

1-1-1979

## Birth order Bingo: F1, M2, L3

Timothy Lee Tennyson

*Eastern Illinois University*

This research is a product of the graduate program in [Educational Psychology and Guidance](#) at Eastern Illinois University. [Find out more](#) about the program.

---

### Recommended Citation

Tennyson, Timothy Lee, "Birth order Bingo: F1, M2, L3" (1979). *Masters Theses*. 238.  
<http://thekeep.eiu.edu/theses/238>

This Thesis is brought to you for free and open access by the Student Theses & Publications at The Keep. It has been accepted for inclusion in Masters Theses by an authorized administrator of The Keep. For more information, please contact [tabruns@eiu.edu](mailto:tabruns@eiu.edu).

LB  
1861  
.C57x  
E36  
1979  
T3  
copy 2

Tennyson, Timothy Lee.

PAPER CERTIFICATE #2

TO: Graduate Degree Candidates who have written formal theses.

SUBJECT: Permission to reproduce theses.

The University Library is receiving a number of requests from other institutions asking permission to reproduce dissertations for inclusion in their library holdings. Although no copyright laws are involved, we feel that professional courtesy demands that permission be obtained from the author before we allow theses to be copied.

Please sign one of the following statements:

Booth Library of Eastern Illinois University has my permission to lend my thesis to a reputable college or university for the purpose of copying it for inclusion in that institution's library or research holdings.

5-14-79  
Date

Timothy L. Terryson  
Author

I respectfully request Booth Library of Eastern Illinois University not allow my thesis be reproduced because \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Author

pdm

REACH 61

B  
61

BIRTH ORDER BINGO: F1, M2, L3

---

(TITLE)

BY

Timothy Lee Tennyson  
B.S.-Southern Illinois University, 1974  
M.A.-Eastern Illinois University, 1976

**THESIS**

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF

Specialist In Education

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY  
CHARLESTON, ILLINOIS

1979

YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING  
THIS PART OF THE GRADUATE DEGREE CITED ABOVE

1 May 79  
DATE

Paul D. Creta  
ADVISER

5-7-79  
DATE

Ronald L. Noler  
DEPARTMENT HEAD

BIRTH ORDER BINGO: F1, M2, L3

BY

TIMOTHY LEE TENNYSON

B.S.-Southern Illinois University, 1974  
M.A.-Eastern Illinois University, 1976

ABSTRACT OF A THESIS

Submitted In Partial Fulfillment Of The Requirements  
For The Degree Of Specialist In Education In The Graduate School  
Of Eastern Illinois University

CHARLESTON, ILLINOIS  
1979

## BIRTH ORDER BINGO: F1, M2, L3

### Hypotheses

The major hypothesis is: Birth order has no effect on the relationship between personality and achievement. The other hypotheses are: (1) People do not enter marriage situations which closely resemble their childhood situations; (2) Birth order has no effect on achievement; and (3) Birth order has no effect on personality.

### Subjects

The people involved in this study were from two groups. The main group, used to resolve three of the hypotheses of this report, were sixth, seventh, and eighth grade students of Cumberland Junior High School. The other group, used to test Toman's hypothesis were the teachers of Cumberland Unit District #77, grades kindergarten through twelve.

### Conclusions

Considering achievement first, it seems clear that the middle children are in the poorest situation. First-borns and last-borns outscore them in general. Speaking of personality, however, it is the middle children who seem to be best adjusted. It seems as though the other birth order children get their attention by being good scholastically, while middle children feel they cannot compete. "Attention" is used because it is one of the best reinforcers a child can receive.

Because of his being in the middle and having to learn

to get along with both older and younger siblings, the middle child is better able to meet the stresses he finds in his various environments; especially school, because for many children this is the first place they go that enlists the coping techniques (or attention-seeking maneuvers) they have learned at home.

### Summary

After executing this research, this author is convinced of the importance birth order has in a counseling or psychology program. Birth order is very interesting and there are definite characteristics which groups of the various ordinal positions possess. One could easily, and correctly, say that these traits manifest themselves in different ways in different people. They may never be displayed at all. It must be remembered, however, that one basic idea of all psychological study is to find ways to help people work through difficult periods in their lives. If the individual never has the problems nor displays them, then he would possibly never have need of a counselor. If an individual never exhibits the problems associated with his birth order, then he has no need for someone's assistance with those problems. On the other hand, if a person is troubled because of the pressures of his birth order, then it seems wise to have the tools available to help this person. Some of these tools can be obtained by studying birth order.

#### ACKNOWLEDGEMENTS

Special thanks to my wife, Louise, and my three sons: Brian, Chris, and Matthew who have put up with me during these months. Also, thanks to Dr. Overton, Darrell Starwalt, and Gayle Carrell who gave assistance and moral support.



## TABLE OF CONTENTS

Chapter	Page
I. Introduction.....	1
Review of the Literature.....	1
Statement of the purpose.....	15
II. The Study.....	16
Hypotheses.....	16
Subjects.....	16
Collection of Data.....	16
Comparisons that were made.....	19
Limitations of this Study.....	20
III. Results.....	21
Toman's Hypothesis.....	21
Birth Order Versus Achievement.....	22
Birth Order Versus Personality.....	24
Effect of Birth Order on the Relationship Between Personality and Achievement.....	25
IV. Conclusions, Suggestions and Summary.....	31
Appendix A Questionnaires and Information Sheets.....	34
Appendix B Tables and Graphs.....	41
Bibliography.....	62

CHAPTER I  
INTRODUCTION

Review of the Literature

Birth order study is by no means a new concept in psychology. An abundance of research has been conducted concerning birth order and its relationship to other concepts such as achievement and personality. In the search for information, however, very little material was found which showed the effect of ordinal position on the relationship between personality and achievement. It seemed quite reasonable for such an affect to exist since birth order affects the two factors individually. The decision to try to find the extent of this effect was made when this passage was read:

"Personality is not something separate and apart from ability or achievement but includes them; it refers rather to the manner and effectiveness with which the whole individual meets his personal and social problems, and indirectly the manner in which he impresses his fellows."<sup>1</sup>

---

<sup>1</sup>Thorpe, et al; California Test of Personality; Elementary Form; California Test Bureau; Los Angeles, California; 1953 edit.; p. 2.

Before continuing, there are terms which are used quite often in birth order literature. These include phrases such as "tend to", "seems to", and "tendency to be". One of the first things one finds when reading about this topic is that authors agree that there is "nothing fixed nor inevitable about the effect of birth order".<sup>2</sup> There are many things which affect the effect of birth order on any individual. These include socio-economic conditions, heredity, cultural origin, disabilities, sex, death, spacing or family configuration, and of special importance are the parents. The main point here is generality. The findings reveal the general trends which occur because of birth order; they in no way suggest a set pattern for an individual.

To reiterate, much information has been collected about birth order and achievement. Much of the literature shows that first-borns have a tendency to be more achievement-oriented than their siblings. (It is time to sidestep and define the ordinal positions as they will be used in this paper. A first-born is the oldest child in a family that has more than one child. A middle child refers to any child, in a family with three or more children, that is not a first-born nor a last-born. A last-born is the youngest child in a family with more than one child. Also, in this paper, the masculine gender of pronouns is used when speaking about general cases. Unless specifically

---

<sup>2</sup>Falbo, T; "Does the Only Child Grow Up Miserable?"; Psychology Today; May, 1976, p. 61.

stated otherwise, these terms will refer to both sexes.) In an article concerning birth order and school-related behavior,<sup>3</sup> Bradley found that first-borns meet teachers' expectations more often, show more susceptibility to social pressure, exhibit greater information-seeking behavior, and seem to be more sensitive to tension-producing situations. This lets others see them as serious and as being low in aggression. This, in turn, strengthens their motivation for achievement and helps enhance their performance.

Parents and siblings are usually important causes of birth order characteristics since they are very important influences in most children's lives. The parents often spend more time with the first-born and expect more from him. This enables the oldest child to learn words and numbers faster and to demand more from himself. This could account for, at least partially, the findings that indicate first-borns have better verbal skills and make higher grades in school.

In 1928 Adler suggested "dethroning" as a cause for the achievement drive in first-borns. His theory was that the first-born has his parents to himself in the fashion of a king on his throne. When the second child (and subsequent siblings to a lesser degree) arrives, the first-born loses his place as center of attention; he is "dethroned".<sup>4</sup>

---

<sup>3</sup>Bradley, R.W.; "Birth Order and School-Related Behavior: A Heuristic View"; Psychological Bulletin; Vol. 70; 1968, p. 45.

<sup>4</sup>Miller, A.M.; "How Birth Order Affects Your Personality"; McCalls; Vol. 104; Oct., 1976; p. 50.

Because of this he struggles to restore his place. Miller suggests that this struggle (specifically speaking of girls) may surface in the form of neatness, politeness, or superior schoolwork.<sup>5</sup> Whatever the manifestations of the need to regain and maintain his place in the family, the need is instilled in the child for life. He learns it well.

Miller also believes that second-borns are more relaxed and they value popularity over achievement.<sup>6</sup> Singer's findings agreed with this in a study which revealed no relationship between grades of first-borns and their level of "social manipulation". However, there was a high relationship for later-borns. The conclusion was that the latter tended to be more "interested in relationships with other people".<sup>7</sup>

First-borns also seem to have a more "strongly developed conscience".<sup>8</sup> Parents issue more physical punishment and deprivation of privileges to the first-born than they do to later-borns. Lobenz says the first-born is more self-disciplined and hardworking. He is sure of himself because parents made a fuss over everything he did. He also grew up under pressure to behave properly and "made his parents'

---

<sup>5</sup>Ibid.; p. 51.

<sup>6</sup>Ibid.; p. 52.

<sup>7</sup>Forer, L.K.; Birth Order and Life Roles; C.C. Thomas, Pub.: Springfield, Illinois; 1969; p. 37.

<sup>8</sup>Sears, et al.; Patterns of Child Rearing; Row, Peterson, and Co.: Evanston, Illinois; 1957, p. 418.

values (obedience, conformity, responsibility, hard work, achievement) a part of his own conscience".<sup>9</sup>

Forer believes that parents tend to show more anger in their relations with first-borns, who tend to show more anger and be more critical than later-borns. The oldest child, while receiving more physical punishment, does not tend to "be as outwardly aggressive in behavior as later-borns do".<sup>10</sup> First-borns express themselves verbally rather than physically. This coincides with the earlier finding that first-borns possess better verbal skills than their younger siblings. Since they are better at verbal skills, they are more likely to use this as a method of defense -- or attack, whichever is applicable. Other studies show that while first-borns show more verbal aggression to parents, second-borns show more physical aggression to first-borns. There is a theory that states, "...aggression is directed toward the next-highest available person in the power hierarchy in the family."<sup>11</sup> This may be a reason for more quarreling among middle and youngest children of a family.

First-borns also tend to be more fearful and anxious. This is probably because parents are more anxious, interfering, and restrictive due to their being new at the job of parenthood. First-borns are treated with less protectiveness

---

<sup>9</sup>Lobenz, N.; "Why You Are the Way You Are"; Seventeen; Vol. 32; February, 1973; p. 105.

<sup>10</sup>Forer; p. 32.

<sup>11</sup>Sears; p. 417.

and seem to be more strong-willed and stubborn. The exception to this is sometimes with the only child, where parents are often overprotective, especially with girls.

First-borns have a tendency to be more conforming to parental standards, more self-critical, more severe in self-disapproval, more rebellious verbally, but also more socially conforming. Forer suggests that they are more likely to run away from home, drop out of school, and refuse obedience to parents. This is due, in part, to uncertainty in judgement and inconsistency on the parents' parts.

Kronig believes that first-borns "are destined to defend tradition, law, and continuity of customs".<sup>12</sup> They tend to carry the past into the present. Harris did a study along these lines and found that first-borns use an intellectual approach with a basis of general principles while later-borns are more factual and use a practical approach. He used this thought to discuss political history. During World War II first-borns were needed to defend what had been established: Churchill, Hitler, Mussolini, Roosevelt. More recently, western nations needed later-borns: DeGaulle, Kennedy, Adenaur, Humphrey.<sup>13</sup>

Making the comparison from the viewpoint of later-borns, the middle child is considered by many researchers

---

<sup>12</sup>Forer; p. 39.

<sup>13</sup>Ibid.; p. 40.

to have the most difficult position.<sup>14</sup> He gets less affection and less attention than does the oldest or youngest child, especially if either is of the same sex. (Studies have shown that birth order characteristics are strongest when all siblings are of the same sex.)<sup>15</sup> This does not imply that parents love their middle children less; but it is true that the antics of the second child are not new to his parents, and that the youngest (or next-younger) child is the baby and receives the attention required by and necessary for a baby. This lack of attention is partly why the middle child is very competitive and attention-seeking, thereby enhancing anxiety and self-criticism. The middle child develops strategies of tactfulness. He must fit the role of a younger sibling when dealing with older siblings and parents, but he must also fill the role of an older sibling when dealing with his younger siblings.

A. E. Fischer's work with second-borns between the ages of one and three showed that signs of discontent and turmoil often break out during this period.<sup>16</sup> Fischer cites the mother as the reason. She is over-solicitous in behavior toward the first child because of her feelings of insecurity. The second child is more tranquil so she gives even more attention to the older child, thinking that

---

<sup>14</sup>Miller, p. 51.

<sup>15</sup>Lobenz; p. 218.

<sup>16</sup>Forer; p. 52.



he needs it. The result is a feeling of neglect and a need for being competitive by the middle child. One can see that these findings support the views of Miller and Lobenz.

The youngest child, the last-born, is often a complex person. He is easy-going, relaxed, and well-liked as an adult. This ordinal position does carry its problems, however. Things are often done for him and less is expected of him as he grows up. This develops dependency, a persistent lack of maturity, and a feeling of inadequacy. The last-born is a creative, volatile person who can be relaxed one minute and flared up the next. The practical-joker is likely to be a last-born; he likes to be the "life of the party".

Matching ordinal positions with adult relationships is a concern of Toman. He proposes two hypotheses: (1) New interpersonal relationships will duplicate the earliest interpersonal relationships in degrees from duplication to none at all and (2) The closer the new relationships come in kind to old ones, other things being equal, the better will the person be prepared for the new ones, and the greater their likelihood to last and to be happy and successful.<sup>17</sup>

Toman also argues that who we choose for spouses, friends, partners, assistants, superiors, and so forth is co-determined by the people we have lived with the longest.

---

<sup>17</sup>Toman, W.; Family Constellation: Its Effects on Personality and Social Behavior; Springer Pub. Co.: N.Y.; 1969; p. 6.

These are usually, of course, the members of our family -- especially our parents. Reference was made earlier to the importance of parents when speaking of birth order characteristics. Parents set the emotional tone for the family, establish behavior patterns and attitudes, and help maintain relationships with the children by being available (or unavailable) to them. The parents really seem to be the crux of the whole "game of a thousand games" as Toman calls it.

Toman writes quite extensively about the choosing of marriage partners. As he proposed, we generally seek relationships which allow us to feel secure and comfortable, and these types of relationships often closely resemble the family situations in which we grew up. Given any one person, there are countless numbers of marriage situations into which that person might enter. Given any two persons, that number is greatly reduced but still may be large depending on their particular family configurations. Toman attacked the problem mathematically. He found that the number of possible marriage relationships into which a man and woman could enter is given by the formula  $n+m-2$ , where "n" is the number of children in the man's family and "m" is the number of children in the woman's family. This is without knowing the ordinal position of either person. As an example, consider this author and his wife. He is from a family of six children and his wife is from a family of nineteen children. There are, because of all the possible ordinal positions,  $6+19-2$  or 8,388,608 relationships possible.

However, only one was entered; the author is the third child in a family with one girl and his wife is the fourth child of a family with twelve boys and seven girls.

Rather than go through each of the possible cases for this sample, an example involving a man and a woman who each have one sibling will be discussed briefly. Their ordinal positions are not known, so there are  $2+2-2$  or 16 possible marriage relationships to enter. Here are the sixteen.

1. Male with younger sister marries female with older brother.

2. Male with younger sister marries female with younger brother.

3. Male with younger sister marries female with younger sister.

4. Male with younger sister marries female with older sister.

5. Male with younger brother marries female with older brother.

6. Male with younger brother marries female with younger brother.

7. Male with younger brother marries female with younger sister.

8. Male with younger brother marries female with older sister.

9. Male with older brother marries female with older brother.

10. Male with older brother marries female with younger brother.

11. Male with older brother marries female with younger sister.

12. Male with older brother marries female with older sister.

13. Male with older sister marries female with older brother.

14. Male with older sister marries female with younger brother.

15. Male with older sister marries female with younger sister.

16. Male with older sister marries female with older sister.

The main two criteria Toman used to explain the likelihood of each relationship to be lasting, growing, healthy, and productive were seniority and familiarity with the opposite sex. Seniority refers to birth order -- whether or not they were the oldest or youngest child (the only two possibilities in this example).

On the basis of these criteria, the first and fourteenth possibilities of the above example are the most likely to develop into sound relationships. Both people are entering a new relationship which is most nearly like the one they grew up in, and there is no struggle over seniority. Also, both are familiar with the other's sex. The least likely to succeed, on the basis of the given criteria, is number twelve. Neither has had experience with the other's sex and neither has had experience in being in a dominating role. Decision-making might well

be an ordeal for this pair.

A reminder might be in order here. Just because two people are in certain ordinal positions, it does not follow that they will not make a loving and happy couple. We are dealing with large generalities and each person grows up with his unique experiences and his unique personality.

In summary of the three ordinal positions of first, middle, and last - which Forer labels "pride and joy", "is he lost", and "is he a spoiled brat", respectfully - three general tendencies of development are given. The oldest things, "I do many things better than my siblings. I am more adequate than other people in many situations." The middle child thinks that he is sometimes better able to do things than other people (because of younger siblings), but that he can get help when he needs it (because of older siblings and parents). The youngest child thinks, "I am less able to do many things than other people. But I need not be concerned because there are always others around to take care of me."<sup>18</sup>

At the beginning of this review of the literature, several factors were mentioned which affect the results of being in a particular ordinal position. The most important, parents, has been discussed. The only other factor which lies within the scope of this paper is spacing, or family configuration. This includes not only the number of family

---

<sup>18</sup>Forer; p. 6.

members but also the number of years between successive siblings in the family. It includes extended families as well as nuclear families. Research findings have indicated that the effects of birth order lessen with the increase in the age differences of the siblings. In fact, an age gap of more than six years usually gives the latter child the characteristics of an only child.

Zajonc did research in this area and his findings led to this theory: "The intellectual environment of a family depends on the number of family members and their ages."<sup>19</sup> The idea is to represent intellectual environment as the average of the absolute intelligence level of all family members. Zajonc is not talking about IQ, but mental ability that increases each year to adulthood. He sets the intelligence level of adults (parents are counted as adults regardless of age if they are at least 17 years old) at 30 units and that of newborns at zero units. So the intellectual environment of a couple's first child would be

$\frac{30 + 30 + 0}{3} = 20$  units. The two thirties come from the parents and the zero from the newborn child. If another adult were living with the family when the child was born, then the intellectual environment of the newborn would be

$\frac{30 + 30 + 30 + 0}{4} = 22.5$  units.

As another example, consider a couple with a four year

---

<sup>19</sup>Tarvis, C.; "The End of the IQ Slump"; Psychology Today; April, 1976; p. 69.

old child. The intellectual environment of a second child would be  $\frac{30 + 30 + 4 + 0}{4} = 16$  units. This shows that spacing does indeed affect the intellectual environment into which a child is born. It also shows that if the age gap is wide enough, then the environment need not decrease. This concurs with the finding that later children have first-born characteristics if the age gap is wide enough.

What other effects does spacing have on mental ability? Results of four tests were taken from four countries (U.S.A., Netherlands, France, Scotland) on a total of 1,370,000 students. Each test gave the same results: (1) average scores declined as family size increased; (2) average scores declined as birth order increased; (3) higher IQ scores were obtained where there was more spacing within the family. So the effects of spacing may be quite extensive. Each child is born with his own personal mental ability but the environment in which he grows effects this tremendously, and it is spacing that effects the child's intellectual environment.

The position one holds in his family greatly influences his attitude toward himself and others as well as his patterns of behavior. Research has hinted that it is not the genetic fact of being born first, middle, or last that causes the influence. It is, instead, the result of parental and sibling interrelationships (or lack of them). In summary, the fact that one is born in a certain ordinal position may or may not be of any significance, but the results of being in that ordinal position certainly seem

to be of great importance.

Statement of the Purpose

The prime objective of this study is to see if birth order effects the relationship between personality and achievement. Three other objectives are considered: (1) Do people choose marriage partners so that this relationship is similar to ones they grew up in?; (2) Does birth order effect achievement?; and (3) Does birth order effect personality?



## CHAPTER II

### THE STUDY

#### Hypotheses

The major hypothesis is: Birth order has no effect on the relationship between personality and achievement. The other hypotheses are: (1) People do not enter marriage situations which closely resemble their childhood situations; (2) Birth order has no effect on achievement; and (3) Birth order has no effect on personality.

#### Subjects

The people involved in this study were from two groups. The main group, used to resolve three of the hypotheses of this report, were sixth, seventh, and eighth grade students of Cumberland Junior High School. The other group, used to test Toman's hypothesis, were the teachers of Cumberland Unit District #77, grades kindergarten through twelve.

#### Collection of Data

The data collected from the teachers concerned their birth order and the birth order of their spouses. This information was obtained through Questionnaire I shown in Appendix A.

To meet the other purposes of this study, information about achievement, personality, and birth order was collected

about the students. The achievement data was obtained from the students' scores on the Stanford Achievement Test, Form A, 1973 edition. This test was administered to the students in April, 1978. It has various subscores, but the only ones used in this study were the Reading Total, the Math Total, and the Battery Total. The data was collected in terms of grade equivalents. To check if age made a difference, the fourth grade scores of the students who are now eighth graders were collected so that a comparison could be made.

The personality data was obtained from the students' scores on the California Test of Personality, Elementary Level. This inventory was administered to the students in October, 1978. This test attempts to measure personality by checking twelve components of adjustment ability. Six of these are under the category of "personal adjustment" and the other six are placed under "social adjustment". Scores are given for each component, for the total of the two categories, and for the total of the whole inventory. The results of the questionnaire are given in percentiles, so the data used in this research was likewise in percentiles.

The six components of personal adjustment are: self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies, and nervous symptoms. The six components of social adjustment are: social standards, social skills, anti-social tendencies, family relations, school relations, and community relations.

The first step in this project was to obtain permission from the parents to allow their children to take part in the study. Questionnaire II was sent home with the 288 students of the junior high. Of these, 192 were returned and 145 gave permission for their children to take part in the research. Nine of these students had not taken the achievement test, so there were 136 students involved in the entire study. Here is the breakdown by grade and by birth order:

	Sixth Grade	Seventh Grade	Eighth Grade	Total
First-borns	23	13	12	48
Middle Children	15	20	22	57
Last-borns	13	9	9	31
Total	51	42	43	136

Questionnaire III is not actually a part of this study, but it was sent home with the students who were going to take the personality test. It seemed necessary because several parents asked to see, or to be given, the results. Questionnaire IV was attached to the profile sheets that were placed in the students' records.

Once the permission had been received, the birth order information, which included the family configuration and the parental relationships, was collected. The items asked of the students are shown on Questionnaire V.

The achievement test scores were collected next. The norms were 5.8, 6.8, and 7.8 for the sixth, seventh, and eighth grades, respectfully. These norms are one grade level lower than the students' present grade level because

the test was given in the preceding school year.

The next information gathered was from the personality test. Results from each of the twelve components, the two subscores, and the total adjustment score were recorded.

#### Comparisons That Were Made

There are four major comparisons made in this paper. Each of these concerns itself with one of the purposes of this project. Also, each comparison deals with the three grade levels separately and then with the whole student body (the 136 students). The exception to this last statement is the topic dealing with the teachers.

The first comparison was between the birth order of the teachers and the birth order of their spouses. The purpose here was to see if these adults did, in fact, enter marriage situations which gave them relationships which most closely coincided with the ones they grew up in; that is, the family situation they knew as children. This comparison is shown in tabular form in Table I of Appendix B.

The second comparison was between birth order and achievement for the students. This was done for each grade level as well as the total number of students. The comparison was also done for the eighth graders when they were in the fourth grade. (See Appendix B for the charts showing the relationships.)

The third comparison was between birth order and personality. Again, this was done for each grade level and for the total number of students. (See Appendix B.)

The next comparison was the crux of the whole study. If it is assumed that there is a relationship between birth order and personality and a relationship between birth order and achievement (regardless of what these relationships might be), then does it follow that birth order effects the relationship between personality and achievement? To try to find an answer to this question, personality was compared to achievement in terms of birth order. Tabulation of the acquired data is shown in Appendix B.

#### Limitations of This Study

Before beginning any discussion of results and evaluations, the limitations, or weaknesses, of this study should be discussed. First of all, the personality test was administered about five and a half months after the achievement test. Children at this age are in a period of rapid growth, so the results may have been different if the two had been given more closely together. Secondly, there were 288 students in the junior high, but only 136 were involved in the study because they had either not taken the achievement test or their parents would not allow them to take the personality test. Thirdly, the validity of the personality test is a factor. While this particular test is one of the more valid, validity is not a trademark of any such tool. Finally, and very importantly, there are many factors which affects one's personality and no attempt was made to control any of them. The single factor of birth order was chosen to be studied, but it was not isolated in any fashion from the others within the students.

## CHAPTER III

### RESULTS

#### Toman's Hypothesis

All results discussed in this chapter are shown in tabular and graphical form in Appendix B.

As Table I shows, the results prove the hypothesis about Toman's hypothesis is true. A much larger number (39.1%) of first-borns married either a first-born or an only child than might be expected.

Two things of interest came from this small sampling. First of all, 44.2% of the teachers were first-borns (48.1% if "onlys" are included). It would be interesting to see if such a large representation of first-borns would still hold for a much larger sampling. Perhaps there is something in the personality of a first-born which makes a helping profession such as teaching seem like the road to follow.

Secondly, 50% of the middle-born teachers (21.2% of the total group) are unmarried. Could this be due to the personality traits of middle-borns, or is being single more likely because of their ages, or is it an indication of a changing way of life in America today?

Whatever the answers to these questions, this small excursion shows, quite clearly in fact, that this author's hypothesis involving Toman's hypothesis is true for any

given small group of people. On the other hand, since this sampling is so small, it does not disprove it for the general populous. So for this data it can be said that people do not enter marriage situations which closely resemble their childhood situations.

#### Birth Order Versus Achievement

Tables II through IX show the results.

The parameters for this part of the study were set at  $p < .01$  for very significant,  $p < .05$  for significant, and  $p \geq .05$  for not significant.

The significance ratio was the tool used to calculate the statistics for this part of the research. This ratio tells whether or not the difference in two sets of scores is of a significant level. Each ordinal position was compared, pair-wise, to every other ordinal position as well as the total number of students in that grade level. To simplify the tables, a separate table was made for each comparison. Since the means and standard deviations were a very important part of the calculations, these are given in Table II.

Table III compares the eighth graders' scores to their own scores when they were in the fourth grade. The purpose was to see if age was a significant factor. The results showed that it was not. The difference was not significant on any of the three parts of the achievement test that were investigated.

Table IV shows that the total number of first-borns in the junior high did score significantly different ( $p .01$ )

from the middle children in all three parts of the test. Table II shows that the significance is in an upward direction. That is, the first-borns scored significantly higher.

Table V shows that the first-borns' scores were significantly different ( $p < .01$ ) from the last-borns' scores only in the math subscore. Table II shows that this time it is the last-borns who have the higher average. It was interesting that the difference was significant ( $p < .05$ ) for the seventh graders on all three parts of the achievement test.

Table VI uncovered some interesting results. While there was no significant difference at any one grade level for the battery total, there was a very significant difference ( $p < .01$ ) for the total junior high. This could have occurred when the first-borns of two or three grade levels score only slightly lower than all students tested. Then when the total first-borns of the junior high were considered, the combined difference was at a significant level.

Table VII also shows a very significant difference ( $p .01$ ) between the scores of middle children and last-borns. As with the first-borns, Table II shows that the last-borns scored significantly higher.

The middle children are seen to be significantly lower again in Table VIII. The means and standard deviations are not as far apart in this case, but it must be remembered that in this case the middle children were included in the group with which they were compared.



Finally, Table IX shows that last-borns scored significantly different ( $p < .01$ ) from the total junior high in all three parts of the test.

To summarize, the results show that first-borns and last-borns both scored significantly higher than the middle children in all three areas of the achievement test that were considered. Last-borns scored significantly higher in the math subscore than the first-borns, but there was no significant difference between the reading subscore nor the battery total. Therefore, the hypothesis is false for this set of data. Birth order does effect achievement.

#### Birth Order Versus Personality

The same statistical material was employed to find the results of this section as was used on the achievement test results. Also, the same parameters were used. Table XVI gives the means and standard deviations. Tables X through XV show the results.

Each birth order was gain compared, pair-wise, to each other ordinal position as well as to the total number of students in the same grade level. As can be seen from the tables, the results are quite unlike the results of the previous discussion. The only significant different ( $p < .05$ ) found in all the comparisons was for the total number of first-borns in the junior high compared to the total number of middle children in the junior high (Table X). This difference was in the personal subscore only. Table XVI shows that this time it is the middle children who have the higher average.

As a summary for this section, one must simply say that last-borns showed no significant difference in their personality scores from the other two ordinal positions. Also, the middle children scored significantly higher than the first-borns only in the personal subscore of the personality test. Therefore, this hypothesis is true for this set of data. Birth order has no effect on personality (at best, only a very slight effect).

It seems, therefore, that there is a tendency for first-borns to score higher scholastically and only a very slight tendency for middle children to be better adjusted. (Remember, adjustment to one's environment is what the personality test attempts to measure.)

#### Effect of Birth Order on the Relationship Between Personality and Achievement

These results are shown in tables XVII through XX and on graphs I through VIII. The tables show how the students of the three birth order positions scored on the personality test and on the achievement test. Tables XVII, XVIII, and XIX relate grades six, seven, and eight, respectively. Table XX is for the total junior high. All of these tabulations include only the totals for both tests.

Table XX shows that the middle children had the widest range of scores on the achievement test, scoring both the lowest and the highest of all students tested. The most often occurring range on the achievement test for first-borns was 7.0 to 7.9; for middle children it was 6.0 to 6.9; for last-borns it was also 6.0 to 6.9; and for all students

it was again 7.0 to 7.9. So, in these terms, the first-borns were slightly higher than the other birth orders. This is consistent with the findings which were discussed earlier.

The most often occurring score on the personality test for all three birth orders was the 40th percentile (25% of all students had this score). The range of scores was quite scattered with each birth order having at least one person in every percentile ranking except for 80 and 90. No last-borns scored 90 (three scored 80) and no first-borns scored 80 (one scored 90 and four scored 70). On the basis of this data it cannot be said that one birth order did better or poorer than either of the other birth orders. This again coincides with the findings discussed earlier.

The graphs also attempt to show how birth order effects the relationship between personality and achievement. Each graph is keyed as follows: dashes represent first-born scores, dashes and dots represent middle children scores, dots represent last-born scores, and a solid line represents the total for the grade level.

The first four graphs show the average personality scores of the students that fall between each grade equivalent score. For example, Graph I shows that first-born sixth-graders who had achievement scores between 4.0 and 4.9 also had an average personality score of 20 (ranked in the 20th percentile). For plotting purposes 4.5, 5.5, 6.5, etc. were the scores used on the achievement axis. Therefore, in this example, the coordinates on the graph are (4.5, 20).

Graphs V through VIII compared the average achievement scores with each of the percentile rankings scored on the personality test. As another example, Graph V shows that the middle children who scored in the 30th percentile also had an average achievement score of 5.2. The coordinates here would be (5.2, 30).

Now the results may be considered. Graphs IV and VIII are the most important since they include all students in the study. So only these two graphs will be discussed.

While looking at Graph IV suppose a straight line was drawn from the lowest point for all the students (the solid line) to the highest point for all the students. One would find that the middle children come out on top. They have six points equal to or above the total for all students. The last-borns have only two such points and the first-borns have none at all. Also, two of the middle children's scores are higher than either score for the last-borns. It may be said, therefore, that the middle children have a tendency to be better adjusted to their environments than do the other children. This is easily understood if one remembers that middle children are forced to learn a certain degree of diplomacy simply because of their birth order position. They must act like older siblings to their younger and act like younger siblings to their elders.

Looking below the imagined average line one sees that while many scores fall below this line, the first-borns are lowest at every point except one. This leads one to believe that first-borns tend to be at least slightly less

well-adjust to their environments than are the other children. It can be understood why later-borns would be better adjusted than first-borns because they generally are put under less stress to succeed than their older siblings.

Now consider Graph VIII. Suppose again that a line is drawn from the lowest score for all students to their highest score. To the right of the line one sees one last-born score, four scores of middle children, and five scores of first-borns. Also, three of the first-born scores are higher than all the others. On achievement, then, it might be said that first-borns have a tendency to be higher than the other birth orders.

Going in the other direction, one sees four first-born scores, six scores of middle children, and nine last-born scores to the left of the average line. These results lead one to believe that last-borns tend to score lower on achievement than the other birth orders.

One final thing shows up on seven of the eight graphs. (Graph V is the exception.) This is the quite noticeable fact that the graphs always have an overall slant. That is, as the personality scores rise, so do the achievement scores, and visa versa. It seems quite clear that personality and achievement are very positively related. There are, of course, exceptions and the relation is not the same for each grade level nor each birth order, but the trend is definitely there.

A word of warning must be placed here, however. The number of students in one certain percentile or one certain

achievement score range is often quite small. The more students there are in the sample, the truer the overall picture becomes. So the results may not have been the same if there had been an equal number in each percentile and achievement score range. However, this author feels the results would not have been greatly altered, and that a higher achievement score does in fact imply a higher personality score.

Now to summarize the results of this section. First of all, this author believes the hypothesis is false. Birth order does indeed effect the relationship between personality and achievement. As was mentioned before, personality scores rise as achievement scores rise; but the rate of ascension is not the same for the three birth orders. It is fastest for the last-borns and slowest for the first-borns. An explanation for this might be that last-borns are more volitile. As their achievement level increases, their feelings toward themselves improve. Thus, they feel better equipped to handle the stresses from their environments. They are better able to adjust. This is true for all three birth orders in question, but because of the explosiveness of last-borns, their self-concepts are affected to a greater extent.

An explanation for why first-borns show a lesser change in personality with a change in achievement could be because they generally see themselves as being more capable of doing things correctly in the first place. Their self-concepts are not boosted so much because they already see themselves as more capable than their siblings.

Middle children might be affected at an in-between level because they are in between. Their self-concepts are boosted more than first-borns' self-concepts because of their (perhaps unexpected) greater achievement level. On the other hand, their self-concepts are not raised as much as last-borns' because they still fear the possibility of being outdone - again.

## CHAPTER IV

### CONCLUSIONS, SUGGESTIONS, AND SUMMARY

#### Conclusions

Considering achievement first, it seems clear that the middle children are in the poorest situation. First-borns and last-borns outscore them in general. Speaking of personality, however, it is the middle children who seem to be best adjusted. It seems as though the other birth order children get their attention by being good scholastically, while middle children feel they cannot compete. "Attention" is used because it is one of the best reinforcers a child can receive.

Because of his being in the middle and having to learn to get along with both older and younger siblings, the middle child is better able to meet the stresses he finds in his various environments; especially school, because for many children this is the firstplace they go that enlists the coping techniques (or attention-seeking maneuvers) they have learned at home.

#### Suggestions

Several items that were touched upon in this study could be dealt with much more thoroughly. The result concerning Toman's hypothesis gave some interesting results. It would be interesting to see if the same, or similar,



results were obtained from a much larger sampling.

Toman wrote about the important of being familiar with the opposite sex. It would be interesting to see the results of some sort of comparison between birth order and sex. For example, if it were found that there was a much larger majority of females in the first-born group than in the other birth order groups, then perhaps the fact that first-borns score higher on achievement is due to sex rather than birth order.

Still thinking of the sexes, the results of a relationship between personality, sex, and birth order could provide some thought-provoking information.

Another suggestion that is more closely tied to this study concerns the number of students in each personality percentile and each achievement score range. Would the results of this study have been the same if there had been an equal number from each birth order who scored at each percentile and in each achievement score range? This question would be difficult to answer because it would take a very large sampling to get enough people in each desired range to give statistically valid results.

One last suggestion for future projects concerns the heart of this study. It was found that personality and achievement have a positive correlation; but does achievement cause a change in personality or does personality cause a change in achievement or does something else within the individual cause both variables to change? This would be a project for a curious but patient researcher.

Summary

After executing this research, this author is convinced of the importance birth order has in a counseling or psychology program. Birth order is very interesting and there are definite characteristics which groups of the various ordinal positions possess. One could easily, and correctly, say that these traits manifest themselves in different ways in different people. They may never be displayed at all. It must be remembered, however, that one basic idea of all psychological study is to find ways to help people work through difficult periods in their lives. If the individual never has the problems nor displays them, then he would possibly never have need of a counselor. If an individual never exhibits the problems associated with his birth order, then he has no need for someone's assistance with those problems. On the other hand, if a person is troubled because of the pressures of his birth order, then it seems wise to have the tools available to help this person. Some of these tools can be obtained by studying birth order.

APPENDIX A

QUESTIONNAIRES & INFORMATION SHEETS

Questionnaire I

I am collecting data for a research paper I must write for my specialist's degree in elementary school guidance and counseling. I would appreciate your providing the following information to help me out. No names will be used in my report and all information will be kept confidential.

Starting with the oldest and descending, please list your age and the ages (no names) of your brothers and sisters. Put a "B" after your brothers' ages, and "S" after your sisters' ages, and "ME" after your age.

Please repeat the process with your spouse's family. After his/her age put "Spouse". If you are unmarried, simply put "single".

Grade school teachers may place these in my mail box and the high school teachers may place them in Mr. Loftis' mailbox.

Thanks for your help,

Timothy Tennyson

Questionnaire II

Dear Parents,

I am writing this letter to ask your permission to let your child participate in a research study which I am conducting. I am working on my specialist degree in elementary school guidance and counseling, and this research paper is a requirement for that degree.

The purpose of my paper is to try to find the relationship between birth order, achievement, and personality; so I need to administer a personality inventory to the junior high students. No names will be used in my paper - I will be looking for general tendencies only - so your child's answers to the questions will be kept in strict confidence.

If you would like, your child's inventory results could be placed in his/her school records. Otherwise, they will be destroyed as soon as I have obtained the necessary information for the report. Having these in the records could be of great value to the teachers to help them to better understand your child; however, this is entirely up to you.

The more students involved in the study, the more valid the results will be, so please give it strong consideration.

Please check the appropriate boxes below:

No. My child may not take the personality inventory.

Yes. My child may take the personality inventory.

Put his/her results in the school records.

Destroy the results after you have your information.

Signature \_\_\_\_\_

If there are any questions, feel free to call me.  
My phone number is 849-3097.

Thank you,

Timothy Tennyson

Questionnaire III

Dear Parents,

Thank you for allowing your child to take part in my research paper. I am writing this letter because quite a few parents asked that the results be sent home.

If you asked that the results be destroyed or put in the records, then this will be done. If you asked that the results be sent home to you, then I feel that it is my place to talk you about the test and the results before I give them to you.

It will probably be several weeks before the test is given; but once it is and I have collected the data then I will be glad to talk to anyone who wants me to. I am free between 2:00 and 2:30 each day. The conference day - November 3 - could be used for this also, if we are allowed to have it.

Thank you again,

Timothy Tennyson

Questionnaire IV

The attached Profile Sheet shows the results of the California Test of Personality, Elementary Level. The test was administered in October, 1978.

The validity and reliability of such personality inventories has always been a source of concern about the usefulness they possess. This document is a tool which, when used along with other pertinent data, can help a counselor to better understand the individual with whom he is dealing. This document, however, should in no way be treated as giving absolutes. In other words no decisions which might possibly effect the individual's future should be made solely on the basis of this personality test alone.

Timothy Tennyson, Examiner



Questionnaire V

Your Name \_\_\_\_\_ Age \_\_\_\_\_

Answer each question as completely as possible.

1. Starting with the oldest and ending with the youngest, list the ages of your brothers and sisters. Put "B" after your brother's ages and "S" after your sister's ages.

2. Check the home situation that applies to you:

both parents at home

live with mother only

live with father only

live with mother and stepfather

live with father and stepmother

both parents and another relative

mother and another relative

father and another relative

I was adopted.

Other (Please explain here.) \_\_\_\_\_

If you marked a choice with another relative, please state the relationship here. \_\_\_\_\_

APPENDIX B

GRAPHS AND CHARTS

TABLE I

## Birth Order of Spouse

		<u>ONLY</u>	<u>FIRST</u>	<u>MIDDLE</u>	<u>LAST</u>	<u>UNMARRIED</u>
Birth Order of Teacher	ONLY	0	1	0	1	0
	FIRST	2	7	7	3	4
	MIDDLE	1	1	2	1	5
	LAST	0	2	7	6	2

52 participants

3.9% only children

16% unmarried

44.2% first-borns

19.2% middle children - 50% unmarried

32.7% last-borns - 11.8% unmarried

40.0% of only and first-born married other only and first-born.

20.0% of middle children married other middle children.

35.3% of last-borns married other last-borns.

TABLE II

## Mean Scores And Standard Deviations

		Reading		Math		Battery	
		M	SD	M	SD	M	SD
FIRST- BORNS	Sixth Grade	8.10	1.81	6.70	1.81	7.10	1.56
	Seventh Grade	8.21	2.20	7.70	1.99	8.10	2.16
	Eighth Grade	9.00	2.03	7.40	1.85	8.11	2.00
	Junior High	8.35	1.17	7.14	1.11	7.62	1.10
	Fourth Grade	5.18	1.76	4.42	1.33	4.53	1.41
MIDDLE CHILDREN	Sixth Grade	6.40	1.40	5.30	1.11	5.90	1.27
	Seventh Grade	7.20	2.02	6.40	1.95	6.60	1.87
	Eighth Grade	8.40	2.42	8.00	2.09	8.10	2.35
	Junior High	7.45	2.05	6.73	1.81	6.99	1.93
	Fourth Grade	5.74	2.01	4.91	1.42	5.17	1.52
LAST- BORNS	Sixth Grade	7.30	1.45	6.00	1.08	6.61	1.29
	Seventh Grade	10.60	3.02	10.00	2.68	10.40	2.97
	Eighth Grade	7.30	1.87	7.20	1.74	7.10	1.63
	Junior High	8.26	2.13	7.51	1.86	7.85	2.00
	Fourth Grade	5.06	1.67	4.68	1.51	4.93	1.16
TOTAL OF BIRTH ORDERS	Sixth Grade	7.40	1.61	6.10	1.46	6.60	1.41
	Seventh Grade	8.20	2.32	7.60	2.14	7.90	2.22
	Eighth Grade	8.30	2.21	7.90	1.94	7.91	1.12
	Junior High	7.95	2.05	7.13	1.84	7.41	1.92
	Fourth Grade	5.44	1.88	4.72	1.42	4.94	1.46

TABLE III

Eighth Graders' Scores Compared To Their  
Own Fourth Grade Scores

	Reading	Math	Battery
First-borns to Middle Children	#	#	#
First-borns to Last-borns	#	#	#
First-borns to All Eighth Graders	#	#	#
Middle Children to All Eighth Grades	#	#	#
Last-borns to All Eighth Graders	#	#	#

Key: # not significant

p = .05 significant

p = ,01 very significant

TABLE IV

## First-borns Compared To Middle Children

	Reading	Math	Battery
Sixth Grade	#	.01	.01
Seventh Grade	#	#	.05
Eighth Grade	#	#	#
All Three Grades	.01	.01	.01

TABLE V

## First-borns Compared To Last-borns

	Reading	Math	Battery
Sixth Grade	#	#	#
Seventh Grade	.05	.05	.05
Eighth Grade	.05	#	#
All Three Grades	#	.01	#

TABLE VI

## First-borns Compared To All Students In The Same Grade

	Reading	Math	Battery
Sixth Grade	#	#	#
Seventh Grade	#	#	#
Eighth Grade	.05	#	#
All Three Grades	.01	#	.01

TABLE VII

Middle Children Compared To Last-borns

	Reading	Math	Battery
Sixth Grade	#	.05	#
Seventh Grade	.01	.01	.01
Eighth Grade	#	#	#
All Three Grades	.01	.01	.01

TABLE VIII

Middle Children Compared To All Students In The Same Grade

	Reading	Math	Battery
Sixth Grade	.05	.05	.05
Seventh Grade	.05	.05	.01
Eighth Grade	#	#	#
All Three Grades	.01	.01	.01

TABLE IX

Last-borns Compared To All Students In The Same Grade

	Reading	Math	Battery
Sixth Grade	#	#	#
Seventh Grade	.05	.01	.05
Eighth Grade	#	#	#
All Three Grades	.01	.01	.01

TABLE X

## First-borns Compared To Middle Children

	Personal	Social	Total
Sixth Grade	#	#	#
Seventh Grade	#	#	#
Eighth Grade	#	#	#
All Three Grades	.05	#	#

TABLE XI

## First-borns Compared To Last-borns

	Personal	Social	Total
Sixth Grade	#	#	#
Seventh Grade	#	#	#
Eighth Grade	#	#	#
All Three Grades	#	#	#

TABLE XII

## First-borns Compared To All Students In The Same Grade

	Personal	Social	Total
Sixth Grade	#	#	#
Seventh Grade	#	#	#
Eighth Grade	#	#	#
All Three Grades	#	#	#



TABLE XIII

## Middle Children Compared To Last-borns

	Personal	Social	Total
Sixth Grade	#	#	#
Seventh Grade	#	#	#
Eighth Grade	#	#	#
All Three Grades	#	#	#

TABLE XIV

## Middle Children Compared To All Students In The Same Grade

	Personal	Social	Total
Sixth Grade	#	#	#
Seventh Grade	#	#	#
Eighth Grade	#	#	#
All Three Grades	#	#	#

TABLE XV

## Last-borns Compared To All Students In The Same Grade

	Personal	Social	Total
Sixth Grade	#	#	#
Seventh Grade	#	#	#
Eighth Grade	#	#	#
All Three Grades	#	#	#

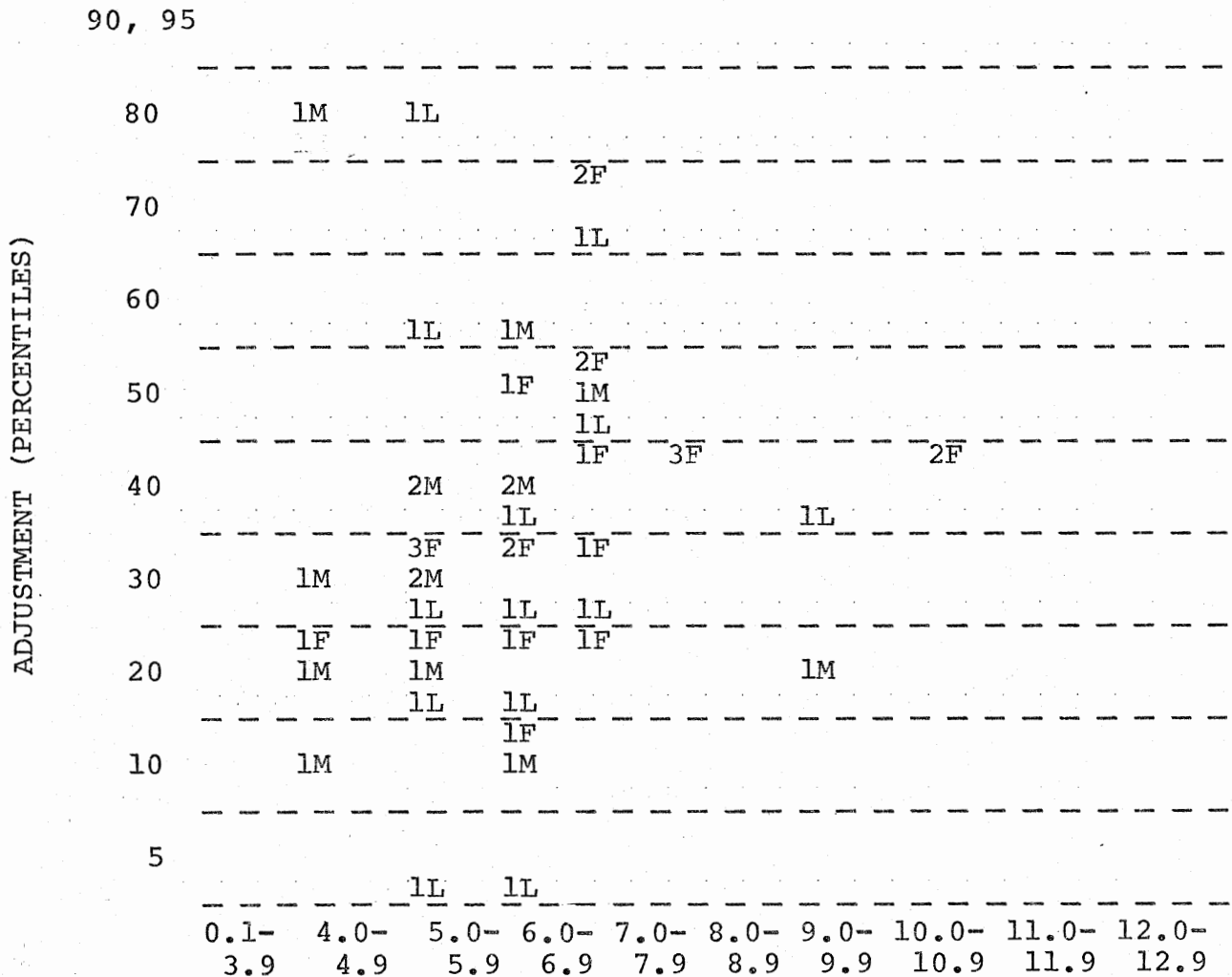
TABLE XVI

## Mean Scores And Standard Deviations

		Personal		Social		Total	
		M	SD	M	SD	M	SD
FIRST- BORNS	Sixth Grade	35.88	15.74	33.58	21.20	33.63	16.01
	Seventh Grade	35.00	18.82	41.15	22.92	38.85	19.23
	Eighth Grade	35.83	26.21	35.42	22.79	35.42	24.28
	Junior High	35.63	19.65	36.09	22.08	35.49	19.24
MIDDLE CHILDREN	Sixth Grade	36.33	17.07	31.00	19.00	34.67	15.28
	Seventh Grade	45.90	18.28	40.00	14.49	41.50	14.59
	Eighth Grade	45.46	22.36	43.86	25.13	45.68	23.47
	Junior High	43.21	19.67	39.12	20.31	41.32	19.36
LAST- BORNS	Sixth Grade	39.77	21.43	35.15	24.90	36.92	22.28
	Seventh Grade	52.78	26.67	49.11	22.84	50.56	24.32
	Eighth Grade	40.00	24.72	36.67	20.00	37.78	18.16
	Junior High	43.61	24.00	39.65	22.97	41.13	21.80
TOTAL OF BIRTH ORDERS	Sixth Grade	37.00	17.73	33.22	21.61	34.77	18.44
	Seventh Grade	44.00	20.52	42.31	19.35	42.62	18.51
	Eighth Grade	41.63	24.00	40.00	23.49	41.16	22.69
	Junior High	40.63	20.73	38.17	21.57	39.22	19.90

TABLE XVII

Achievement Versus Adjustment (In Terms of Birth Order)  
Sixth Grade

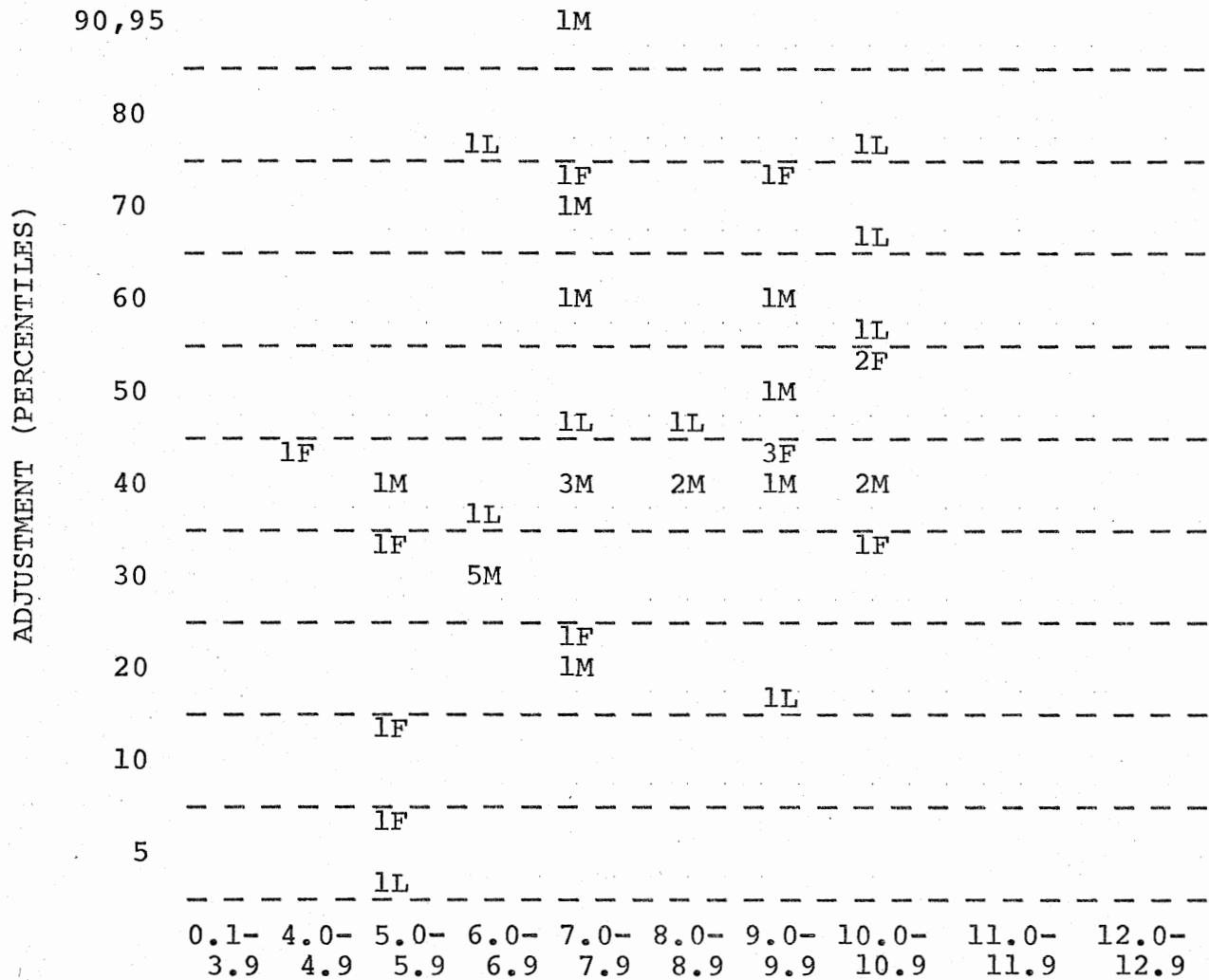


ACHIEVEMENT (GRADE EQUIVALENTS)

KEY: F = First-borns; M = Middle Children; L = Last-borns

TABLE XVIII

Achievement Versus Adjustment (In Terms Of Birth Order)  
Seventh Grade



ACHIEVEMENT (GRADE EQUIVALENTS)

KEY: F = First-borns; M = Middle Children; L = Last-borns

TABLE XIX

Achievement Versus Adjustment (In Terms Of Birth Order)  
Eighth Grade

ADJUSTMENT (PERCENTILES)	90, 95		1F		1M					
	80			2M						
70		1M			1L	1M 1M				
60			1M 1L	1M		1F				
50		1M	1M	1M		1F				
40		1F	1F			1F 1M				
30		1L 2M	2L 2M	1L	1F 1M					
20	1M	1M 1M			1M					
10		1L 1F	1L 1F	1F	1F					
5		1L								
		1M								
	0.1- 3.9	4.0- 4.9	5.0- 5.9	6.0- 6.9	7.0- 7.9	8.0- 8.9	9.0- 9.9	10.0- 10.9	11.0- 11.9	12.0- 12.9

ACHIEVEMENT (GRADE EQUIVALENTS)

Key: F = First-borns; M = Middle Children; L = Last-borns

TABLE XX

Achievement Versus Adjustment (In Terms Of Birth Order)  
Total Junior High

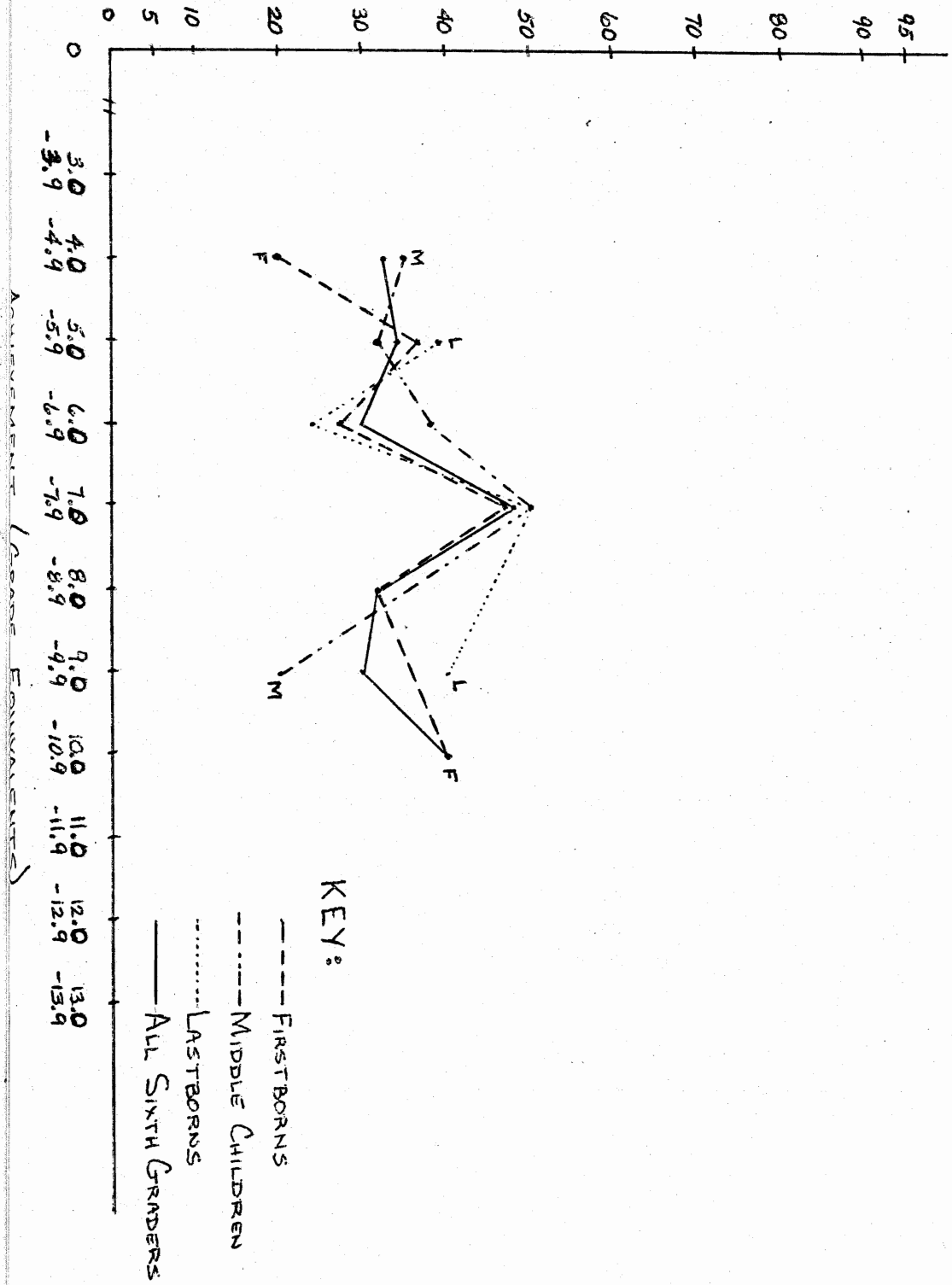
ADJUSTMENT (PERCENTILES)	90, 95		1M		1F		1M			
	80	1M				2M				
70		1L	1L	3F	1F	1L				
60		1M		1M	1M	2M		1M		
50		1L	1F	2F	1L	3F				
40	1F	1F	2M	2L	1L	3F	3F			
30		3M	2M	3M	2M	1M	3M			
20		4F	2F	2F	1L	1L	1F			
10	1M	2M	7M	2M		1M				
5	1F	1F	1F	2F						
	1M	1M	2M	1M	1M	2M				
	1L	1L	2L		1F	1F				
	1F	1F	2F							
	1M		1M							
		1L			1F					
		1F								
			1M							
		2L	1L							
	0.1- 3.9	4.0- 4.9	5.0- 5.9	6.0- 6.9	7.0- 7.9	8.0- 8.9	9.0- 9.9	10.0- 10.9	11.0- 11.9	12.0- 12.9

ACHIEVEMENT (GRADE EQUIVALENTS)

Key: F = First-borns; M - Middle Children; L = Last-borns

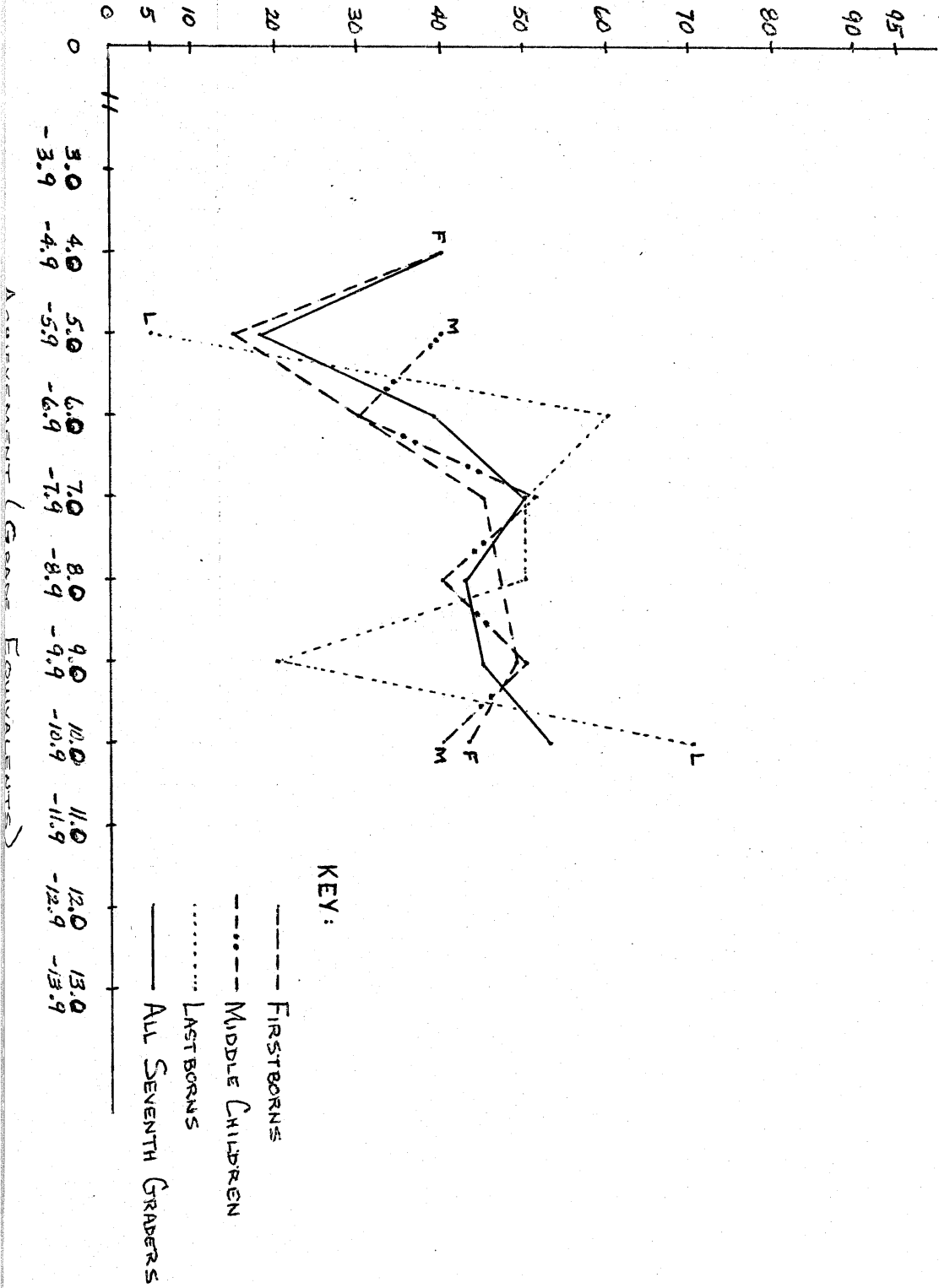
ADJUSTMENT (PERCENTILES)

GRAPH I : EFFECT OF BIRTH ORDER ON THE RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMENT FOR SIXTH GRADERS.



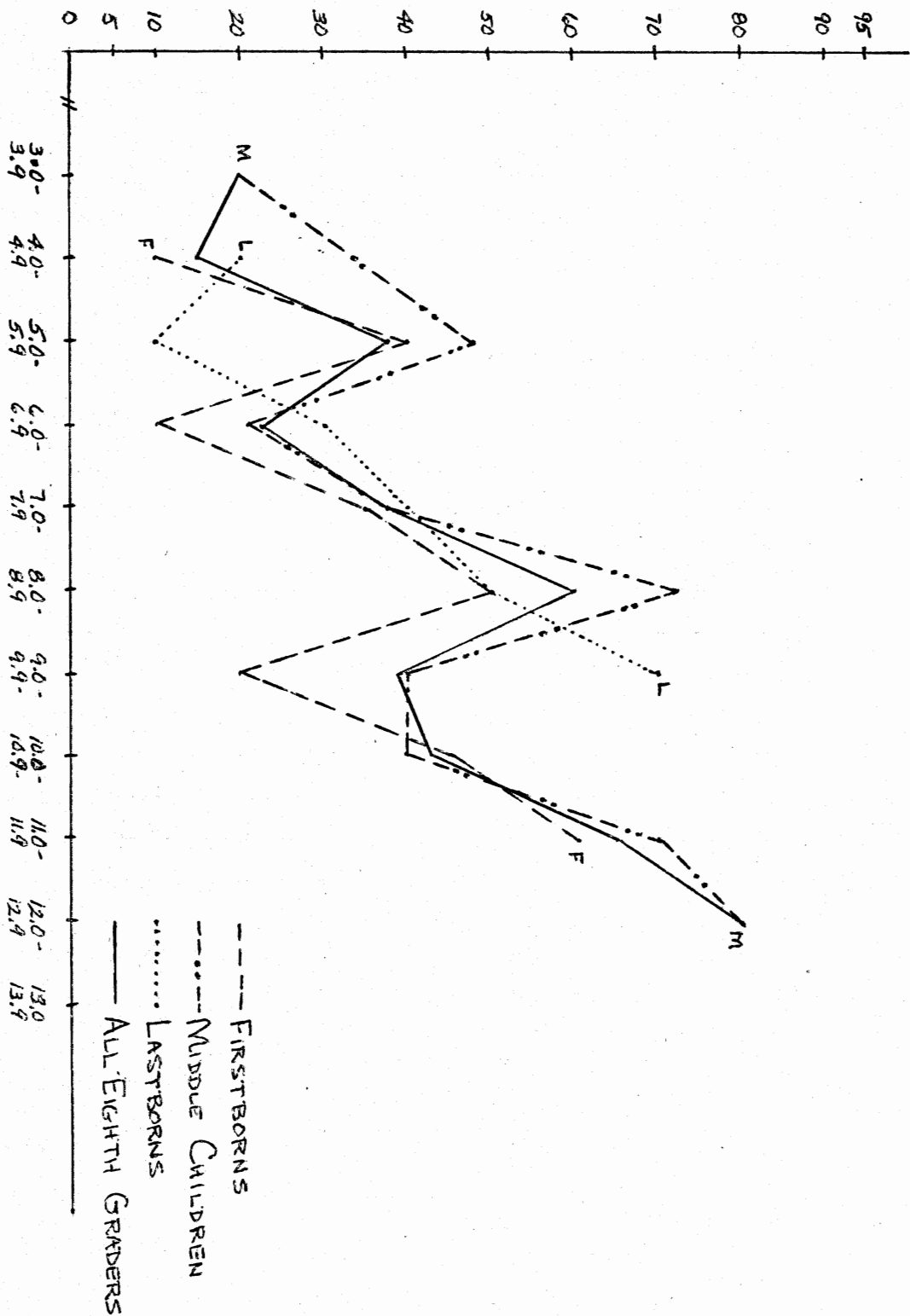
ADJUSTMENT (PERCENTILES)

GRAPH II : EFFECT OF BIRTH ORDER ON THE RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMENT FOR SEVENTH GRADERS.



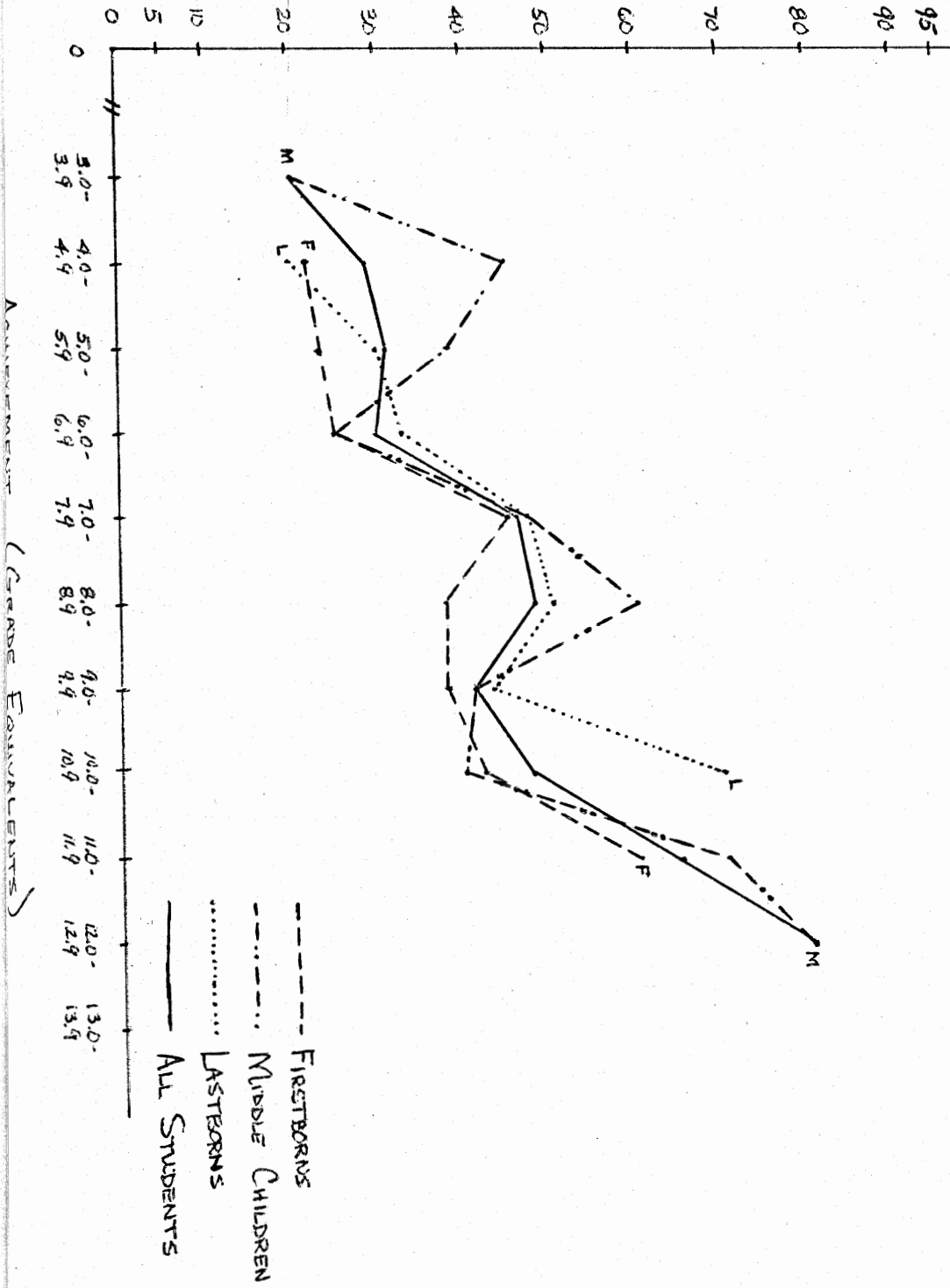


GRAPH III: EFFECT OF BIRTH ORDER ON THE RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMENT FOR EIGHTH GRADERS.



ADJUSTMENT (PERCENTILES)

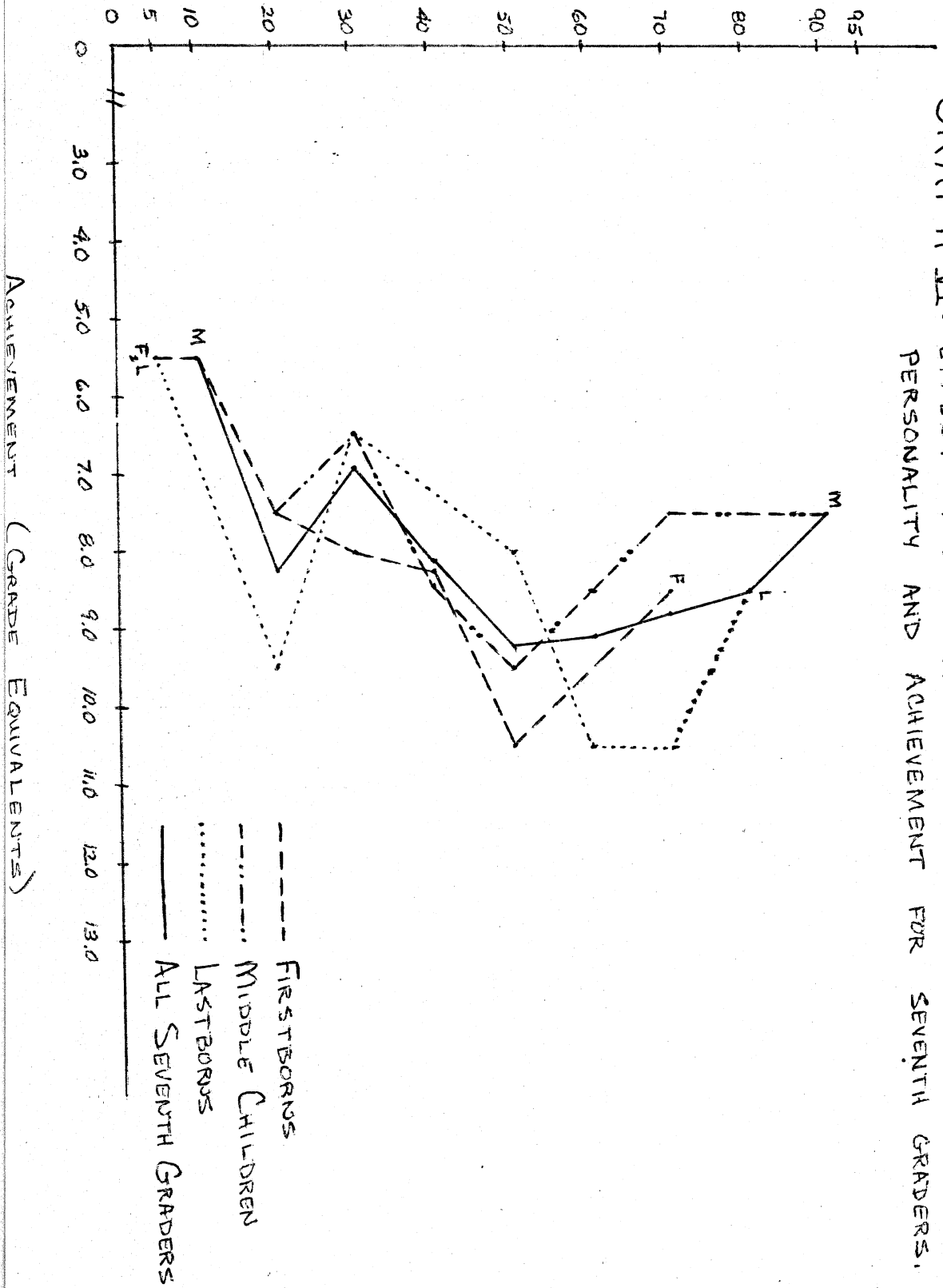
GRAPH IV: EFFECT OF BIRTH ORDER ON THE RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMENT FOR ALL STUDENTS.





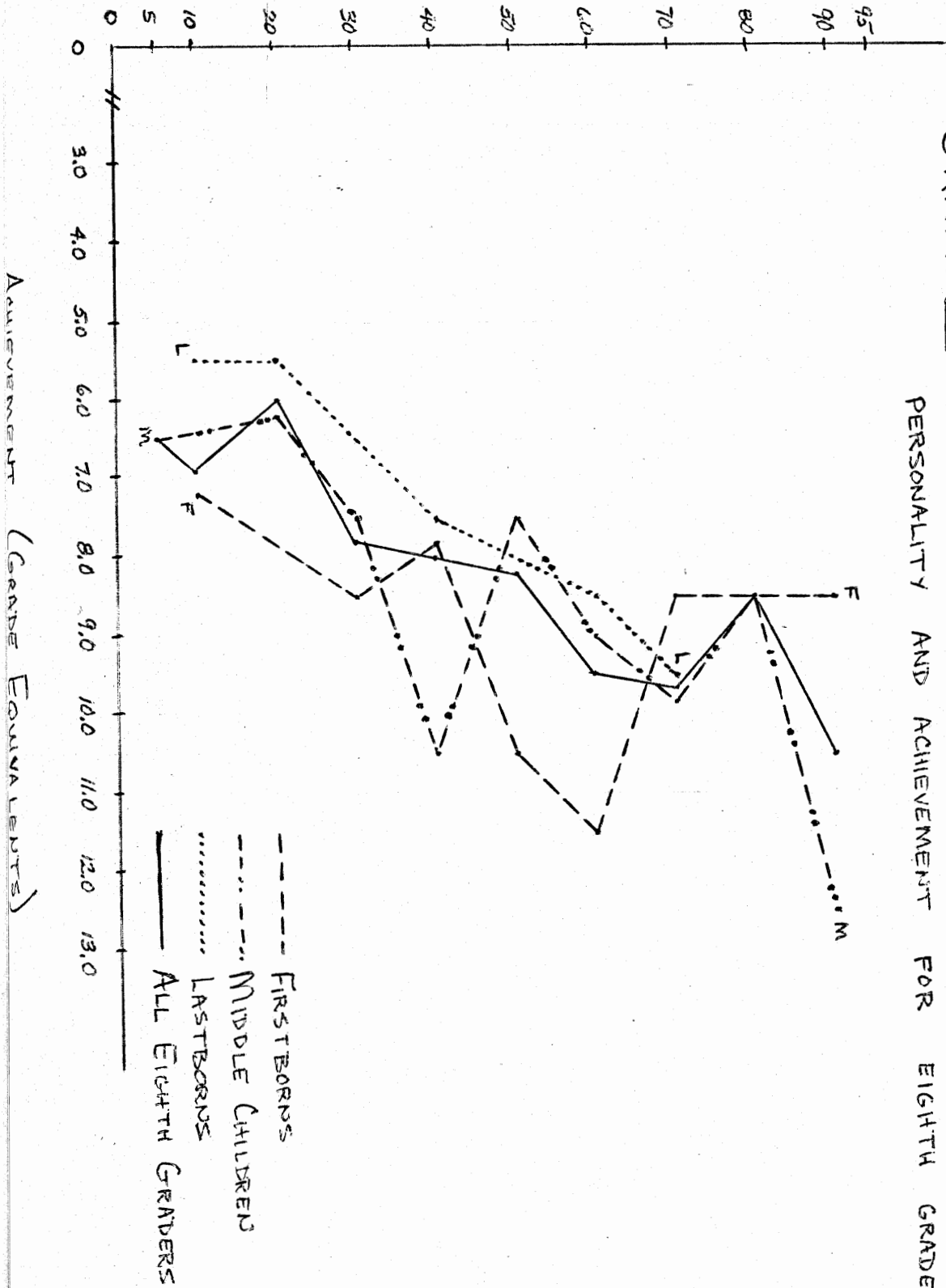
ADJUSTMENT (PERCENTILES)

GRAPH VI: EFFECT OF BIRTH ORDER ON THE RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMENT FOR SEVENTH GRADERS.



ADJUSTMENT (PERCENTILES)

GRAPH VII: EFFECT OF BIRTH ORDER ON THE RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMENT FOR EIGHTH GRADERS.



# ADJUSTMENT (PERCENTILES)

## GRAPH VIII. EFFECT OF BIRTH ORDER ON THE RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMENT FOR ALL STUDENTS.

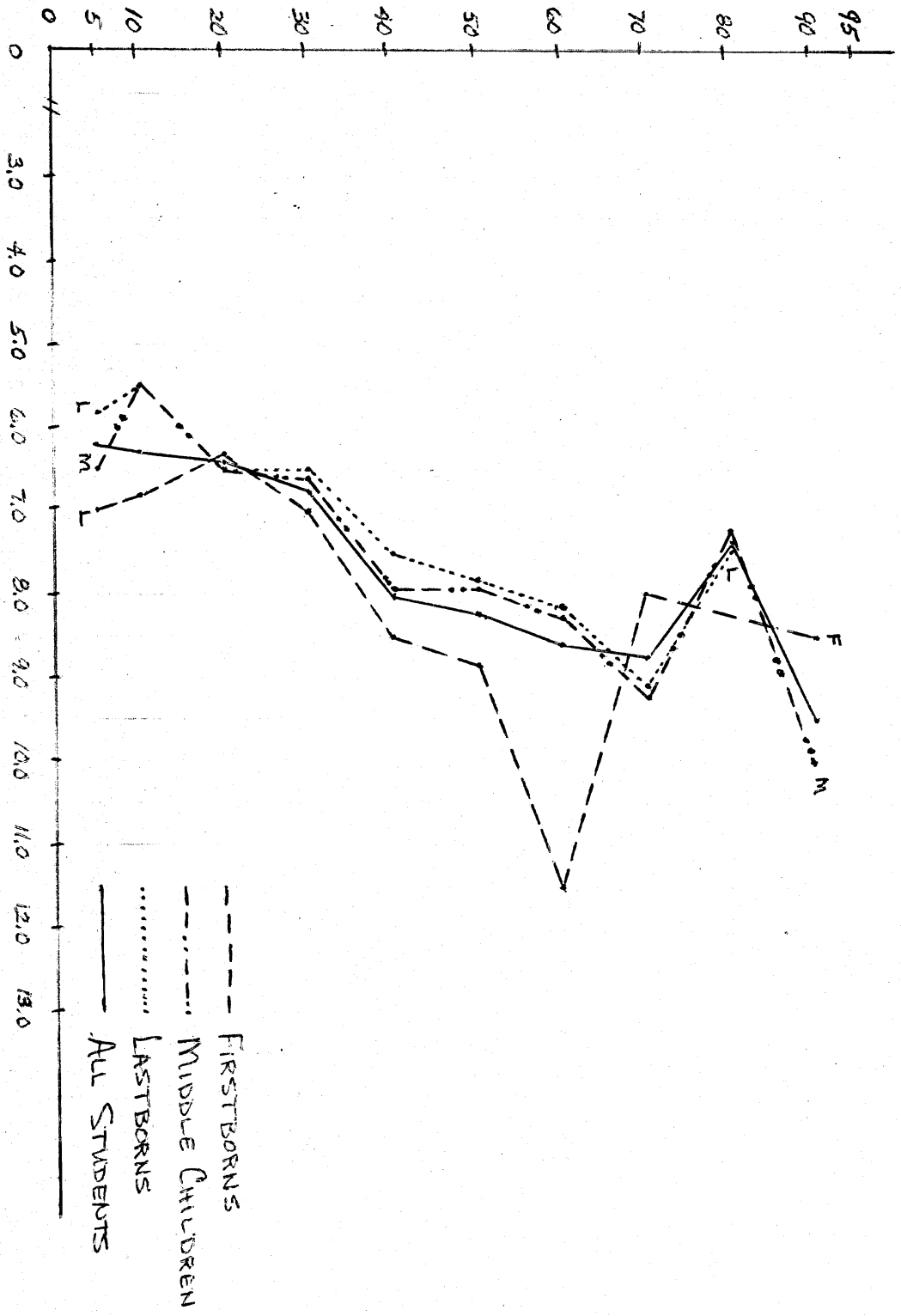


Chart Enclosed

## BIBLIOGRAPHY

- Bradley, R. W. "Birth Order and School-Related Behavior: A Heuristic View", Psychological Bulletin, Vol. 70, 1968, pp. 45-51.
- Conger, J. J. Adolescence and Youth, Harper and Row, N. Y. Pub., 1973.
- Falbo, Toni. "Does the Only Child Grow Up Miserable?", Psychology Today, May, 1976, pp. 60-65.
- Forer, L. K. Birth Order and Life Roles. C. C. Thomas, Pub., Springfield, Illinois, 1969.
- Harris, Irving. "Who Would Kill a President's Little Brother", Psychology Today, October, 1976, pp. 48-51, 103-104.
- Lobsenz, Norman. "Why You Are The Way Your Are", Seventeen, Vol. 32, February 1973, pp. 105, 218, 223.
- Miller, A. M. "How Birth Order Affects Your Personality", McCalls, Vol. 104, October, 1976, pp. 50-51.
- Sears, Maccoby, and Levin. Patterns of Child Rearing. Row, Peterson, and Co., Evanston, Illinois, 1957.
- Tarvis, Carol. "The End Of The IQ Slump", Psychology Today, April, 1976, pp. 69-74.
- Thompson, V. D. "Family Size: Implicit Policies and Assumed Psychological Outcomes", Journal of Social Issues, Vol. 30, #4, 1974, pp. 93-124.
- Thorpe, Clark, and Tiegs. California Test of Personality. Elementary Form, California Test Bureau, Los Angeles, California, 1953 Edition.
- Toman, Walter. Family Constellation: Its Effects on Personality and Social Behavior. Springer Pub. Co., N. Y., 1969.
- White, Robert W. The Enterprise of Living. Holt, Rinehart, and Winston, N. Y., 1972.