Purpose of the Study

The purpose of this study was to determine the effects of birth order, sex, and the interaction of birth order and sex on the self-concept as measured by the 29 mean scores of the Tennessee Self-Concept Scale (TSCS).

Procedures

This research is restricted to 168 students enrolled in Education, Family Life, and Psychology classes at Oregon State University. The control variables used in making the sample selection were sibling's sex, age spacing of the subject and subject's sibling, cultural background, socio-economic status, and subject's age.

These subjects were administered the TSCS during the Fall quarter of 1973 and were then divided into the following three main groups:
1) The Inflated Score Group - 37 subjects with false positive TSCS scores.

2) The Honest Group - 131 subjects with valid TSCS scores.

3) The Total Group - 168 subjects from the Inflated Score Group plus the Total Group.

Identification of subjects within these three groups allowed for separate evaluations of the subject's TSCS scores that were seriously inflated by defensiveness.

Statistical Design

The following null hypotheses were tested for significance at the .05 level on the Inflated Score Group, the Honest Group, and the Total Group:

1) There is no difference between mean scores for first borns and later borns for any of the 29 TSCS scores.

2) There is no difference between mean scores of males and females for any of the 29 TSCS scores.

3) There is no interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.

The level to be reached for significance for all statistical procedures was set at the .05 level. The statistical procedure used as a basis for retention or rejection of the null hypothesis was the $2 \times 2$ fixed model analysis of variance design which used the "F" statistic.
Findings

(A) **Inflated Score Group:** The null hypotheses were accepted.

(B) **Honest Group:** Null hypothesis one and three were accepted with null hypothesis two being rejected. The TSCS scores that resulted in having a significant sex effect for this group were the Positive - Identity Score, the Distribution Sub-Score 2, the Distribution Sub-Score 1, the Psychosis Score, and the Personality Disorder Score. The males had significantly higher Distribution Sub-Score 2 mean scores and Psychosis mean scores as compared to females. The females had significantly higher Positive - Identity mean scores, Distribution Sub-Score 1 mean scores, and Personality Disorder Mean Scores.

(C) **Total Group:** Null hypothesis one and three were accepted with null hypothesis two being rejected. The TSCS scores that resulted in having a significant sex effect for this group were the Positive - Identity Score, the Psychosis Score, and the Personality Disorder Score. The males had significantly higher Psychosis mean scores as compared to females. The females had significantly higher Positive - Identity mean scores and Personality Disorder mean scores as compared to males.

**Conclusions**

Although there was no significant birth order or interaction effect between birth order and sex, there was a significant sex
effect. This indicated that males had lower self-concepts than females as measured by the following TSCS scores: the Personality Disorder Score, the Psychosis Score, the Positive - Identity Score, and the Distribution Sub-Score 1. Males did have significantly higher Distribution Sub-Scale 2 mean scores than females.
THE EFFECTS OF BIRTH ORDER
AND SEX ON SELF-CONCEPT

by

Michael S. Nystul

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THE EFFECTS OF BIRTH ORDER
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CHAPTER I

INTRODUCTION

An individual's personality is in part a function of his particular birth order in his family. This notion was first proposed by Adler in 1927. It now appears that the psychological world may be experiencing a resurgence of interest in the effects of the family constellation on personality development. For example, Vockell and associates (1973) listed 272 studies done between 1967 and 1971 which showed birth order to have an effect on a variety of dependent variables. Adler's theory suggested that since the first born does not have a sibling to compete with for parental attention for a period of time, he will initially experience the feeling of being the center of attention. When the second child arrives, the focus of attention may shift to the new baby and the first born may develop the feeling of being dethroned. Adler (1931) noted that the dethroned first born often grows up with the feeling of being deprived. From this theory, a contemporary practitioner could infer that the dethroned first born would have a lower self-concept than the later born.

Combs and associates (1971) indicated that since the person's self-concept influences everything he does, it is very important that the psychological worker become acquainted with how the self-concept
develops. Hamachek (1971) provided an authoritative review of research and observations which indicated various psychological variables which appear to influence the development of the self-concept. For example, Hamachek (1971) noted:

A child's place in the family by way of birth can have a powerful effect on his attitudes towards himself and others. Our everyday observations have taught most of us that whether a child is the only child, or first born, or the second born, or the third born, and so on seems to make a difference in behavior.

For the last century (i.e., Galton, 1874), or perhaps longer, researchers have been attempting to determine the effects of birth order on personality development. Sampson (1965 clearly alluded to the relevance of birth order as a psychological variable:

Everybody, regardless of scientific bent, would undoubtedly be willing to agree that order of birth plays a role in influencing personality and behavior. The parent is cognizant of the fact that his own actions, anxieties, abilities, and perhaps aspirations change as a function of the sex of his child and the order of its birth. An adult who reflects upon his own childhood experiences may recall many instances of differential treatment as a function of his ordinal position.

Despite the apparent importance of birth order in human development, the use of birth order as a psychological variable must be approached with caution. Kammeyer (1967) indicated much of the research findings on birth order are "stumbled onto" by researchers who were initially interested in some other independent variable. Eisenmen (1970) warned that the analysis of the effects of birth order and sex differences on a dependent variable must be stated in terms of an interaction between birth order and sex. Eisenman's
research indicated that if an investigator were to evaluate the independent variables separately, he might get the erroneous impression that neither variable had any effect. Sampson (1965) in a review of the birth order literature, noted that the identification of the effect of birth order on personality development depends primarily on how well the variables of subject's sex, his sibling's sex, subject's and sibling's age spacing, family size, cultural and socioeconomic status are controlled by matching subjects or groups. The writer attempted to incorporate the warnings described above by Kammeyer (1967), Eisenman (1970), and Sampson (1965) in designing this study.

**Purpose of the Study**

The purpose of this study was to investigate the effects of birth order, sex, and the interaction of birth order and sex on the self-concept as measured by the 29 scores of the Tennessee Self-Concept Scale (TSCS). A corollary of this study was to present a Family Interaction Theory which could provide a reference source to discuss any alternate hypothesis of this study.

**Statement of the Problem**

The problem of the study was to examine the difference between:

1) the 29 self-concept scores of the TSCS of selected first born students and later born students at Oregon State University.
2) the 29 self-concept scores of the TSCS of selected male and female students at Oregon State University.

3) the 29 self-concept scores of the TSCS of selected first born males, first born females, later born males, and later born females who are students at Oregon State University.

Definition of the Terms

For the purposes of clarity and consistency, the following definitions were applied whenever the terms appeared:

Self-Concept:

A) Conceptually Defined: The writer adopted the definition cited by Pietrofesa, Leonard, and Van Hoose (1972) that conceptually defined self-concept for the purposes of this study.

The self-concept, a hypothetical construct encompassing all of the values, attitudes, and beliefs toward one's self in relation to the environment, is a composite of numerous self-percepts which influence and to a great degree determine perception and behavior (Pietrofesa, 1969). Anderson (1965) says that, "Everyone has an image or a concept of himself as a unique person or self different from every other self. This concept pertains to one's self both as a physical person and as a psychological person - i.e., each one has a physical self-image and psychological self-image.

This definition was in agreement with Fitt's (1965) definition of self-concept as it applied to the TSCS.

B) Operational Definition: Self-concept was operational defined for this study as the 29 scores of the TSCS as described in Appendix A.
Self-Esteem:

A) Operational Definition: Self-esteem was operationally defined according to the particular instrument that measured it in the study cited.

B) Conceptual Definition: Self-esteem was conceptually defined as one dimension of self-concept which pertains to a general feeling of self-worth.

Birth Order: Birth order as defined by Warren (1966) is:

... the sequential position of a person among his or her siblings with respect to order of birth.

Control Variables: The control variables are: sibling's sex, age spacing of subject and subject's siblings, cultural background, socio-economic status, and subject's age.

Independent Variables: The independent variables are birth order and sex.

Dependent Variables: The dependent variable is self concept as measured by the 29 scores of the TSCS.

Research Hypothesis

The following research hypothesis were examined during the course of this study:

1) Birth order is related to self-concept.
2) Sex is related to self-concept.
3) The interaction of sex and birth order is related to self-concept.
Limitations of the Study

This study has, among others, five major limitations.

1) Although the TSCS can indicate 29 self-concept scores, it does not measure all self-concept areas. For example, the TSCS does not give a score for the creative self (the self as it pertains to creative expressions).

2) The results of this study were interpreted to be true for only the particular population type defined by the parameters used in selecting subjects for this sample.

3) All siblings born after the first born were placed in the later born category. This study therefore was unable to relate to characteristics of the middle and last borns.

4) As in all research, this study may include extraneous variables that could have obscured the effects of the independent variables on the dependent variables. This was especially true for this study since the dependent variable was self-concept, a nebulous psychological construct.

5) Because of the inherent nature of psychological constructs such as self-concept, quantitative measurement was limited to the sensitivity of the criterion instrument.

Significance of the Study

Research reviewed by the writer which examined the effects of birth order and sex on self-concept has to this point been limited
in at least two ways. First, the studies examined did not control for all birth order variables deemed significant by Sampson (1965) in his extensive and authoritative review of the birth order literature. Second, studies examined have generally tested the effects of birth order on self-esteem, with self-esteem defined according to instruments used to measure it in the particular study.

This study and the only other study which investigated the effects of birth order on the TSCS Performance (Curry and associates, 1971) extended the dimensions of self-concept as they related to birth order to include the 29 scores of the TSCS. Curry and associate's (1971) study differed from the present in two ways. First, this study's sample was drawn from college students at Oregon State University and Curry and associates (1971) sample was selected from the inmates of three correctional institutions from the state of Tennessee. Second, Curry and associates (1971) did not impose any of the control variables imposed on sample selection in this study.

Summary

This chapter presented an overview of the study by relating to the following areas:

1) A brief review of the research on birth order as a psychological variable was presented with reference to Adler's theoretical position.
2) The purpose of the study, statement of the problem, and research hypotheses were described to determine the scope and direction of the study.

3) The fundamental terms used in the study were defined to establish a clear and consistent means of assimilating terminology.

4) The limitations and significance of the study were provided to determine areas of weakness and strengths in the study.
CHAPTER II

REVIEW OF THE LITERATURE

This chapter review the literature from three perspectives:

1) Studies pertaining to the effects of birth order and sex on self-concept and self-esteem.

2) Studies described in terms of a Family Interaction Scheme that could provide a reference to discuss the alternate hypotheses of this study.

3) Studies that were used to determine the parameters established for the control variables.

Self-Concept, Self-Esteem, Birth Order, and Sex

This section describes research and observations which related self-concept and self-esteem to birth order and sex. Since each researcher used a different instrument to measure self-concept and self-esteem, the conceptual definitions of both self-concept and self-esteem vary from study to study. Each study was also represented by a different population. The various conceptual definitions and populations used should be considered when generalizing from the results of two or more of these studies.

Combs and associates (1971) stated that:

The most important single factor affecting behavior is the self-concept. What people do at every moment of their lives is a product of how they see themselves and the situations they are in. While situations may change from moment to moment or place to place, the beliefs that people have about themselves are always present factors in determining their behavior.
Hamachek (1971) noted numerous studies during the last twenty years that indicated that the self-concept influences a wide array of human functions. For example, Wattenberg and Clifford (1964) found that a kindergarten student's self-concept was a better predictor of how he might fare in his reading skills two and a half years later than were measures of intelligence. Hamachek (1971) concluded that this evidence suggested that a low or negative self-concept can have an adverse effect on a child's school performance at an early age. As a result of these different influences by the self-concept, many studies have been conducted to determine under what conditions self-concept development occurs.

Until recently the research has indicated a confused relationship between birth order and self-esteem. Sampson (1965), in an authoritative review of the early literature on birth order, noted a series of studies that failed to establish a clear relationship between birth order and self-esteem. Zimbardo and Formica (1963) using male college undergraduates, noted that first borns had lower self-concept scores than later borns. Stotland and Cottrell (1962) made observations in their experimental settings which implied that first borns and only children had lower self-esteem than later borns. In contradiction to these findings, Stotland and Dunn (1962) using both male and female undergraduates, found no difference in self-esteem among first borns, later borns, and only children.
Three more recent studies support the findings of Stotland and Dunn (1962). Curry, Manning, and Monroe (1971) showed no relationship between self-esteem as measured by the Total Positive Tennessee Self Concept Scale score and birth order for juvenile offenders in Tennessee that came from broken homes. Curry and associates (1971) did find at the .05 level that later borns did have self perceptions that were significantly more confused, contradictory, and conflicted than first borns as indicated by the Net Conflict and True False TSCS scores. Bartelt (1972) conducted a study involving 129 first and second born Caucasian sibling pairs attending high school which indicated that birth order had a nonsignificant effect on self-esteem, and males had a significantly higher self-esteem than females. Bartelt (1972) defined self-esteem in terms of responses to a questionnaire which related the "self" to "satisfaction with money," to decision-making, and to indicators of leadership. Vockell, Felker, and Miley (1973) listed a study by Purpura (1971) which showed that 122 first born and 189 later born high school students did not have self-esteesms that were significantly different as measured by the Self-Esteem Scale of the College Attitude Questionnaire.

Another series of current studies (Rosenberg, 1965; Coopersmith, 1967; Platt, Moskalski, and Eisenman, 1968; Sears, 1970; and Eisenman, 1970) contradicted the studies described above that indicated that birth order does not have a significant effect on self-esteem and showed first borns and only children to tend to have higher self-esteem than later borns.
Two recent studies in this series investigated the types of relationships established. Eisenman (1970) found for his sample composed of 278 college students that there was a significant interaction effect at the .01 level between birth order and sex indicating that later born females had a significantly lower self-concept than first born males. The birth order and sex independent variables analyzed separately each showed a nonsignificant effect on self-esteem. Eisenman (1970) defined self-esteem according to Semantic Differential Scale ratings of real self and self ideal. In contradiction to these findings, Sears (1970) did not find a significant birth order-sex interaction effect in his follow-up study involving 160 male and female children 12 years of age, from mixed socio-economic backgrounds. Sears' (1970) study did indicate a significant birth order effect at the .01 level with only and first born boys having a significantly higher self-concept than middle and youngest boys. Sears defined self-concept as a positive versus negative self-evaluation as measured by a self-concept inventory developed by Sears (1963).

The Family Interaction Scheme

A series of research findings and theories contributed to a Family Interaction Theory proposed by Kammeyer (1967) that can be used to explain why birth order and sex could effect self-concept development. The essence of Kammeyer's theory is that any differences which appears between children of different birth orders must
be the result of their different interaction-social learning experiences.

Kammeyer (1967) offered an organizational scheme that was modified to accommodate research findings and theories relevant to the Research Hypotheses of this study. This organizational scheme, as presented in Figure I, was restricted to a description of the family interactions of first borns and the family interactions of male and female first borns. Any relationships established in the Family Interaction Scheme were restricted, in that the theories and studies are based on different populations and different assessment instruments and do not directly relate to the later born male or female.

Figure I. Family Interaction Scheme

1) Social Learning Experiences of the First Born
   A. First born-parent interaction
   B. First born-sibling interaction
   C. First born-parent and sibling interaction

2) Social Learning Experiences of the First Born Male
   A. First Born male-parent interaction
   B. First born male-sibling interaction
   C. First born male-parent and sibling interaction

3) Social Learning Experiences of the First Born Female
   A. First born female-parent interaction
   B. First born female-sibling interaction
   C. First born female-parent and sibling interaction
1-A) Conners (1963) suggested that there is a continuum of increasing deprivation of affection from the only child to the first and thence to the second born. Similar processes have been indicated by MacArthur (1956), Rosen (1961), and Schooler (1961). They have explained that this relationship was due to the first born having greater access to the parent and therefore becoming more sensitive to them. Coopersmith (1967) and Sears (1970) suggested that whether maternal warmth is measured in the child's early life or when he reaches age 12, there is a tendency for warm and accepting mothers (and fathers) to have children with high self-esteem. By combining the findings from these two studies there is the indication that later borns could have a tendency to have less maternal warmth and therefore lower self-esteem than the first borns.

Koch (1954) found that parents have a tendency to spoil the first, show an over-all preference for the first, and pay more attention to the first. Hilton (1967) reported a similar finding in that there appeared to be greater maternal interference with first born and only children than with later borns. Hilton noted that mothers of first borns and only children were rated as "more involved" were more likely to initiate work on a puzzle task, and give more task-oriented suggestions and direct help to the first born child.

1-B & C) Bossard and Boll (1955) reported that the younger children (later borns) were ignored as the family adjusted its conversation level to the older child. This verbal advantage
by the older child related to Sears' (1970) competition theory.

Sears noted that:

The hard realities of family life are that parents have only so much time and energy to devote to their children. Hence, the more children there are, the greater the competition for parental attention— or for the kinds of admiration and expressions of acceptance which seem to influence self-concept. The more siblings there are, the more opportunity there is for derogation. Further, the battle is unequal, for a first child has a period without competition, while later children not only have competition from the beginner, but have the everlasting handicap of being smaller, younger, less effective than their older competitors, and at any one time may have less talent for making themselves seem worthy of admiration within the family frame of reference. Thus, it is to be expected that only and oldest children would have better self-concepts than middle and youngest ones, and that the larger the family, the poorer would be self-concepts regardless of ordinal position.

2-A) Cushna (1966) found that mothers of 16 - 19 month old children from middle class families were more involved in influencing performance of first born children but in different ways. When the mothers were asked to determine their child's performance on a number of tasks, the mothers were more supportive and cautious in directing their first born boys, but more demanding, exacting, and intrusive towards first born girls.

2-B&C) Koch (1956) noted that a first born female (FBF) with a younger brother had higher conformity needs than the younger brother. Koch theorized that the sibling who differed from the FBF in so basic a character as sex may challenge her worth more than a same sex sibling would challenge her sense of worth. Koch's
study indicated that this challenge contributed to the FBF scoring highest on a jealousy scale as compared to all possible birth order - sex matchings in siblings from families that have two siblings.

Koch (1956) theorized that this high jealousy level contributes to a sex rivalry within the FBF, who has a younger brother, that would interfere with her parental identification process. It appears that since the first born male (FBM) was not as jealous as the FBF, he would not be as effected by sex rivalry and would therefore have less interference in his identification process. Since Miller (1970) and George (1970) indicated that individuals who identify strongly with their parents and significant others tend to have better self-concepts, it would follow that the FBM would tend to have a higher self-concept than the FBF.

3-A) Rothbart (1971) noted that for females with two children of the same sex, mothers exerted differential pressure on the FBF and second born female. The mothers were more likely to tell the FBF that she was incorrect, showed a tendency to be more likely to criticize her, and show more anxious intrusiveness toward the FBF as compared to the second girl. Rothbarth's study also indicated that a mother was more likely to exert pressure for achievement and performance on the FBF as compared to the FBM. Referring back to Coopersmith (1967) and Sears (1970) that related maternal warmth and acceptance to a high self-esteem, it appears that the FBF would tend to have a lower self-esteem than the FBM.
3-B & C) The discussion under 2-B & C applies here.

The Control Variables

From this review of the literature on birth order, the reader can appreciate the importance researchers attach to controlling for the variables that influence the effects that birth order and sex have on the self-concept. The research and observations described in this section influenced the following parameters established for sample selection: race, social-economic status, age of the subjects, family size, sex of the siblings, and sibling age spacing.

1) Race: Johnson (1970) compared a group of 50 Negro freshman at a predominately Negro college with a group of 50 Caucasian freshman at the college. The Negro students had significantly higher Total Positive TSCS scores indicating a higher self-esteem than the Caucasian students. The difference was explained as a result of "new Black pride". Bartee (1967) compared the self concepts of a group of 100 disadvantaged Negro students at a predominately Negro college in Texas with 100 disadvantaged Caucasian students at a Texas State University. All subjects were administered the TSCS. The Negro students had significantly lower TSCS Self Criticism scores and significantly higher TSCS Conflict and Variability scores than did the Caucasian students. Since the Negro population had several TSCS scores which were significantly different than the Caucasians, the investigator limited this study's sample to Caucasians.
2) Socio-Economic Status: Thompson (1972) noted three studies (Flemister, 1967; Martin, 1967; and Walton, 1966) that all utilized the TSCS with 16-21 year old youths from the Chattanooga, Neighborhood Youth Corps. These youths were members of families whose annual income was less than $3,000 and were therefore determined "disadvantaged". The youths were male and female and the racial composition of the group was not specified. Thompson (1972) compared the TSCS scores of the Flemister, Martin, and Walton studies with the norm group established for the TSCS by Fitts (1965):

A) Total Positive (P) Scores:
   a. Flemister's Total P scores were .25 standard deviations below the norm group median.
   b. Walton's Total P scores were .75 standard deviations below the norm group median.
   c. Martin's Total P scores were 1.25 standard deviation below the norm group median.

B) General Maladjustment (GM) Score:
   Martin's GM score was 1.5 standard deviations above the norm group median.

C) Psychosis (Psy) Score:
   Martin's Psy score was 1.4 standard deviation above the norm group median.

D) Personality Disorder (PD) Score:
   Martin's PD score was 1 standard deviation above the norm group median.
E) **Personality Integration (PI) Score:**

a. Martin's PI score was .60 standard deviations below the norm group median.

b. Flemister's PI score was 1 standard deviation below the norm group median.

F) **Distribution (D) Score:**

Martin's D score was 1 standard deviation below the norm group median.

These studies indicate that the economic condition of the family appears to be related to some TSCS scores. Because of this, this study limited its sample to people from upper, upper-middle, and middle class families as determined by Hollingshed's "Two Factor Index of Social Position" (1958). Refer to Appendix B for a description of Hollingshed's "Two Factor Index of Social Position".

3) **Age of the Subjects:** Fitts and associates (1971) in a review of the literature of self-concept theories concluded that "It is clear, however, that by the earliest ages in which the TSCS is applicable (11 or 12 years) the self-concept is already a relatively stable entity." In fact, many studies which have investigated the effectiveness of experimental treatment programs aimed specifically at obtaining self-concept improvement (Boyle, 1967; Hammer, 1968; and Davis, 1969) have demonstrated that the self-concept is not readily changed. To control for experiences that might effect self-concept development, this study restricted its subjects to persons between the ages of 18 to 22.
4) **Family Size:** Sears (1970) found that the larger the family, the lower the self-concept for the siblings. Due to the small sample size, Sears could not determine the degree of interaction between family size and self concept.

Damrin (1949) found 13 to 18 year old Caucasian girls to score higher on the Bell Adjustment Inventory when they came from families of less than five. Because of the apparent effect that family size has on the development of the self-concept, this study included only subjects that were raised in families that had from two to four siblings.

5) Koch (1956) noted in a study involving five and six year olds from two-child urban families, that first borns with opposite-sex siblings tend to be more rivalrous and hostile than first borns with same sex siblings. Atlus (1966) observed that college girls from two sibling families tend to check more disparaging adjectives about herself if she has an older brother than if she has an older sister. Because of these factors, this study has limited its subjects to those who have opposite-sexed siblings.

6) **Sibling's Age Spacing:** Toman (1961) noted after 10 years of clinical psychological work with over 400 persons, that if the siblings are six or more years apart in age, they show a tendency of growing up like single children. Therefore, in determining the family constellation of the subject's family, this study did not include as a sibling in the family any sibling that was six or more years older or younger than another sibling. This standard was used to determine the size of the family and if the family
had both a male and female sibling.

7) Social Science College Sample: Although this was not a control variable, it was included in this section since it related to the sample composition of this study. A series of studies which used the TSCS indicated that the self-concept of students in the Social Sciences (i.e., Education, Psychology, and Family Life) are not significantly different than the self-concepts of other college students (Young, 1970; Soffen, 1968; and Furr, 1968). For example, Furr's (1968) study included a control group composed of 108 students enrolled in Introductory Psychology classes and 137 students enrolled in Physical Education classes. A comparison of the TSCS scores for both groups showed that the Physical Education group scored slightly higher on the TSCS than the Psychology group.

Soffen's (1968) study included two groups of classes of undergraduate Educational Psychology students. The experimental group of classes was taught in a manner that emphasized learning about the dynamics of the self-concept. The control group of classes was taught in the traditional manner which did not emphasize the area of self-concept. The TSCS was given to both groups at the beginning and end of the term. A comparison of the TSCS scores for both groups showed that the experimental group did not score significantly higher than the control group at the end of the term. The relative stability of the self-concept was also indicated by Boyle (1967), Hammer (1968) and Davis (1969). As was mentioned
earlier, these researchers investigated the effectiveness of experimental treatment programs aimed specifically at obtaining self-concept improvement and concluded that the self-concept as measured by the TSCS is not readily changed.

The results of these studies described above indicated that knowledge of the self-concept as would be expected from psychologically sophisticated students did not effect the nature of the scores on the TSCS. Therefore, the Social Science students used in this study (Education, Psychology, and Family Life students) should not have significantly different TSCS scores than college students from other fields.

Summary

This review of the literature has summarized selected research and observations dealing with the effect of birth order and sex on self-concept and self-esteem. Self-concept and self-esteem were operationally defined according to the criterion instrument with self-esteem being conceptually defined as one dimension of self-concept. The results of these studies seem to contradict each other. One trend showed a confused relationship between birth order and self-esteem; another trend showed birth order to have a nonsignificant effect on self-concept and self-esteem; and another trend showed birth order to have a significant effect on self-esteem and self-concept with first borns having significantly higher self-esteem and self-concept than later borns. The contradiction in these trends could have been due to the different instruments
used to measure self-concept and self-esteem and the different populations tested in each study. Observations and studies that related to parameters for sample selection were also discussed. A Family Interaction Scheme was presented with reference to studies and observations that could provide a reference to discuss the alternate hypotheses of this study.
CHAPTER III

PROCEDURES AND METHODOLOGY

The methods and procedures of the investigation described in this chapter include a description of the sample, the subject's groupings, statistical procedures used for analysis of the data, and the instrument used.

Sample

The subjects in this study fell within the following parameters as determined by the control variables:

1) Students in courses offered by the Department of Psychology, Family Life, and Education at Oregon State University.

2) Upper, upper middle, and middle class Caucasians as determined by Hollingshed's (1958) "The Two Factor Index of Social Position" (type I, II, and III).

3) Persons between the ages 18 to 22.

4) Persons from families with two to four siblings of which there is at least one girl and one boy. Any sibling six or more years older or younger than another sibling was not considered as a sibling in the family.

5) All subjects were nonpaid volunteers.

Selection of the Subjects

During the Fall term of 1973, students in Psychology, Education, and Family Life classes were asked to cooperate in a research
project. These students were asked to do the following three things:

1) Sign a statement of consent indicating their willingness to participate in the study. The writer mentioned that the procedures indicated in the statement of consent would be modified in that the self-concept scale would be given during the present class period and not in a week (refer to Appendix C for a copy of this consent statement).

2) Respond to the questions which requested information relating to their family background (refer to Appendix C for a copy of the Family Background Information questions).

3) Respond to the questions on the Tennessee Self-Concept Scale (TSCS).

The writer stressed that the students' time involvement, including TSCS score interpretations, would be about twenty minutes. In each case, the majority of the students volunteered to participate in the project. The writer than passed out the Family Background Information form and Consent Statement.

After the students filled out the Family Background form and Consent Statement, they were given instructions on the TSCS as a self-administered instrument and were requested to follow the instructions enclosed in the booklet. One additional instruction was added, that, if after completing the TSCS, the student felt that he had not answered the questions honestly, he should place an "X" at the bottom of the answer sheet. The writer pointed out that the test results would be confidential; scores would be available to
the students on an individual basis before the term was finished. The procedure described above was continued until 394 students were administered the TSCS. Out of this group, 226 students were eliminated from the study by the control variables. One hundred sixty eight subjects (85 Education students, 31 Family Life students, and 52 Psychology students) fell within the parameters established.

**Subject Groupings**

The 168 subjects in this study were divided into three main groups:

1) The Inflated Score Group - students with false positive TSCS scores.
2) The Honest Group - students with valid TSCS scores.
3) The Total Group - students from the Inflated Score Group plus the Honest Group.

Identification of subjects within these three groups allowed for separate evaluations of the subject's TSCS scores that were seriously inflated by defensiveness. The subject's TSCS scores were determined defensive if their TSCS Defensive Positive (DP) score was 65 or higher or their Self Criticism score was 28 or lower. The procedure described above was in agreement with Fitt's (1973) recommendation that subjects who reported Defensive Positive (DP) scores of 65 or above or Self Criticism (SC) scores of 28 or below should be treated separately, because their TSCS scores were probably seriously inflated by defensiveness.
Each of the three main groups were further divided into the following four sub-groups: First born males (FBM), first born females (FBF), later born males (LBM), and later born females (LBF). For the purpose of clarity and consistency, the four sub-groups were represented in the following matrix.

<table>
<thead>
<tr>
<th></th>
<th>FBM</th>
<th>FBF</th>
<th>LBM</th>
<th>LBF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Three Main Groups:

1) Inflated Score Group - (subjects with false positive TSCS Scores)

All subjects who had a TSCS Self Criticism score of 28 or lower or a TSCS Defensive Positive score of 65 or higher were placed in this group. No subjects placed an "X" at the bottom of their TSCS answer sheet to indicate that they made responses that were not honest; so no need existed to add to the Inflated Score Group. The subjects in the four Inflated Score sub-groups were distributed as follows:

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>N = 8</td>
<td>N = 9</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>N = 4</td>
<td>N = 16</td>
</tr>
</tbody>
</table>

2) Honest Group - (subjects with valid TSCS scores)

The Honest Group consisted of all subjects who were not in the Inflated Score Group. The subjects in the four sub-groups of the
Honest Group were distributed as follows:

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST</td>
<td>N = 24</td>
<td>N = 29</td>
</tr>
<tr>
<td>BORN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LATER</td>
<td>N = 28</td>
<td>N = 50</td>
</tr>
<tr>
<td>BORN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3) Total Group -

The Total Group consisted of all subjects from the Inflated Score Group plus the subjects from the Honest Group. The subjects in the four sub-groups of the Total Group were distributed as follows:

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST</td>
<td>N = 32</td>
<td>N = 38</td>
</tr>
<tr>
<td>BORN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LATER</td>
<td>N = 32</td>
<td>N = 66</td>
</tr>
<tr>
<td>BORN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Null Hypothesis**

The following null hypothesis were tested at the .05 level of significance for the Inflated Score Group, the Honest Group, and the Total Group:

1) There is no difference between mean scores for first borns and later borns for any of the 29 TSCS scores.
2) There is no difference between mean scores of males and females for any of the 29 TSCS scores.

3) There is no interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.

**Statistical Procedures**

The level to be reached for significance for all statistical procedures was set at the .05 level. The statistical procedure used as a basis for retention or rejection of the null hypothesis was the 2 x 2 fixed model analysis of variance design which used the "F" statistic. The Oregon State University Computer Center provided statistical calculations utilizing the BMD05V system from the UCLA Bi-Med program.

**The Instrument**

William H. Fitts began developing the TSCS in 1955. The original purpose of the scale was to serve as an assessment instrument for Mental Health. Currently, the TSCS has proved useful in a wide range of assessments involving over 500 studies (Fitts, 1965). Fitts (1965) provided information relating to the developing and norming of the TSCS.

In the original development of the scale, the first step was to compile a large pool of self-descriptive items. The original pool of items was derived from a number of other self concept measures including those developed by Balester (1956) and Taylor (1953). Items were derived also from written self-descriptions of patients and nonpatients. After considerable study, a phenomenological system was developed for classifying items on the basis of what they themselves were saying ...
After the items were edited, seven clinical psychologists were employed as judges to classify the items ... They also judged each item as to its positive or negative content. The final 90 items utilized in the scale are those items where there was perfect agreement by the judges.

The standardization group from which the norms were developed was a broad sample of 626 people. The sample included people from various parts of the country, and age ranges from 12 to 68. There were approximately equal numbers of both sexes, both negro and white subjects, representatives of all social, economic, and intellectual levels and educational levels from sixth grade through the Ph.D. degree. Subjects were obtained from high school and college classes, employers at state institutions and various other sources ...

Data collected by Sundby (1962) with high school students, by Gividen (1959) with army recruits, by Hall (1964) with teachers and by Fitts with negro nursing students show group means and variances which are comparable to those of the norm group. The evidence so far suggests that there is no need to establish separate norms by age, sex, race, or other variables. However, the norm group does not reflect the population as a whole proportion to its national composition. The norms are over represented in numbers of college students, white subjects, and persons in the 12 to 30 year bracket.

Validity and Reliability

1) Predictive Validity: Fitts and associates (1971) reported that Rengarder (1969) administered the TSCS to Negro women who dropped out of a training program and found their P scores to be .5 standard deviations lower than the Negro women who continued in the program. Fitts and associates (1971) also noted that Hendron (1970) found that school dropouts had P scores 1.5 standard deviations below the median, SC scores 1 standard deviation above the median, V scores .5 standard deviations above the median, and D scores .5
standard deviations below the median, based on the norm group for
the TSCS.

2) **Concurrent Validity:** Fitts and associates (1971) noted two studies
that related to the concurrent validity of the TSCS. Bealmer and
associates (1965) found a clear positive relationship between the
P score on the TSCS and identity represented in the "Who am I"
test which is an unstructured test that allows the subject to de-
scribe himself completely in his own words. Gay's (1966) study involv-
ing eighth grade students found that the P score on the TSCS was
significantly correlated with another measure of self concept, the
Bell's Index of Adjustment and Values.

Fitts (1965) noted a study by McGee (1960) that correlated the
TSCS with all profile variable scores on the Minnesota Multiphasic
Personality Inventory based on tests from 102 psychiatric patients.
Most of the TSCS scores correlated with MMPI scores in ways one would
expert from the nature of the scores (Fitts, 1965). For example,
the Total P (self-esteem indicator) had the following moderately
high Pearson r correlations with these MMPI scores: -.52 for D
(depression); -.62 for Pt (psychasthenia); -.58 for SC
(Schizophrenia); -.64 for Si (Social Introversion).

**Construct Validity:** Fitts and associates (1971) indicated
that when George (1970) asked subjects to respond to TSCS items in
terms of how they would like to be, in contrast to their actual
self-concepts, the SC scores dropped about 1 standard deviation.
The DP score increased about 1 standard deviation. These effects
offered evidence of the sensitivity of these two scores to defensive distortion.

**Content Validity:** One basic requirement of content validity was that the test items be logical and meaningful. Seven Clinical Psychologists reviewed each item on the TSCS and judged the possible test items. An item was only retained in the TSCS if there was unanimous agreement by the psychologists (Fitts, 1965).

**Reliability:** Fitts (1965) indicated means, standard deviations, and reliability coefficients for the TSCS scores used in this study as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Self-Criticism</td>
<td>35.54</td>
<td>6.70</td>
<td>.75</td>
</tr>
<tr>
<td>2) T/F</td>
<td>1.03</td>
<td>.29</td>
<td>.82</td>
</tr>
<tr>
<td>3) Net Conflict</td>
<td>-4.91</td>
<td>13.01</td>
<td>.74</td>
</tr>
<tr>
<td>4) Total Conflict</td>
<td>30.10</td>
<td>8.21</td>
<td>.74</td>
</tr>
<tr>
<td>5) Total Positive</td>
<td>345.57</td>
<td>30.70</td>
<td>.92</td>
</tr>
<tr>
<td>6) Row 1 for Total Positive</td>
<td>127.10</td>
<td>9.96</td>
<td>.91</td>
</tr>
<tr>
<td>7) Row 2 for Total Positive</td>
<td>103.67</td>
<td>13.79</td>
<td>.88</td>
</tr>
<tr>
<td>8) Row 3 for Total Positive</td>
<td>115.01</td>
<td>11.22</td>
<td>.88</td>
</tr>
<tr>
<td>9) Col. A for Total Positive</td>
<td>71.78</td>
<td>7.67</td>
<td>.87</td>
</tr>
<tr>
<td>10) Col. B for Total Positive</td>
<td>70.33</td>
<td>8.70</td>
<td>.80</td>
</tr>
<tr>
<td>11) Col. C for Total Positive</td>
<td>64.55</td>
<td>7.41</td>
<td>.85</td>
</tr>
<tr>
<td>Score</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Reliability</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------</td>
<td>--------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>12) Col. D for Total Positive</td>
<td>70.83</td>
<td>8.43</td>
<td>.89</td>
</tr>
<tr>
<td>13) Col. E for Total Positive</td>
<td>68.14</td>
<td>7.86</td>
<td>.90</td>
</tr>
<tr>
<td>14) Total Variability (V)</td>
<td>48.53</td>
<td>12.42</td>
<td>.67</td>
</tr>
<tr>
<td>15) Col. Total V</td>
<td>29.03</td>
<td>9.12</td>
<td>.73</td>
</tr>
<tr>
<td>16) Row Total V</td>
<td>19.60</td>
<td>5.76</td>
<td>.60</td>
</tr>
<tr>
<td>17) Total Distribution</td>
<td>120.44</td>
<td>24.19</td>
<td>.89</td>
</tr>
<tr>
<td>18) D Sub-Score 5:</td>
<td>18.11</td>
<td>9.24</td>
<td>.88</td>
</tr>
<tr>
<td>19) D Sub-Score 4:</td>
<td>24.36</td>
<td>7.55</td>
<td>.79</td>
</tr>
<tr>
<td>20) D Sub-Score 3:</td>
<td>18.03</td>
<td>8.89</td>
<td>.77</td>
</tr>
<tr>
<td>21) D Sub-Score 2:</td>
<td>18.85</td>
<td>7.99</td>
<td>.71</td>
</tr>
<tr>
<td>22) D Sub-Score 1:</td>
<td>20.63</td>
<td>9.01</td>
<td>.88</td>
</tr>
<tr>
<td>23) Defensive Positive Score</td>
<td>54.40</td>
<td>12.38</td>
<td>.90</td>
</tr>
<tr>
<td>24) General Maladjustment Score</td>
<td>98.90</td>
<td>9.15</td>
<td>.87</td>
</tr>
<tr>
<td>25) Psychosis Score</td>
<td>46.10</td>
<td>6.49</td>
<td>.92</td>
</tr>
<tr>
<td>26) Personality Disorder Score</td>
<td>76.39</td>
<td>11.72</td>
<td>.89</td>
</tr>
<tr>
<td>27) Neurosis Score</td>
<td>84.31</td>
<td>11.10</td>
<td>.91</td>
</tr>
<tr>
<td>28) Personality Integration Score</td>
<td>10.42</td>
<td>3.88</td>
<td>.90</td>
</tr>
<tr>
<td>29) Number of Deviant Sings Score</td>
<td>4.37</td>
<td>X*</td>
<td>.90</td>
</tr>
</tbody>
</table>

* X - This distribution was so extremely skewed that conventional parametric statistics were meaningless. All reliability estimates were based on test-retest procedures over a two week period with 60 college students (Fitts, 1965).
Fitts (1965) indicated that there are several other studies that relate to the reliability of the scores of the TSCS. Congdon (1958) used a shortened version of the TSCS with psychiatric patients and still obtained a reliability coefficient of .88 for the Positive score. Fitts (1965) noted that the profile patterns of an individual tend to remain constant if tested repeatedly for a year or more.

**Summary**

This chapter described the sample, sample groupings, statistical procedures used for analysis of the data, and the instrument used. The sample for this study was composed of 168 students attending Education, Psychology, and Family Life classes at Oregon State University. These subjects were administered the Tennessee Self Concept Scale (TSCS) during the Fall quarter of 1973. This sample was divided into three main groups (Inflated Score Group, Honest Group, and Total Group) so that subjects that had TSCS scores that were inflated by defensiveness could be evaluated separately. The statistical procedure used to determine acceptance or rejection of the null hypothesis was the 2 x 2 fixed model analysis of variance design which used the "F" statistic. The TSCS was the instrument used. It was described by providing information relating to the nature of its scales and their validity and reliability coefficients.
CHAPTER IV

FINDINGS

The purpose of this study was to examine the effects of birth order, sex and the interaction of birth order and sex on the self-concept as measured by the 29 mean scores of The Tennessee Self-Concept Scale (TSCS). This chapter will present the results of each hypothesis tested.

The statistical procedures used to determine acceptance or rejection of each null hypothesis was the 2 x 2 fixed model analysis of variance designed which used the "F" statistic. The .05 level of confidence was selected as the acceptable level of statistical significance. Calculations were performed on the data by the BMD05V system from the UCLA Bi-Med program. The data analysis were carried out for each of the three main groups: Inflated Score Group (subjects with false positive TSCS scores), Honest Group (subjects with valid TSCS scores), and the Total Group (subjects from the Inflated Score Group plus subjects from the Honest Group).

**Two by Two Analysis of Variance**

The use of the 2 x 2 fixed model analysis of variance design made possible the examination of the following:

1) The birth order effect - a comparison of the 29 TSCS mean scores of first borns and later borns.

2) The sex effect - a comparison of the 29 TSCS mean scores of males and females.
3) The interaction effect - a comparison of the 29 TSCS mean scores of the first born male (FBM), the first born female (FBF), the later born males (LBM), and the later born female (LBF).

The 2 x 2 fixed model analysis of variance design used to test the null hypothesis for the three main groups (Inflated Score Group, Honest Group, and Total Group) resulted in two sources of variance. First, an uneven number of subjects in the four sub-groups (FBM, FBF, LBM, LBF) for the three main groups resulted in an unbalanced design. Second, since 29 TSCS scores were tested for the three null hypothesis, 87 tests were made.

The 87 Tests made and the unbalanced design described above, resulted in a high probability that Type I Error (rejection of the null hypothesis when the null hypothesis should have been retained) would occur. Under such conditions, Miller (1966) recommended that the Bonferroni Inequality statistical procedure be used to adjust the critical level to be reached for significance at the .05 level. The statistical formulations used in this procedure were as follows:

A) Let $\alpha_F = \text{the significance level for the whole family of decisions}$

Let $\alpha = \text{the significance level for individual decisions}$

B) The theoretical statement for the Bonferroni Inequality is: $1 - \alpha_F \geq 1 - N\alpha$

Where $N = \text{the number of individual decisions}$

C) The Boneferroni Inequality applied to this study is:

$87 \alpha \geq \alpha_F$

\[ \alpha \geq \frac{1}{87} \alpha_F \]

given: $\alpha_F = .05$
then:  \( \alpha > \frac{0.05}{87} \)
choose:  \( \alpha = \frac{0.05}{87} \)
\[ \alpha = 0.0005747 \]

The "F" table values to be reached for acceptance or rejection of the null hypothesis were adjusted as a result of the Bonferroni Inequality as follows:

1) The Inflated Score Group: from 4.2 to 15.16
2) The Honest Group: from 3.9 to 12.66
3) The Total Group: from 3.9 to 12.48

These adjusted "F" values were obtained by linear interpolation of the "F" values provided by Hald's (1950) Statistical Tables and Formulas. These new critical levels restricted the conditions for reaching significance so that Type I Errors would be avoided.

In this section each null hypothesis (Ho) and alternate hypothesis (Ha) will be stated for each of the three main groups followed by the results obtained.

(A) Inflated Score Group: (subjects with false positive TSCS scores)

Hypothesis I

\( Ho \): There is no difference between mean scores of first borns and later borns for any of the 29 TSCS scores.
\( Ha \): There is at least one of the 29 TSCS mean scores which is different for later borns as compared
to first borns.

Results: The null hypothesis was accepted.

Hypothesis II

$H_{02}$: There is no difference between mean scores of males and females for any of the 29 TSCS scores.

$H_{a2}$: There is at least one TSCS mean score which is different for males as compared to females.

Results: The null hypothesis was accepted.

Hypothesis III

$H_{03}$: There is no interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.

$H_{a3}$: There is a interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.

Results: The null hypothesis was accepted.

(B) Honest Group: (subjects with valid TSCS scores).

Hypothesis I

$H_{01}$: There is no difference between mean scores of first borns and later borns for any of the 29 TSCS scores.

$H_{a1}$: There is at least one of the 29 TSCS mean scores which is different for later borns as compared to first borns.

Results: The null hypothesis was accepted.
Hypothesis II

**Ho**₂: There is no difference between mean scores of males and females for any of the 29 TSCS scores.

**Ha**₂: There is at least one TSCS mean score which is different for males as compared to females.

**Results:** The alternate hypothesis was accepted. The statistical analysis revealed an F-Value of 15.56 for the Positive (P) - Identity Score. This indicates at the .05 level of confidence that females scored significantly higher on this score as compared to males (Table 1).

**TABLE 1.** The Positive (P) Mean Scores for the Honest Group Illustrating the Sex Effect (F = 15.56, p < .05).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>119.67</td>
<td>127.48</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>119.32</td>
<td>125.38</td>
</tr>
<tr>
<td>AVERAGED FOR SEX</td>
<td>119.50</td>
<td>126.43</td>
</tr>
</tbody>
</table>

The statistical analysis revealed an F-Value of 13.26 for the Distribution (D) Sub-Score 2. This indicated at the .05 level of confidence that males scored significantly higher on this score as compared to females (Table 2).
TABLE 2. The Distribution (D) Sub-Score 2 Mean Scores for the Honest Group Illustrating the Sex Effect (F = 13.26, P < .05).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>24.88</td>
<td>17.48</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>22.23</td>
<td>20.36</td>
</tr>
<tr>
<td>AVERAGED FOR SEX</td>
<td>23.56</td>
<td>18.92</td>
</tr>
</tbody>
</table>

The statistical analysis revealed an F-Value of 13.60 for the Distribution (D) Sub-Score 1. This indicated at the .05 level of confidence that females scored significantly higher on this score as compared to males (Table 3).

TABLE 3. The Distribution (D) Sub-Score 1 Mean Scores for the Honest Group Illustrating the Sex Effect (F = 13.60, P < .05).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>10.04</td>
<td>17.75</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>14.34</td>
<td>17.04</td>
</tr>
<tr>
<td>AVERAGED FOR SEX</td>
<td>12.19</td>
<td>17.40</td>
</tr>
</tbody>
</table>

The statistical analysis revealed an F-Value of 19.54 for the Psychosis (Psy) Score. This indicated at the .05 level of
confidence that males scored significantly higher on this score as compared to females (Table 4).

TABLE 4. The Psychosis Mean Scores for the Honest Group Illustrating the Sex Effect (F = 19.54, P < .05).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>50.00</td>
<td>46.38</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>49.43</td>
<td>44.66</td>
</tr>
<tr>
<td>AVERAGED FOR SEX</td>
<td>49.71</td>
<td>45.52</td>
</tr>
</tbody>
</table>

The statistical analysis revealed an F-Value of 21.16 for the Personality Disorder (PD) Score. This indicated at the .05 level of confidence that females scored significantly higher on this score as compared to males (Table 5).

TABLE 5. The Personality Disorder (PD) Mean Scores for the Honest Group Illustrating the Sex Effect (F = 21.16, P < .05).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>67.25</td>
<td>74.86</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>67.54</td>
<td>74.52</td>
</tr>
<tr>
<td>AVERAGED FOR SEX</td>
<td>67.40</td>
<td>74.69</td>
</tr>
</tbody>
</table>
Hypothesis III

Ho₃: There is no interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.

Ha₃: There is a interaction effect between birth order and sex as measured by any of the 29 TSCS mean Scores.

Results: The null hypothesis was accepted.

(C) Total Group: (subjects from the Inflated Score Group plus subjects from the Honest Group)

Hypothesis I

Ho₁: There is no difference between mean scores of first borns and later borns for any of the 29 TSCS scores.

Hypothesis II

Ho₂: There is no difference between mean scores of males and females for any of the 29 TSCS scores.

Ha₂: There is at least one TSCS mean score which is different for males as compared to females.

Results: The alternate hypothesis was accepted. The statistical analysis revealed an F-Value of 15.19 for the Positive (P) - Identity Score. This indicated at the .05 level of confidence that females scored significantly higher on this score as compared to males (Table 8).
TABLE 6. The Positive (P) Mean Scores for the Total Group Illustrating the Sex Effect ($F = 15.19, P < .05$).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>124.09</td>
<td>128.82</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>120.00</td>
<td>127.86</td>
</tr>
<tr>
<td>AVERAGED FOR SEX</td>
<td>122.05</td>
<td>128.34</td>
</tr>
</tbody>
</table>

The statistical analysis revealed an F-Value of 16.38 for the Psychosis (Psy) Score. This indicated at the .05 level of confidence that males scored significantly higher on this score as compared to females (Table 7).

TABLE 7. The Psychosis Mean Scores for the Total Group Illustrating the Sex Effect ($F = 16.38, P < .05$).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>50.24</td>
<td>47.21</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>49.66</td>
<td>45.38</td>
</tr>
</tbody>
</table>

The statistical analysis revealed an F-Value of 19.13 for the Personality Disorder (PD) Score. This indicated at the .05 level of confidence that females scored significantly higher on this score as compared to males (Table 8).
TABLE 8. The Personality Disorder (PD) Mean Scores for the Total Group Illustrating the Sex Effect (F = 19.13, P < .05).

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST BORN</td>
<td>71.85</td>
<td>76.71</td>
</tr>
<tr>
<td>LATER BORN</td>
<td>68.31</td>
<td>77.44</td>
</tr>
<tr>
<td>AVERAGED FOR SEX</td>
<td>70.08</td>
<td>77.08</td>
</tr>
</tbody>
</table>

Hypothesis III

H_0: There is no interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.

H_a: There is an interaction effect between birth order and sex as measured by any of the 29 mean scores.

Results: The null hypothesis was accepted.

Summary

The 2 x 2 fixed model analysis of variance design tested the following null hypothesis:

1) There is no difference between mean scores for first borns and later borns for any of the 29 TSCS scores.

2) There is no difference between mean scores of males and females for any of the 29 TSCS scores.

3) There is no interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.
The .05 level of confidence was selected as the acceptable level of significance. The null hypotheses were tested for each of the three main groups (Inflated Score Group, Honest Group, and Total Group) with the following results:

(A) **Inflated Score Group:** The null hypothesis were accepted.

(B) **Honest Group:** Null hypothesis one and three were accepted with null hypothesis two being rejected. The TSCS scores that resulted in having a significant sex effect for this group were the Positive - Identity Score, the Distribution Sub-Score 2, the Distribution Sub-Score 1, the Psychosis Score, and the Personality Disorder Score. The males had significantly higher Distribution Sub-Score 2 mean scores and Psychosis mean scores as compared to females. The females had significantly higher Positive - Identity mean scores, Distribution Sub-Score 1 mean scores, and Personality Disorder mean scores.

(C) **Total Group:** Null hypothesis one and three were accepted with null hypothesis two being rejected. The TSCS scores that resulted in having a significant sex effect for this group were the Positive - Identity Score, the Psychosis Score, and the Personality Disorder Score. The males had significantly higher Psychosis mean scores as compared to females. The females had significantly higher Positive - Identity mean scores and Personality Disorder mean scores as compared to males.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The Problem

The problem of this study was to determine the effects of birth order, sex, and the interaction of birth order and sex on the 29 scores of the Tennessee Self-Concept Scale (TSCS).

The Sample

The sample used in this study was composed of 168 students enrolled in Education, Family Life, and Psychology classes at Oregon State University. These subjects fell within the following parameters:

1) Upper, upper middle, and middle class Caucasians as determined by Hollingshed's "The Two Factor Index of Social Position" (type I, II, and III).

2) Persons between the ages 18 to 22.

3) Persons from families with two to four siblings of which there is at least one girl and one boy. Any sibling six or more years older or younger than another sibling was not considered as a sibling in the family.

4) All subjects were nonpaid volunteers.
The Instrument

The criterion instrument was the Tennessee Self Concept Scale (TSCS) which was developed by William H. Fitts (1965). The TSCS provided 29 self-concept scores which are described in Appendix A.

Analysis of the Data

The data were punched onto computer cards and were processed at the Oregon State University Computer Center using the BMD05V UCLA Bi-Med system. The analysis procedure was the 2 x 2 fixed model analysis of variance design which used the "F" statistic to test the following null hypothesis:

1) There is no difference between mean scores for first borns and later borns for any of the 29 TSCS scores.

2) There is no difference between mean scores of males and females for any of the 29 TSCS scores.

3) There is no interaction effect between birth order and sex as measured by any of the 29 TSCS mean scores.

The .05 level of confidence was selected as the acceptable level of significance. The null hypotheses were tested for each of the three main groups (Inflated Score Group - subjects with false positive TSCS scores, Honest Group - subjects with valid TSCS scores, and the Total Group - subjects from the Inflated Score Group plus subjects from the Honest Group) with the following results:
(A) **Inflated Score Group:** The null hypothesis were accepted.

(B) **Honest Group:** Null hypothesis one and three were accepted with null hypothesis two being rejected. The TSCS scores that resulted in having a significant sex effect for this group were the Positive - Identity Score, the Distribution Sub-Score 2, the Distribution Sub-Score 1, the Psychosis Score, and the Personality Disorder Score. The males had significantly higher Distribution Sub-Score 2 mean scores and Psychosis mean scores as compared to females. The females had significantly higher Positive - Identity mean scores, Distribution Sub-Score 1 mean scores, and Personality Disorder mean scores.

(C) **Total Group:** Null hypothesis one and three were accepted with null hypothesis two being rejected. The TSCS scores that resulted in having a significant sex effect for this group were the Positive - Identity Score, the Psychosis Score, and the Personality Disorder Score. The males had significantly higher Psychosis mean scores as compared to females. The females had significantly higher Positive - Identity mean scores and Personality Disorder mean scores as compared to males.

**Conclusions**

**The Three Main Groups**

The three main groups had F-Values that one would expect from the nature of the groups. Two factors contributed to the Inflated Score Group having F-Values that did not reach statistical
significance. First, the small number of subjects in each of the four sub-groups (8 first born males, 9 first born females, 4 later born males, and 16 later born females) reduced the efficiency of the statistical analysis. Second, the subjects in this group were characterized by false positive TSCS scores. Their responses were therefore invalid indicators of their self-concept which could have resulted in a skewed distribution of score profiles.

Since the Total Group contained the subjects from the Inflated Score Group, it had TSCS scores that were invalid and resulted in nonsignificant trends. The false positive scores could have been a factor in this group having lower F-Values for the sex effect than the Honest Group on the following TSCS scores: Positive - Identity, Psychosis, and Personality Disorder.

Reference to the Family Interaction Scheme and Related Research

The essence of the Family Interaction Theory proposed by Kammeyer (1967) was that any differences which appear between children of different birth orders must be the result of their different interaction-social learning experiences. Since this theory and the Family Interaction Scheme described earlier focused on birth order, they did not directly relate to the sex effect found in this study. By reviewing the Family Interaction Scheme 2-B & C, the writer did note that Koch (1956) theorized that the first born male would have less interference in his identification process than the first born female. The findings of this study contract Koch (1956) by showing the female to score
significantly higher on the Positive - Identity Score as compared to males.

Bartelt (1972) was the only study previously reviewed by the writer that had a significant sex effect, but it was in the opposite direction than the sex effect found in this study. Bartelt's (1972) study involved 129 first and second born high school students. Bartelt found that males had higher self-esteem than females with self-esteem measured by responses to a questionnaire which related to "self" to "satisfaction with money", to decision making, and to indicators of leadership.

Other studies previously reviewed (Stotland and Dunn (1962), Curry and associates (1971), Bartelt (1972), and Vockell and associates (1972)) indicated trends which are supported by the findings of this study which show no birth order effect on the self-concept.

Comparison of Male and Female Self-Concept Profiles

From the results of this study, it appears for this particular sample, that males had lower self-concepts than females as measured by the following TSCS scores: the Personality Disorder Score, the Psychosis Score, the Positive - Identity Score, and the Distribution Sub-Score 1. Males also had Total Distribution Scores and Distribution Sub-Score 5 mean scores which were lower than females but not at a significant level. Males did have significantly higher Distribution Sub-Scale 2 mean scores than females.
The Personality Disorder Scale

In the Honest Group and the Total Group, the Personality Disorder Score was interpreted inversely resulting in significantly higher Personality Disorder ratings for males as compared to females (refer to Tables 5 and 8). A comparison of the mean scores indicated that males had a more positive association with the Personality Disorder Score than females and therefore had more basic personality defects and weaknesses than females (refer to Appendix A for a definition of the Personality Disorder Score).

The Psychosis Scale

In the Honest and Total Groups, high mean scores for males as displayed in Tables 4 and 6 showed males to have more positive association with the Psychosis Score than females. These mean scores indicated that males associated more closely than females to the responses that the psychotic norm group made to the TSCS questions which made up this scale (refer to Appendix A for a definition of this score).

The Distribution Score

The TSCS requires responses to questions to be rated from 1 (completely false) to 5 (completely true). In the Honest Group, males made significantly more number 2 responses (as illustrated in Table 3) on the TSCS as compared to females. The level of significance was approached but not reached for the Total Distribution
mean scores ($F = 11.26, P > .05$) and for the Distribution Sub-Score 5 mean scores ($F = 12.36, P > .05$). These results showed females to have observed mean scores which were higher than the observed mean scores for males.

By evaluating the pattern of the Distribution Scores described above there appears to be a conservative tendency for males to be less definite and certain in what they say about themselves than females (refer to Appendix A for a definition of the Distribution Scores). This description was supported by the way males and females scored on the Positive - Identity Score.

The Positive - Identity Score

In the Honest and Total Group, low mean scores for males as displayed in Table 1 and 6 showed males to have a less positive association with the Positive - Identity Score than females. These mean scores indicated that males feel less positively about their basic identity - "what he is as he sees himself" than females (refer to Appendix A for a definition of this score).

Reference to Adler

Adler (1931) noted that the dethroned first born often grows up with the feeling of being deprived. From this theory, a contemporary practitioner could infer that the dethroned first born would have a lower self-concept than the later born. The results of this study would indicate that such inferences may be unwarranted. Although birth order may indeed have an effect on
personality development as Adler stated (1927), it appears that birth order does not have a significant effect on self-concept as measured by the TSCS.

Reference to Other Theoretical Positions

Hamachek (1971) noted that a child's order of birth effects his attitudes towards himself. Since this study did not have a birth order effect it did not support Hamachek's (1971) observation.

Sampson (1965) stated that the parent's "actions, anxieties, abilities, and perhaps aspirations change as a function of the sex of his child and the order of its birth." The sex effect found in this study does support Sampson's (1965) theory which showed parent's behavior to depend in part on the sex of their child.

Evaluation of the Birth Order Effect

As described earlier, Sampson (1965), Kammeyer (1967), and Eisenmen (1970) recommended certain conditions for designing research which involved birth order as a psychological variable. This study was in line with all of their suggestions. The lack of a birth order effect in this study therefore provided convincing evidence that birth order does not affect self-concept as measured by the TSCS.

A possible explanation for the lack of a birth order effect could be the nature of the TSCS scores. The only other study which investigated the effects of birth order on self-concept as measured by the TSCS was done by Curry and associates (1971).
They also found no birth order effect on self-concept. Therefore, the TSCS may tend to lack sensitivity in measuring the effects of birth order on self-concept, if, indeed, there are such.

Evaluation of the Sex Effect

The sex effect in this study showed a selected sample of female college students at Oregon State University to have a significantly more positive self-identity than male college students. The writer proposes the following inferences which may have influenced the TSCS scores as they related to this sex effect on self-concept. American children are raised in a Matriarchal system. The mother devotes most of her time to her child during his first five years during which the basis of his personality is developed. Then, the child enters into the school system which is dominated by females espousing the feminine ethic. In all, the child's formative years are spent in basically a female world. Because of this orientation, girls are foldly referred to as being made of "sugar and spice and everything nice". Boys are said to be made of "snakes and snails and puppy dog tails".

This feminine orientation continues for the child in his home as he grows up in a society that deems household work to be suitable for females. Therefore boys are not usually encouraged to take on responsibilities and identify with their home. The result of this experience is for males to tend to not feel as though they belong in the domestic scene. Instead, their goals and aspirations are thrust into becoming "something". To accomplish this, males
often go off to college in "search of an identity". This is in contrast to females who have been raised with an identity. They are the symbols of goodness, home, and family. When females go to college, they often tend to just seek polishing of their existent identity.

The sex effect for this study also showed that female college students were less inclined than male college students to associate themselves with the characteristics of the Psychosis and Personality Disorder Scores. These two TSCS scales involved questions that suggested an avoidance of reality. It appears that females have less of a need to escape reality, since they feel positively about who they are. This process does not seem true for males. In the frustration of working through the anxieties of establishing an identity, males may find security in avoiding reality. The validity of these inferences as well as the problems generated by this study can be examined by additional research.

**Recommendations**

In the process of conducting this investigation, a number of questions arose which were left unanswered. Further research needs to be completed to:

1) Examine the effects of birth order and sex on self-concept using a different criterion instrument that related to areas of the self which are different from the TSCS (i.e., creative-self).
2) Examine the effects of birth order and sex on self-concept for different population types (i.e., elementary school children) using the TSCS as the criterion instrument.

3) Examine the effect of birth order on self-concept as measured by the TSCS for samples that differentiate between the individuals born after the first child instead of treating them as a whole group (later borns).
BIBLIOGRAPHY


59. Stotland, E. and Dunn, R. E. Identification, Opposition, Authority, Self-Esteem, and Birth Order. Psychological Monogram, 76:No. 9 (Whole No. 528), 1962.


APPENDICES
APPENDIX A

CONCEPTUAL DEFINITIONS
OF THE 21 TSCS SCORES
CONCEPTUAL DEFINITIONS
OF THE 21 TSCS SCORES

The following TSCS score definitions were noted by Fitts (1965):

1) **Self Criticism (SC) Score:** This scale is composed of ten (10) items. These are all mildly derogatory statements that most people admit as being true for them. Individuals who deny most of these statements most often are being true for them. Individuals who deny most of these statements most often are being defensive and making a deliberate effort to present a favorable picture of themselves. High scores generally indicate a normal, healthy openness and capacity for self-criticism. Low scores indicate defensiveness, and suggest that the Positive Scores are probably artificially elevated by this defensiveness.

2) **The True-False Ratio (T/F):** This is a measure of response set or response bias, an indication of whether the subject's approach to the task involves any strong tendency to agree or disagree... High T/F scores indicate the individual is achieving self definition or self description by focusing on what he is and is relatively unable to accomplish the same thing by eliminating or rejecting what he is not. Low T/F scores would mean the exact opposite, and scores in the middle ranges would indicate that the subject achieves self definition by a more balanced employment of both tendencies--affirming what is self and eliminating what is not self.

3) **Net Conflict Scores:** These scores are highly correlated with the T/F Score. More directly, however, they measure the extent to which an individual's responses to positive items differ from, or conflict with, his responses to negative items in the same area of self perception. Thus this is a limited and purely operational definition and application of the term "conflict".

4) **Total Conflict Scores:** High scores indicate confusion, contradiction, and general conflict in self perception. Low scores have the opposite interpretation.

5) **Total Positive (P) Score:** This is the most important score on the Counseling Form. It reflects the overall level of self esteem. Persons with high scores tend to like themselves, feel that they are persons of value and worth, have confidence in themselves, and act accordingly. People with low scores are doubtful of their own worth; see themselves as undesirable;
often feel anxious, depressed, and unhappy; and have little faith or confidence in themselves. If the SC Score is low, high P Scores become suspect and are probably the result of defensive distortion.

6) Row 1 P Score - Identity: These are the "what I am" items. Here the individual is describing his basic identity - what he is as he sees himself.

7) Row 2 P Score - Self Satisfaction: This score comes from those items where the individual describes how he feels about the self he perceives. In general this score reflects the level of self satisfaction or self acceptance. An individual may have very high scores on Row 1 and Row 3 yet still score low on Row 2 because of very high standards and expectations for himself. Or vice versa, he may have a low opinion of himself as indicated by the Row 1 and Row 3 Scores yet still have a high Self Satisfaction Score on Row 2.

8) Row 3 P Score - Behavior: This score comes from those items that say "this is what I do, or this is the way I act." Thus this score measures the individual's perception of his own behavior or the way he functions.

9) Column A - Physical Self: Here the individual is presenting his view of his body, his state of health, his physical appearance, skills, and sexuality.

10) Column B - Moral-Ethical Self: This score describes the self from a moral-ethical frame of reference--moral worth, relationship to God, feelings of being a "good" or "bad" person, and satisfaction with one's religion or lack of it.

11) Column C - Personal Self: This score reflects the individual's sense of personal worth, his feeling of adequacy as a person and his evaluation of his personality apart from his body or his relationships to others.

12) Column D - Family Self: This score reflects one's feelings of adequacy, worth, and value as a family member. It refers to the individual's perception of self in reference to his closest and most immediate circle of associates.

13) Column E - Social Self: This is another "self as perceived in relation to others" category but pertains to "others" in a more general way. It reflects the person's sense of adequacy and worth in his social interaction with other people in general.

14) Total Variability (V) Score: This score represents the total amount of variability for the entire record. High scores mean that the person's self concept is so variable from one area to
another as to reflect little unity or integration. High scoring persons tend to compartmentalize certain areas of self and view these areas quite apart from the remainder of self. Well integrated people generally score below the mean on these scores but above the first percentile.

15) Column Total V Score: This score measures and summarizes the variations within the columns.

16) Row Total V Score: This score is the sum of the variation across the rows.

17) Total Distribution (D) Score: This score is a summary score of the way one distributes his answers across the five available choices in responding to the items of the scale. It is also interpreted as a measure of still another aspect of self perception: certainty about the way one sees himself. High scores indicate that the subject is very definite and certain in what he says about himself while low scores mean just the opposite. Low scores are found also at times with people being defensive and guarded. They hedge and avoid really committing themselves by employing "3" responses on the Answer Sheet.

18) D Sub-Score 5: This score is simply a count of the number of 5 responses.

19) D Sub-Score 4: This score is simply a count of the number of 4 responses.

20) D Sub-Score 3: This score is simply a count of the number of 3 responses.

21) D Sub-Score 2: This score is simply a count of the number of 2 responses.

22) D Sub-Score 1: This score is simply a count of the number of 1 responses.

23) Defensive Positive (DP) Score: This is a more subtle measure of defensiveness than the SC score. One might think of SC as an obvious defensiveness score and DP as a subtle defensiveness score. The DP score stems from a basic hypothesis of self theory: that individuals with established psychiatric difficulties do have negative self concepts at some level of awareness, regardless of how positively they describe themselves on an instrument of this type. A high DP score indicates a positive self description stemming from defensive distortion.

24) General Maladjustment (GM) Score: This score is composed of 24 items which differentiate psychiatric patients from non-
patients but do not differentiate one patient group from another. Thus it serves as a general index of adjustment-maladjustment but provides no clues as to the nature of the pathology. Note that this is an inverse Score on the Profile Sheet. Low raw scores result in high T-Scores, and vice versa.

25) **Psychosis (psy) Score:** The Psy score is based on 23 items which best differentiate psychotic patients from other groups.

26) **Personality Disorder (PD) Score:** The 27 items of this scale are those that differentiate this broad diagnostic category from the other groups. This category pertains to people with basic personality defects and weaknesses in contrast to psychotic states or the various neurotic reactions. The PD score is again an inverse one.

27) **Neurosis (N) Score:** This is an inverse score composed of 27 items. As with the other inverse scores, high T-Scores on the Profile Sheet still mean high similarity to the group from which the scale was derived—in this case neurotic patients.

28) **Personality Integration (PI) Score:** This score consists of the 25 items that differentiate the PI Group from other groups. This group was composed of 75 people who, by a variety of criteria, were judged as average or better in terms of level of adjustment or degree of personality integration.

29) **Number of Deviant Signs (NDS) Score:** The NDS score is a purely empirical measure, and is simply a count of the number of deviant features on all other scores. This score is based upon the theoretical position of Berg (1957) as stated in his "deviation hypothesis". This hypothesis states that individuals who deviate sharply from the norm in minor behaviors are likely to be deviant in more major aspects of behavior. The findings with the NDS score substantiate this hypothesis. Disturbed persons often obtain extreme scores on either end of the continuum. Consequently, a system which sets appropriate cut-off points (above 10 or below 0) for the NDS score will identify disturbed persons with considerable accuracy.
APPENDIX B

HOLLINGSHEAD'S

THE TWO FACTOR INDEX OF SOCIAL POSITION
HOLLINGSHEAD'S
THE TWO FACTOR INDEX OF SOCIAL POSITION

The following excerpts were taken from Hollingshead and Redlich (1958) to provide an overview of Hollingshead's The Two Factor Index of Social Position.

The Two Factor Index of Social Position was developed to meet the need for an objective, easily applicable procedure to estimate the positions individuals occupy in the status structure of our society. Its development was dependent both upon detailed knowledge of the social structure, and procedures social scientists have used to delineate class position. It is premised upon three assumptions: (1) the existence of a status structure in the society; (2) positions in this structure are determined mainly by a few commonly accepted symbolic characteristics; and (3) the characteristics symbolic of status may be scaled and combined by the use of statistical procedures so that a researcher can quickly, reliably, and meaningfully stratify the population under study.

Occupation and education are the two factors utilized to determine social position. Occupation is presumed to reflect the skill and power individuals possess as they perform the many maintenance functions in the society. Education is believed to reflect not only knowledge, but also cultural tastes. The proper combination of these factors by the use of statistical techniques enable a researcher to determine within approximate limits the social position an individual occupies in the status structure of our society.

The Two Factor Index of Social Position scores may be arranged on a continuum, or divided into groups of scores. The range of scores on a continuum of scores. For other purposes he may desire to break the continuum into a hierarchy of score groups.

I have found the most meaningful breaks for the purpose of predicting the social class position of an individual or of a nuclear family is as follows:

<table>
<thead>
<tr>
<th>Social Class</th>
<th>Range of Computed Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>11-17</td>
</tr>
<tr>
<td>II</td>
<td>18-27</td>
</tr>
<tr>
<td>III</td>
<td>28-43</td>
</tr>
<tr>
<td>IV</td>
<td>44-60</td>
</tr>
<tr>
<td>V</td>
<td>61-77</td>
</tr>
</tbody>
</table>
APPENDIX C

FAMILY BACKGROUND FORM AND CONSENT STATEMENT
I am asking you to participate in a study that relates self concept to family constellation. Your part is to first indicate some family background that will take about 30 seconds. If there are enough students in your class that are from a particular type of family unit, I will be back in about a week to administer a self concept test to those students that are interested which will take about 15 minutes to complete. If there are any questions relating to your involvement, I will be available through the School of Education, Guidance & Counseling Department. I am sure most of you believe that how we feel about ourself in a situation has a vast influence on how we perform in that situation. Therefore, the results of this self concept test should be very interesting to you. If at any time someone does not wish to participate in the study, he or she is free to withdraw.

Please sign here if you are willing to involve yourself in this study

Date

FAMILY BACKGROUND INFORMATION

1) Please list all of your brothers and sisters and indicate their ages and sex. Also, include your own name and circle it and indicate your age and sex.

2) Please state the precise occupational role that the head of your household that you were raised in performs for the economy today and the amount of formal schooling he or she has received.

3) If you don't consider yourself to be a Caucasian, place an "X" here.