health of varying degrees of seriousness. This emphasized the need for improved programs of child guidance, training, and education in homes and in schools. Such programs are needed to remedy personality maladjustments in their incipency and to prevent personality disorders by never letting them happen.

In line with the approach to human health described in this bulletin, the Miami County Mental Hygiene Association has recently made many pertinent suggestions. Some of these may be stated. School curriculums should be better fitted to the varying needs and abilities of children. Special treatment and educational programs are needed for the mentally deficient and slow-learning students in the public schools. Skilled consultation and guidance services are needed in all schools. Teachers should be carefully selected on the basis of their personal qualifications for the skilled job of teaching, and they should receive training not only in subject matter fields but also in the understanding of children and in methods of dealing effectively with personality adjustment problems of children.

Programs of family life education and services are needed to provide better emotional lives for children. Finally, rural and semi-rural communities stand in special need of child and family guidance services to help meet some basic human needs.