

University of Montana

## ScholarWorks at University of Montana

---

Graduate Student Theses, Dissertations, &  
Professional Papers

Graduate School

---

1980

### Achievement scores and intelligence scores in fourth grade children from single-parent homes as compared to those in two-parent homes

Joyce M. Brant  
*The University of Montana*

Follow this and additional works at: <https://scholarworks.umt.edu/etd>

**Let us know how access to this document benefits you.**

---

#### Recommended Citation

Brant, Joyce M., "Achievement scores and intelligence scores in fourth grade children from single-parent homes as compared to those in two-parent homes" (1980). *Graduate Student Theses, Dissertations, & Professional Papers*. 5931.

<https://scholarworks.umt.edu/etd/5931>

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact [scholarworks@mso.umt.edu](mailto:scholarworks@mso.umt.edu).

COPYRIGHT ACT OF 1976

THIS IS AN UNPUBLISHED MANUSCRIPT IN WHICH COPYRIGHT SUBSISTS. ANY FURTHER REPRINTING OF ITS CONTENTS MUST BE APPROVED BY THE AUTHOR.

MANSFIELD LIBRARY  
UNIVERSITY OF MONTANA  
DATE: 1980



ACHIEVEMENT SCORES AND INTELLIGENCE SCORES  
IN FOURTH GRADE CHILDREN FROM SINGLE-PARENT HOMES  
AS COMPARED TO THOSE IN TWO-PARENT HOMES


By

Joyce M. Brant

B.A. University of Montana, 1966

Presented in partial fulfillment of the requirements  
for the degree of  
Master of Education  
UNIVERSITY OF MONTANA  
1980

Approved by:

  
Chairman, Board of Examiners

  
Dean, Graduate School

Date July 17, 1980

UMI Number: EP36732

All rights reserved

**INFORMATION TO ALL USERS**

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI EP36732

Published by ProQuest LLC (2013). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code



ProQuest LLC.  
789 East Eisenhower Parkway  
P.O. Box 1346  
Ann Arbor, MI 48106 - 1346

## TABLE OF CONTENTS

	Page
Chapter	
1. INTRODUCTION . . . . .	1
Statement of Problem . . . . .	3
Delimitation of the Study . . . . .	4
Limitations of the Study . . . . .	5
Significance of the Problem . . . . .	6
Definition of Terms . . . . .	7
Chapter	
2. REVIEW OF THE LITERATURE . . . . .	9
3. RESEARCH METHODOLOGY . . . . .	20
Procedure . . . . .	21
4. ANALYSIS OF THE DATA . . . . .	23
Summary . . . . .	23
Conclusions . . . . .	23
Implications . . . . .	24
ENDNOTES . . . . .	25
BIBLIOGRAPHY . . . . .	29
APPENDIXES	
A. Percentile Scores . . . . .	32
B. Chi-Square Test . . . . .	34

## Chapter 1

### INTRODUCTION

Psychologists tell us the home has tremendous importance in the growth, personality development, and character of children.<sup>1</sup> This fact has relevance in this setting as the author considers what effect divorce and/or loss of a parent in any way has on intelligence and achievement on children from such an environment.

If the home culturally, socially, and economically prepares the children for general society, the broken home may be compared to a yard with a broken fence which provides less protection for those inside, so they are more likely to fall out or go astray.<sup>2</sup>

The results of two decades of changing social attitudes toward marriage and the loosening of stringent divorce laws throughout the country emerged with the publication of a new study by the United States Census Bureau and the National Center for Health Statistics. This report indicates that in recent years the divorce rate had more than doubled and the number of children involved in divorce had more than tripled. Census demographers have estimated that, if current levels of divorce persist, nearly four out of every ten marriages will end in divorce.<sup>3</sup>

According to the statistics compiled by the Census Bureau, the divorce rate in 1940 was 2/1000 persons. After World War II it climbed to an all time high of 4.3/1000 persons and then down in 1960 to 2.2/1000 persons. It began to soar during the last 15-20 years. In 1978 there

were 1.1 million divorces and 2.2 million marriages--making the divorce rate 5.1/1000 persons.<sup>4</sup>

The same report found that the number of children involved in divorce rose from 361,000 in 1956 to 1,117,100 in 1978. The number of one-parent families maintained by women increased by 13%--or more than double between 1960-1978. The proportion of children living with only one parent climbed from nine percent of all children in 1960 to 19% in 1978.

The depreciating attitude toward family life in our society has intensified in the past few years. It is common to find an increasing number of children in the elementary classroom from broken homes. According to Joyce Maynard, ten million school-age children live in single-parent homes.<sup>5</sup>

It would seem that a study of children from broken homes/single parent deserves more than passing attention. A quotation from an article in the May 1980 Reader's Digest expresses the problem.

"On the surface, they don't seem any different from kids whose families are intact. They wear the same tattered jeans, smile with the same metallic braces....but divorce, though no longer a stigma, is nonetheless a wrenching series of crises that sets these children apart."<sup>6</sup>

This study includes a literature review of several studies that have been completed as well as the findings of this author. This research used test results of twenty-seven (27) fourth graders from single-parent homes and compared those results with test results of twenty-seven (27) fourth graders chosen randomly from two-parent homes in the same school system. In this study, two-parent families include



children whose present parents may or may not be their biological parents. The research sought to determine whether or not there was a significant difference in achievement and intelligence test scores between the two groups of students.

Children's behavior resulting from a change in family structure can range from normal adjustment to severe mental aberration. Children from two-parent homes may also exhibit this range of behavior. It is apparent that the time has arrived to examine possible areas of special needs of children of single-parent families that may be unique. Because of the unlimited scope of the possible avenues of study, this study has been limited to only a composite of scores relating to achievement and intelligence.

#### Statement of Problem

One possible method of approaching the study of special needs that children from single-parent homes may have would be to make an objective study of how much of a problem students from single-parent homes have in reaching acceptable levels of achievement. Therefore, this study will attempt to determine possible variance between achievement and intelligence of children in single-parent and those from two-parent homes.

It is possible that adverse home conditions are related to adverse school achievement. Social factors, including unsettled homes and social status of children may have influence upon the teaching and learning process in school. Marybeth Shinn completed a review

of research findings which show significant differences and others which show little or no difference between the compared groups.<sup>7</sup>

The purpose of this study is to determine if there is a significant difference in intelligence or achievement between the single-parent children and the children living in a home with two parents.

The null hypothesis that was tested is that there is no significant difference in the level of achievement or of intelligence of children from single-parent homes compared to children from two-parent homes.

#### Delimitation of the Study

The restricted sample selection, and the number of students used in this study may prohibit one from making generalizations. Generalizations developed may be applicable only to the sample involved in this study.

All of the children from single-parent homes in the fourth grade classes at the Libby Public Schools are included in this study. After determining the number of students (twenty-seven) that comprised that group, a like number of children from two-parent homes were selected randomly from the remaining fourth grade population.

The study was restricted by the following delimitation: the population for the project will be restricted to the fourth grade students living within the Libby School District, Libby, Montana.

### Limitations of the Study

This study was limited by the fact that there were some assumptions made which could have changed during the period of study.

Because the Libby Public Schools routinely administers the Otis-Lennon Test of Mental Ability and the Iowa Test of Basic Skills to all fourth graders, this study was limited to data from these two instruments. These instruments are further discussed in the section entitled, "Measuring Instruments."

The study was further limited because of the status of children who have been identified as being from a single-parent or a two-parent home may change from the period of identification to the period of data collection.

Because the population in the Libby schools is mobile, due partly, to seasonal work, some of the selected subjects for the study would transfer out of the Libby School District between the period of being selected and the final data collection period. This data was identified and reported as such in the final analysis.

In generalizing the results, there is little known about some variables which may be significant. Attention should be directed to the combining of divorce, desertion could be different from a planned mutually agreed upon divorce or separation. The cause and length of the absence and the availability of support from relatives or the community can affect the single-parent's coping strategies and the way the child will be dealt with. Nothing is known of the "extended" family or other adults who may have influence on the child. No assumptions were made

about the role of the missing parent.

It was not possible in this study to gauge the psychological stage of development through which each student was passing at the time of data collection.

The parents may have been divorced and remarried many times. There is nothing to indicate the emotional condition of children in either the single-parent or two-parent home.

### Significance of the Problem

The introduction suggests that divorce is a problem of national concern. Albert J. Solnit, Director of the Yale Child Study Center in New Haven, Connecticut says, "Divorce is one of the most serious and complex mental health crises facing children of the 1980's."<sup>8</sup> This study was concerned with children from single-parent homes. The major cause of children having to live with one parent is divorce.

That the incidence of divorce in Lincoln County is great enough to warrant further research is supported by the Lincoln County Clerk of Court. Records show that in 1978 there were 163 marriages and 124 divorces in the county with an estimated population of 20,000. In Lincoln County the rate would be 6.2 divorces per 1000 population as opposed to an overall national rate of 5.1 per 1000 population.<sup>9</sup> The higher percentage of divorces in Lincoln County may indicate that there would be a higher percentage of single-parent homes there than the national average.

With the increasing occurrence of divorce within our society and with numerous authors questioning the previously unquestioned positive effects of the "traditional" two-parent family, it is paramount to study further the effects that living in a single-parent home may have on student achievement.

As our society goes through this period of social evolution in terms of interpersonal relationships, family organization, and demands upon existing institutions, it is especially appropriate to search for effects upon student achievement.

In concluding this section dealing with the significance of the problem, a quotation from Smidchen and Thompson's summary of significance is worthy:

As key persons in the lives of children, teachers must work to be aware . . . of things having an impact on the academic achievement of their students. The current study seeks to illuminate what seems to be an area which has drawn little attention, and to suggest to professional educators a possible need to modify programs to meet the special needs of specific categories of students.<sup>10</sup>

#### Definition of Terms

Broken Homes. For the purpose of this study, a broken home is defined as a home impaired in its normal biological set-up as a result of death, divorce, separation, or desertion of either parent.

Single-parent children. This term refers to children who have the experience of living a period of their lives in a family environment lacking either a mother figure or a father figure.

Traditional or two-parent home. For purposes of this study,

this term refers to a home where children live together with a mother figure and a father figure. These may or may not be their biological parents.

## Chapter 2

### REVIEW OF THE LITERATURE

An observation made by Robert H. Berge in 1950 appears to be true in 1980. He says that the sources of maladjustment of school age children are varied and numerous. One source, the broken home, has not yet been thoroughly studied in accordance with up-to-date standards of research.<sup>11</sup> However, many researchers and educators are presently concerning themselves with this subject.

One pertinent source dealing directly with this subject is a paper entitled, "Effects of Family Organization within Socioeconomic Strata upon Basic Skill Achievement." This research examined the effect of family organization upon student achievement by using a sample of over four hundred fifth grade students from a mid-western city with 100,000 population. In their findings, it was observed that children from two-parent families tend to record higher achievement scores than students from one-parent families.<sup>12</sup>

A summary report from Marriage and Divorce Today indicates that children in the U.S. today who are living with a separated or a divorced mother are likely to be living in or near poverty. Separated and divorced women in the survey were more likely to describe themselves as more tense or depressed than were married women.<sup>13</sup>

In a study by Lamberts and Bullock, it was reported that there was a divergence between the overt-covert attitudes of children from one and two parent family structures. The incidence of one-parent

families is great enough to warrant further research into this matter.<sup>14</sup>

Strenner and Katzenmeyer report a strong relationship between the Intermediate Level Self-Observation Scales and teacher rated reading achievement. They reported that self-concept contributed significantly to the prediction of achievement after controlling for intelligence. In summary, they reported that assessments of self-concept were correlated positively with IQ and scholastic achievement, and that they represent a new domain of useful information in explaining achievement differences.<sup>15</sup>

According to Hetherington,<sup>16</sup> the households of divorced mothers and fathers are generally more disorganized than those of intact families. Children of single-parents are more likely to have irregular meals and bed times, with irregular diet patterns. Divorced parents make fewer maturity demands of their children. They are demanding less self-sufficient, autonomous and mature behavior of their children and are less likely to solicit the child's opinion and are less likely to use reasoning and explanation than are parents of intact families. This was reported to have a more adverse effect on boys than on girls.

Divorced parents are less consistent with their children, and this lack of consistency is reflected in the lack of control they have over their children. Stresses in family functioning following a divorce are reflected in changes in life style, emotional distress, and changes in attitudes towards self which may be mediating factors in changes in the child's behavior and self-concept.

Liane Leighton, working in the Port Washington Schools, said



that there is an evolutionary pattern in a family's divorce, with the child often being affected differently at different stages. One of the main points is that in dealing with the specific problems of a child undergoing stress, it is important to be empathetic to the situation. Teachers must be aware that at certain stages of the divorce process, a parent is going through such difficulties that he/she can't parent, thereby causing additional problems for the child.<sup>17</sup>

The U.S. Census Bureau reports that divorce has doubled in the last twenty years. Janine M. Bernard states that twenty percent of children in the elementary schools will have divorced parents in the 1980's.<sup>18</sup> Hetherington, Cox, and Cox considered the social, emotional, and cognitive development of children following divorce. In their study they suggest that fifty percent of the children born in the 1970's will spend some time living in a single-parent home.<sup>19</sup> Since we have no reason to expect the incidence of divorce to decrease, we must consider that problem to affect the behavior of children.

Since parents are often angry and hostile during a divorce, it is common for children to exhibit hostility. This anger complicates matters, particularly in the schools. Depression, guilt, and fear are common emotional reactions of children at the threat of a divorce. Bernard reports that research efforts thus far have not offered a comprehensive, therapeutic program to help children avoid the pitfalls as they adjust to their new life situations.<sup>20</sup> While aspects of divorce and children need to be studied further, it is important to begin to use the information available now in attempts to help children.

In spite of the fact that divorce may be a positive solution to destructive family functioning and the eventual outcome may be a constructive one, for many family members the transition period following separation and divorce is stressful. Hetherington, Cox, and Cox found that the pattern of differences between one-parent home children and children from homes with marital conflict changes markedly over the course of two years following divorce. They note in this study as in their 1975 study, that boys appear to be more vulnerable to both the effects of marital discord and of divorce, than are girls.<sup>21</sup>

Children from divorced homes displayed more aggressiveness, lack of self-control, and were more easily distractible and demanding of help and attention both in school and at home. Therefore, Hetherington deems it critical that support systems be developed to relieve some of the stresses confronted by children who are experiencing the emotional trauma of a divorce situation.<sup>22</sup>

Eloise Bentley has concluded that a teacher needs to properly prepare to counter the feeling that it is an abnormal situation to face growing up with a parent absent, because this feeling may create an emotional attitude which works against the normal learning process. Bentley further feels that a teacher's effectiveness in dealings with children of broken homes can be increased by taking advantage of the perceptions and experiences of those who have analyzed and worked with this problem. Therefore, she has presented an annotated bibliography of materials that provide an introduction to the problem, and insights into ways the young child may rise above his/her situation.<sup>23</sup>

Of all the problems families have, the one which looms the largest is divorce in the thesis of Goldenberg and McNair in their discussion of the disruptive school. They point out that in many instances it is the father who is the missing parent, and that the father is an important instructor of social behavior for his children. They present evidence to show that a large proportion of motherless and fatherless children socially are poorly adjusted. The emotional stability of children from single-parent homes is also in danger. They are less likely to conform to rules, accept blame, feel guilt, base judgments on moral principles, or verbally accept moral values.<sup>24</sup>

Goldenberg and McNair further support Hetherington's findings that fatherless boys compensate less in the absence of a father than girls do. Therefore, boys are more adversely affected by father absence.<sup>25</sup>

Goldenberg and McNair present the thesis that while circumstances may prevent parents from being able to fulfill their responsibilities in contributing toward stability and security for their children, this cannot be true in the case of educators. They feel that if school personnel are aware of the amount of disruption and instability in the lives of a great number of the children for whom they are responsible, it should be reflected in their classroom management or school organizational patterns.<sup>26</sup>

An interesting theory is presented by Janet and Larry Hunt. They suggest that father absence has negative consequences for identity and achievement orientation for white children more than for black

children, and especially for children in the middle socioeconomic class. In what appears to be a continuing study, they consider the possibility that perhaps father absence may make the girls stronger, but that it may result in the girl's loss of skills for interacting with males in general, and that it may lead to either extremely shy and withdrawn or inappropriately assertive behaviors relative to male peers.<sup>27</sup>

They suggest that although father absence may have a dampening effect on the achievement of male children, it may work to free female children for stronger attachment to personal achievement goals. Thus, when both sex-role and achievement effects are considered, father absence may have mixed implications for the development of female children. The context to which the achievement advantage of these girls registered in the context of the school can be translated into the realization of personal success goals in adulthood is questionable, however.<sup>28</sup>

One conflicting and very interesting theory is proposed by David Steward and Valentino Louisa. Intelligence and academic achievement scores of 180 emotionally disturbed adolescents were related to the personality profiles via a canonical variate analysis. Results of the analysis indicated that the emotionally disturbed adolescent who is low in ego strength, tense, guilt prone, sensitive, shy, and submissive tended to appear and test more intelligent and to demonstrate higher academic achievement. While this is not supported in other research done by the author, it would seem worthy of consideration in this study of children who are emotionally disturbed by family reorganization.<sup>29</sup>

Janice M. Hammond who is a staff consultant for the Wayne County, Michigan Schools, reports on her findings in a study of 165 children in grades 3-6. One-half of these children were from single-parent families, and one-half were from two-parent families. They were of a lower-middle to middle-middle class community. Hammond found no significant difference in self-concept, math, or reading achievement, immaturity, withdrawal, or peer relation in children of either group. The teachers, however, reported that boys of divorced families rated significantly higher in school behavioral problems. Girls in the study showed no significant differences on any of these measures.<sup>30</sup>

John Ryor, President of the National Educational Association, writes concerning the study done by a panel studying the reasons for a consistent decline in Scholastic Aptitude Test scores during the past fourteen years.<sup>31</sup> Ryor suggests, "The panel points to changes during this period in the role of the family in the educational process, noting particularly the increase in the number of children living in homes in which two parents are not present. Although lacking definitive evidence, the panel concludes that the effect of these changes is negative."<sup>32</sup>

Lessing, Zagorin, and Nelson report on a study entitled, "WISC Subtest and IQ Score Correlates of Father Absence." While this study suggests that most studies have been done with college students as subjects, they discuss a study done by Maxwell with 292 British child psychiatric clinic patients, ages eight to thirteen. In this study, when compared with father present children, the children who had

experienced father absence after age five were more likely to score below the median on the comprehension, vocabulary, picture completion, picture arrangement, and coding subtests. In Maxwell's findings, no significant association was found between father absence and scores of the arithmetic subtest.<sup>33</sup>

In the study mentioned above, the subjects consisted of 311 boys and 122 girls who were given the WISC during the period 1960-1966. Age levels were 9-15 years. Subjects had experienced a minimum of two years of father absence. The findings in regard to the effects of father absence suggest that there are both general and specific deficits. The general deficit was found among children of working-class background who scored lower verbal, performance, and full scale IQ scores than father present children of the same social class. The major specific effect of father absence was in relation to performance IQ. Father-absent children, regardless of sex or social class, earned a lower mean performance IQ than father-present children.<sup>34</sup>

"For The Sake of The Children, A Review of The Psychological Effects of Divorce," is an article suggesting that although divorce is a widespread phenomenon today, there continued to be a higher incidence of divorce among the poor than among the middle class, and social policy and programs must be responsive to these needs.<sup>35</sup>

Because it is in the education of all professionals who relate to the child of divorce and his family in a developmental model that we can begin to impact for social change, let us consider that there are different developmental phenomenon, which are discussed in this article.

Development of various intellectual, academic and physical skills and the motivation to master them is a dominant concern to the 8-10 year old. A healthy self-concept is important as are peer relationships. Divorce can interfere with this, as it may become difficult for the child to focus his attention outside of the family while school and peer relationships as would normally occur. The 8-10 year old will be very much aware of the long-term significance and meaning of divorce. They frequently express anger toward one of the parent figures. Loyalty conflicts--which parent to love and side with--take on realistic significance for this age child. Wishes for reconciliation are widespread, with the children evidencing more clear-cut fears about the current unstable situation and also about the future.<sup>36</sup>

Although recent research has stressed the importance of fathering to children in intact families, the effects of father absence on children's cognitive development are still being contested with some researchers concluding that the father's absence from the home makes no difference to the child's school achievement. Other investigations have challenged this conclusion and the article, "Father Absence and Cognitive Development," by Marybeth Shinn reviews research relating father absence to children's cognitive performance as assessed by IQ and achievement tests and school achievement. Seventy-five percent of these studies have shown detrimental effects of father absence on children's intellectual performance.<sup>37</sup>

The psychological meaning that father absence has for the child depends in part on the quality of the family relationships prior to the

father's departure.

Another major methodological difficulty is the frequent lack of control over socioeconomic status. There is abundant evidence that single-parent families are, on the whole, less prosperous than two-parent families.<sup>38</sup>

Shinn's article contains summaries of research findings which show significant differences and findings which show little or no difference in cognitive development with father absence. In summary, the evidence by this research shows that rearing in father absent families or in families in which fathers have little supportive interaction with their children is often associated with poor performance on cognitive tests.<sup>39</sup>

An article by John Santrock entitled "Relation of Type and Onset of Father Absence to Cognitive Development" discusses further the relationship of father absence to cognitive development. He states that on many occasions researchers have demonstrated that the father absent child performs more poorly than the father present child on intellectual and achievement measures. The Sutton-Smith (1968) study evaluated the effect of the age at which father absence occurred on the ACT scores of entering college freshmen. The most intellectual deficits resulted when the father left in the early or middle (0-4 or 5-9) period. In a similar study, Deutsch and Brown (1964) found that father-absent first and fifth graders scored significantly lower than their father



present counterparts on the Lorge-Thorndike Intelligence Test. Santrock reports on a study by Blanchard and Biller (1971) which showed that early father absence had the most detrimental effect on third grade achievement test scores and high father presence had the most positive effect.<sup>40</sup> The findings of Santrock's study strengthens the contention that cognitive changes are affected strongly by father absence.

An article in the May, 1980 Reader's Digest entitled "Children of Divorce" is condensed from Newsweek, 2-11-80. It reports that there are currently more than eleven million children under the age of 18 whose parents are divorced, and suggests that there will be one million more children each year who will suffer through the dissolution of their families. It is, according to this article, estimated that 45% of all children born in any given year will live with only one of their parents at some time before they are eighteen.<sup>41</sup>

Institutions and professionals are trying to address the problems of divorce in new ways. Schools are beginning to determine the special needs of children from divorced families. Courts are turning more and more to outside professionals for help in deciding custody and visitation cases. Counseling programs are becoming more available with counseling being improved with more knowledge and study of the problems of divorced parents and children of divorce. For better or worse, divorce continues to split families at an alarming rate. Though parents, children and professionals are struggling to cope, divorce and its aftermath can be a labyrinth of confusion and conflict--some of which may never be resolved.<sup>42</sup>

## Chapter 3

### RESEARCH METHODOLOGY

#### Sample

The population of the sample was the students in the fourth grade who attended Libby Public Schools in Libby, Montana during 1979-80. There are four schools and nine classrooms of fourth graders. The total population in the fourth grade was 214 students.

The researcher used all the children in the fourth grade who had been identified as coming from single-parent homes as one group. The control group consisted of the same number of students. They were randomly selected by numbering the students and then selecting the desired number (27) by a drawing.

#### Measuring Instruments

The intelligence quotient was measured by the Otis-Lennon Test of Mental Ability. The stated purpose of this test as given by the authors in their manual for administration is that of the prediction of academic success.<sup>43</sup> Evaluators of the test state in Buros' Seventh Mental Measurements Yearbook that the standardization sample was chosen to represent the country's educational system with controls built in for school size, family income, geographical location, etc. They suggest that substantial evidence is provided to indicate that the Otis-Lennon is reliable. There is a high correlation reported between the

Otis-Lennon and the Iowa Tests of Basic Skills composite score.<sup>44</sup>

The data for information on achievement was collected from the Iowa Test of Basic Skills. The manual for administering the test states that the main purpose of the test is to enable teachers and school officials to become quickly and dependably acquainted with accomplishments and abilities of each pupil.<sup>45</sup>

Evaluative reviews in the Eighth Mental Measurements Yearbook indicate that the ITBS is one of the most carefully constructed achievement tests available, and that it is a satisfactory instrument for obtaining information on the status of pupil development in the basic skill areas.<sup>46</sup>

#### Procedure

All teachers were required to update enrollment cards during the first few weeks of school. They identified those students who lived in a single-parent home as of October 1, 1979. While the status of the student may have changed, this criteria for selection of children in the experimental group was used.

After removing the names of those students from the enrollment lists of fourth graders, the researcher numbered the remaining students and then by randomly drawing numbers selected the same number (27) of children from two-parent homes. Their status may have also changed before the conclusion of the study, but the sample remained as selected.

In January, 1980, the Iowa Test of Basic Skills and the Otis Lennon Test of Mental Ability were given to all fourth graders. When

the test scores were computed, the scores of those students selected to be in the study were sent to the researcher. The scores were reported in percentile form. The ITBS scores were not reported in raw score form by the computer service, so they were not available for use. The manual for the Otis-Lennon test suggests converting the DIQ to percentile rank with a DIQ of 100 being equal to the fiftieth percentile.<sup>47</sup>

The non-parametric statistical test used to determine whether there was significance at the .05 level was the chi square test. This was necessary because the units of the percentile rank score system were not equal.

## Chapter 4

### ANALYSIS OF THE DATA

#### Summary

The author found that there was no significant difference between scores of children from single-parent homes when compared to children from two-parent homes. (The  $\chi^2$  on the ITBS was 1.657 and on the Otis-Lennon it was 1.225. With a sample number of fifty-three students, the  $\chi^2$  would have to be 40 + to be significant at the .05 level.

#### Conclusions

Because there was no significant difference in the composite scores, there was no reason to study individual test results, or to differentiate between sex of students in the sample.

The language disabilities teacher who works in two of the four Libby Public Elementary Schools reported that only one of the eighteen students in her program comes from a single-parent home. The elementary guidance counselor, who works with forty-one children who are referred to him from all four of the schools, reports that thirty-nine percent, or sixteen, of the children come from single-parent families. His referrals are for academic, emotional, and behavioral problems. While he reported it very difficult to divide the problems exactly in the categories, he suggests that a closer look might be made of behavior and emotional problems of children from single-parent homes.

Implications

This author suggests that this study would indicate that children from single-parent homes may have other problems that may or may not affect academic achievement. A future study should be considered with special attention being paid to emotional problems and teacher ratings of behavior, as well as some study of self-concept of children. People interested in further research are referred to an excellent book by R.B. Burns entitled, "The Self-Concept: Theory, Measurement, Development and Behaviour."

## ENDNOTES

- 1  
Dr. Lee Salk, What Every Child Would Like Parents to Know About Divorce, (New York: Warner Books, 1978), p.9.
- 2  
Edward R. Mattix, "A Study of the Relationships Between The Broken Home and the School" (Master's Thesis, Montana State University, 1958), p.3.
- 3  
Missouliau, "Census Shows More Kids Losing Parents to Divorce." July 2, 1979, p.1.
- 4  
Ibid.
- 5  
Joyce Marnard and Geraldine Carro, "Do Fathers Make Good Mothers?" Ladies Home Journal, March, 1979, pp.99-101.
- 6  
Condensed from Newsweek. "Children of Divorce," Reader's Digest, May, 1980, p.130.
- 7  
Marybeth Shinn, "Father Absence and Children's Cognitive Development." Psychological Bulletin, 1978, Vol. 85, No. 2., pp. 295-324.
- 8  
Reader's Digest, loc. cit.
- 9  
Missouliau, loc. cit.
- 10  
Uldid Smidchens and Eugene Thompson, "Effects of Family Organization Within Socioeconomic Strata Upon Basic Skill Achievement." (Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, Marcy, 1978. ERIC Document ED 156 931, 1978.
- 11  
Robert H. Berge, "A Study of Children from Broken Homes in the Elementary School" (Master's Thesis, Montana State University, 1950), p.10.

- 12  
Uldid Smidchens and Eugene Thompson, loc. cit.
- 13  
Dr. Nicholas Zill, "Disaster in Black and White," Marriage and Divorce Today, May 22, 1978, p.2.
- 14  
M. Bullock Lamberts and others, "Family Structure and Rejection of Teacher Authority," (Paper presented at the Ohio Valley Sociological Meetings, Cleveland, April, 1971). ERIC Document ED 072 136, 1971.
- 15  
A. Jackson Sterner and William G. Katzermeier, "Self-Concept, Ability, and Achievement in a Sample of Sixth Grade Students," Journal of Educational Research, March, 1976, pp.270-273.
- 16  
Hetherington and others, "Beyond Father Absence: Conceptualizations of Effects of Divorce," (Paper presented at the Biennial Meeting of the Society for Research and Child Development, Denver, April, 1975.
- 17  
Liane Leighton, "Educating Teachers to the Realities of Divorce." Marriage and Divorce Today. March 19, 1979, p.3.
- 18  
Janine M. Bernard, "Divorce and Young Children: Relationship in Transition." Elementary School Guidance and Counseling, 12 : 188-197, February, 1978.
- 19  
E.M. Hetherington, Cox and Cox, "Family Interaction and the Social, Emotional, and Cognitive Development of Children Following Divorce," (Paper presented at the Symposium on the Family: Setting Priorities, Washington, D.C., May, 1978), ERIC Document ED 156 328, 1978.
- 20  
Janine M. Bernard, loc. cit.
- 21  
E.M. Hetherington, Cox and Cox, loc.cit.
- 22  
Ibid.
- 23  
Eloise Bentley, "Children and Broken Homes: Sources for the Teacher." 1975, ERIC Document 128 735.



- 24  
Ronald Goldenberg and Bruce McNair, "The Disruptive School," Contemporary Education, 49: 179-81, Spring, 1978.
- 25  
Ibid.
- 26  
Ibid.
- 27  
Larry Hunt and Janet Hunt, "Race, Father Identification, and Achievement Orientation," Youth and Society, 9:1113-120. September, 1977.
- 28  
Janet Hunt and Larry Hunt, "Race, Daughter and Father Loss: Does Absence Make the Girl Grow Stronger?" Social Problems, October, 1977, pp. 90-101.
- 29  
David Stewart and Valentino Louisa, "Intelligence, Academic Achievement, and Personality: A Canonical Variate Analysis," Psychology in School, 13: 468-70, October, 1976.
- 30  
Janice M. Hammond, "A Comparison of Elementary Children from Divorced and Intact Families," Phi Delta Kappan, November, 1979, p. 219.
- 31  
John Ryork, "Declining SAT Scores," Today's Education, October, 1978, p.6.
- 32  
Ibid.
- 33  
Elise E. Lessing, Susan W. Zagorin, and Dorothy Nelson, "WISC Subtest and IQ Score Correlates of Father Absence," The Journal of Genetic Psychology, 1970, 117: 181-195.
- 34  
Ibid.
- 35  
Phyllis R. Magrab, "For the Sake of the Children: A Review of the Psychological Effects of Divorce," Journal of Divorce, Spring, 1978, p.233-245.
- 36  
Ibid.

37  
Shirm, loc. cit.

38  
Ibid.

39  
Ibid.

40  
John W. Santrock, "Relation of Type and Onset of Father Absence to Cognitive Development," Child Development, 1972, 43:455-469.

41  
Reader's Digest, loc. cit.

42  
Ibid.

43  
A.S. Otis and R.T. Lennon, Manual for Administration: Otis-Lennon Mental Ability Test. Harcourt, Brace and World, Inc. New York 1967, p.4.

44  
Oscar Krisen Buros, ed., The 7th Mental Measurements Yearbook, Highland Park, New Jersey: The Gryphon Press, 1972, pp.690-693.

45  
E.F. Lindquist and A.N. Hieronymus, Manual for Administrators, Supervisors, and Counselors: Iowa Tests of Basic Skills. Houghton Mifflin Company, Boston, 1964. p.3.

46  
Oscar Krisen Buros, ed., The Eighth Mental Measurements Yearbook, Highland Park, New Jersey: The Gryphon Press, 1978, pp.53-58.

47  
A.S. Otis and R.T. Lennon, Op. cit., p.15.

## BIBLIOGRAPHY

Periodicals

- Bernard, Janine M. "Divorce and Young Children: Relationship in Transition." Elementary School Guidance and Counseling. 12 : 188-197, February, 1978.
- Goldenberg, Ronald, and Bruce McNair. "The Disruptive School." Contemporary Education. 49 : 179-181, Spring, 1978.
- Janice M. Hammond. "A Comparison of Elementary Children From Divorced and Intact Families." Phi Delta Kappan. November, 1979. p.219.
- Hunt, Janet, and Larry Hunt. "Race, Daughter and Father Loss : Does Absence Make the Girl Grow Stronger?" Social Problems, October, 1977, pp.90-101.
- Hunt, Larry, and Janet Hunt. "Race, Father Identification, and Achievement Orientation." Youth and Society, 9 :113-120, September, 1977.
- Leighton, Liane. "Educating Teachers to the Realities of Divorce." Marriage and Divorce Today, p.3, March 19, 1979.
- Lessing, Elise E., Susan W. Zagorin, and Dorothy Nelson. "WISC Subtest and IQ Score Correlates of Father Absence," The Journal of Genetic Psychology, 1970. 117 : 181-195.
- Magrab, Phyllis R., "For the Sake of the Children: A Review of the Psychological Effects of Divorce," Journal of Divorce, Spring, 1978. p.233-245.
- Maynard, Joyce, and Geraldine Carro. "Do Fathers Make Good Mothers?" Ladies Home Journal, pp.98-101, March 1979.
- Reader's Digest, The, (condensation from Newsweek, February 11, 1980.) "Children of Divorce," The Reader's Digest, May, 1980, p. 130-134.
- Ryor, John. "Declining SAT Scores," Today's Education, October, 1978. p.6.
- Santrock, John W. "Relation of Type and Onset of Father Absence to Cognitive Development," Child Development, 1972, 43:455-469.

- Shinn, Marybeth, "Father Absence and Children's Cognitive Development," Psychological Bulletin, 1978, Vol. 85, No. 2. 295-324.
- Stermer, A. Jackson, and William G. Katzenmeyer. "Self-Concept, Ability, and Achievement in a Sample of Sixth Grade Students." Journal of Educational Research. March, 1976. pp. 270-273.
- Steward, David, and Valentino Louisa. "Intelligence, Academic Achievement and Personality: A Canonical Variate Analysis." Psychology in School, October, 1976, 13 : 468-470.
- Zill, Dr. Nicholas. "Disaster in Black and White." Marriage and Divorce Today, May 22, 1978, p.2.

### Books

- Buros, Oscar Krisen, ed., The Eighth Mental Measurements Yearbook. The Gryphon Press, Highland Park, New Jersey, 1978, pp. 53-58.
- Buros, Oscar Kirsen, ed., The Seventh Mental Measurements Yearbook, The Gryphon Press, Highland Park, New Jersey, 1972.
- Despert, J. Louise, M.D. Children of Divorce, Garden City, New York: Dolphin Books, Doubleday and Company, Inc., 1962.
- Lindquise, E.F., and A.N. Hieronymus, Manual for Administrators, Supervisors, and Counselors: Iowa Tests of Basic Skills, Houghton Mifflin Company, Boston, 1964.
- Otis, A.S., and R.T. Lemmon, Manual for Administration: Otis-Lemmon Mental Ability Test. Harcourt, Brace and World, Inc., New York, 1967. p.4.
- Salk, Dr. Lee. What Every Child Would Like Parents to Know About Divorce. New York, Warner Books, 1978.
- Wigeweno, H.S., and Arne Claire, Divorce and the Children. Glendale, California, Regal Books Division, G/L Publications.

### Newspapers

- Missoulian, Missoula, Montana, July 2, 1979.

Unpublished Sources

- Berge, Robert H., "A Study of Children From Broken Homes in The Elementary School." Master's Thesis, Montana State University, Missoula, 1950.
- Mattix, Edward R., "A Study of the Relationships Between The Broken Home and the School" Master's Thesis, Montana State University, 1958.

ERIC Documents

- Bentley, Eloise. Children and Broken Homes: Sources for the Teacher. ERIC Document 128 735, 1975.
- Hetherington, E.M., Cox and Cox. Family Interaction and the Social, Emotional, and Cognitive Development of Children Following Divorce. Paper presented at the Symposium of the Family, Washington, D.C., ERIC Document ED 156 328, May, 1978.
- Hetherington and others. Beyond Father Absence: Conceptualization of Effects of Divorce. Paper presented at the Biennial Meeting of the Society for Research and Child Development, Denver, ERIC Document ED 113 015, 1975.
- Lamberts, M. Bullock and others. Family Structure and Rejection of Teacher Authority. Paper presented at the Ohio Valley Sociological Meetings, Cleveland, ERIC Document ED 072 136, 1971.
- Smidchens, Uldis and Eugene Thompson. Effects of Family Disorganization Within Socioeconomic Strata Upon Basic Skill Achievement. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, ERIC Document ED 156 931, March, 1978.

PERCENTILE SCORES

	<u>Two-Parent</u>		<u>Single-Parent</u>	
	ITBS	OTIS-LENNON	ITBS	OTIS-LENNON
1.	66	48	88	65
2.	53	40	61	83
3.	40	40	82	33
4.	71	69	94	57
5.	82	67	63	52
6.	97	95	63	52
7.	63	83	58	62
8.	50	52	29	50
9.	63	45	93	14
10.	63	73	50	67
11.	32	38	68	87
12.	34	55	91	25
13.	40	48	80	87
14.	80	81	37	65
15.	95	97	50	57
16.	23	50	78	69
17.	86	93	32	90
18.	86	90	58	95
19.	95	90	42	79
20.	68	33	82	90
21.	66	48	42	55
22.	78	86	50	19

## PERCENTILE SCORES (cont'd)

<u>Two-Parent</u>			<u>Single-Parent</u>		
	ITBS	OTIS-LENNON	ITBS	OTIS-LENNON	
23.	73	48	50	96	
24.	68	81	26	65	
25.	58	52	86	63	
26.	82	94	78	86	
27.	98	89			

CHI-SQUARE TEST

Non-Parametric tests are frequently spoken of as distribution free tests; independent of some characteristics of the population distribution.

The  $\chi^2$  test is a median test used to determine whether the observed frequencies of + or - signs depart significantly from expectation under the null hypothesis.

$$\chi^2 = \frac{N (AD-BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

Otis-Lennon

	+	-
one-parent	A 17	B 10
two-parent	C 20	D 6

1.225

$$\frac{53 (102 - 200)^2}{(27) (26) (37) (16)} = \frac{509012}{415584} = 1.225$$

ITBS

	+	-
one-parent	A 16	B 10
two-parent	C 21	D 6

1.657

$$\frac{53 (210 - 96)^2}{(27) (26) (37) (16)} = \frac{688788}{415584} = 1.657$$