

**SEX-ROLE IDENTIFICATION: THE MEASUREMENT  
OF MASCULINITY-FEMININITY IN  
EARLY CHILDHOOD**

By

**LINDA ELIZABETH SKINNER**

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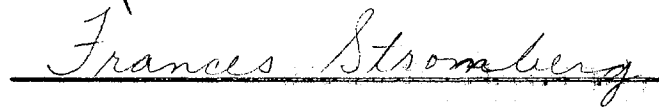
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Thesis Approved:

  
Thesis Adviser

  
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Dean of the Graduate College

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To the beautiful children I love . . .

in whom I place everlasting trust and faith.



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## CHAPTER I

### INTRODUCTION

#### Purpose

The original purpose of this study was to develop and refine two comparable forms of the Starkweather M-F test, an instrument designed to measure masculinity-femininity in early childhood. The purpose was expanded after the two forms of the M-F Test had been administered to a group of 64 children. An analysis of the test-retest findings indicated that there was a dimension of stability in the children's responses that could be measured and was significant as far as sex-role identification is concerned. In view of this finding, the purpose of this study was extended to include an examination of two dimensions of sex-role identification: (1) the masculinity or femininity exhibited by the child, and (2) the stability of the child's sex-role identification.

#### Problem

The problem of identification is becoming more and more complicated for young children in America today. Youth is faced with an extremely rapid and constantly accelerating pace of social and technological change; therefore, the task of identification is often a difficult one.

Evidence of interest in the problem of sex-role identification in early childhood is obvious as one examines the reports of research in

which attempts have been made to measure the masculinity or femininity of young children. These reports include research directed toward an understanding of sex-role identification, self-concept, creative learning and creative expression, personality development, and the identification of factors which influence the child's development in these areas. (e.g., Sears, 1957; Sears, Rau, and Alpert, 1965; Mussen and Rutherford, 1963).

Several problems are evident in the research methods designed to measure masculinity-femininity. One problem is that the data gathering may be complex and time-consuming, as in studies involving structured and unstructured observations. Another problem is the possibility of adult bias being injected into the scoring, as when specific instruments are employed. The third problem, which became apparent in the pilot work for the present study, is that the stability of the child's expressed masculinity or femininity is not considered in the scoring.

The stability of a child's identification exhibited by his behavior would seem to be an indicator of how surely he has identified his own sex-role. For example, a child who is consistently low-masculine would be just as stable in his sex-role as the child who is consistently high-masculine. But the child who fluctuates between low-masculine and high-masculine apparently has not identified his sex-role with any degree of certainty. Stability of exhibited masculinity or femininity is an indication of the child's sex-role identification at that time, and suggests that a child has or has not clearly identified his own sex-role.

The problems mentioned above can be eliminated when the Stark-weather M-F Test is used in a test-retest situation. The test is easy to administer; the scoring is free of adult bias; and when the test is administered in a test-retest situation, the scores for each child provide an indication of the consistency with which he exhibits masculinity or femininity, i.e., provides an indication of the child's identification with a specific sex-role.

#### A Discussion of Identification

Identification is the process by which a child internalizes the attitudes, values, and characteristics of others. Identification refers to the total personality, not only to the sex-role.

Bronfenbrenner (1960) stated that there are three classes of phenomena commonly called identification. (1) Identification as behavior implies that a child behaves in the manner of a model. (2) Identification as motive refers to the disposition of a child to act like a model. (3) Identification as process refers to "the sequential interplay of forces internal and external which impel the child to take on the characteristics of the parent." (Bronfenbrenner, 1960, p. 22).

Identification as behavior, as motive, and as process, can be separated only in theory. No matter what the focus of research, evidence of identification can be found only in the child's overt behavior which may be the imitation of another, or it may reflect the dispositional traits or the values and feelings of another.

Sex-role identification refers to the process of learning to behave and feel like a male or a female. This process involves

applying and practicing appropriate sex-role behavior until it becomes so internalized that it occurs without conscious or deliberate effort. (Lynn, 1969; McCandless, 1967). The degree to which a child is masculine or feminine indicates the extent to which he has internalized the values, characteristics, and attitudes of his own sex; therefore, a child's masculinity (boy-like behavior) or femininity (girl-like behavior) is indeed an indication of his sex-role identification.

There are three main theories of sex-role identification.

Classical Freudian theory maintains that a boy identifies with his father because of fear of the father. He employs this self-defense mechanism to escape the father's punishment and wrath. (McCandless, 1967). Basic to social learning theory is the idea that children identify with their parents because they have learned to love them, as a result of pleasure and reward in the relationship. Thus, imitation of parent behavior is associated with reward value for the child. (Mussen, Conger, and Kagan, 1963). Sociological theory is a combination of Freudian and learning theories. It proposes that a child tends to identify with powerful parents who both reward and punish him. This tendency results from the child's desire to have his parent's power. (McCandless, 1967).

Sex-role identification is of great importance for a child's future adjustment, namely his social and psychological adjustment. Boys and girls are born with some basic differences in physiology, but in their early years they learn from their parents and significant others the psychological and social aspects of their masculinity or femininity.

Masculinity-femininity can be described in terms of one's behavior, appearance, and/or preferences. Observation of preschoolers has suggested that much of a child's learning about his sex-role occurs in unconscious internalization rather than from any direct teaching from his parents. Sears (1957) observed that by the age of two a child has begun to display interests and attitudes similar to those of his parents. He acquires their values and places their demands on both himself and others. He "tries on" the adult role in his play and is able to distinguish between the social functions performed by males and by females.

After the age of three, there is an increase in appropriate sex-role preferences. Differences between masculine (boy-like) and feminine (girl-like) preferences are present at age three, more pronounced at age four, and even more evident at the age of five. (Hartup and Zook, 1960).

In the American culture, the child's first model is almost always a woman, and usually it is the mother or mother-figure. According to Sears (1957), both boys and girls first identify with a female. This is very acceptable for a girl, because of the culture's expectation for her to possess feminine personality characteristics throughout her life. However, the boy faces a serious problem of discontinuity. He must shift from feminine to masculine identification sometime during his early years if he is to develop normally, i.e., if he is to acquire a masculine personality. The girl may, and indeed is expected to, retain the initial identification with her mother, but the boy, under most circumstances, is expected to shift his identification to his father (or father-figure). Social

chastisement, conscious or unconscious, may follow if a masculine role is not assumed by young boys.

Observations have been useful in providing understanding of the process of identification which many preschoolers experience. The child may simply imitate behavior he observes or his behavior may reflect the dispositional traits of his chosen model. This model is usually that of his like-sex parent. In time the child does expand his imitative and reflective behavior to the point where the characteristics, attitudes, and values he exhibits are truly internalized. When the masculine or feminine role is internalized, there is sex-role identification. The interests, characteristics, and attitudes are such an integral part of the person that he behaves with spontaneity and responds automatically in any given situation. Therefore, to examine closely sex-role identification in young children, one must pay special attention to the child's behavior.

Because sex-role identification is important to psychological and social adjustment, there is a need for greater understanding of the factors which influence the development of identification. This greater understanding is needed in order to assure the healthy formation of the child's self-concept and self-acceptance as he attempts to behave in a culturally appropriate manner. To the extent that this study contributes to an understanding of the acquisition of masculinity-femininity and sex-role identification, it will help to clarify the problem of identification.

## CHAPTER II

### REVIEW OF THE LITERATURE

In considering sex-role identification, authors have used a number of research methods and have reached various findings. This chapter will include a discussion of the use of interviews, observations, and projective techniques in the measurement of masculinity-femininity. The chapter will also include problems in measurement and relevant research findings pertaining to sex-role identification in preschool children. A detailed discussion of research in this area can be found in Goldsmith (1970).

#### The Measurement of Masculinity-Femininity

Three methods of gathering data have been used in the measurement of masculinity-femininity: interviews, observations, and projective techniques. Interview methods have been used primarily with adults and older children; but with young children, observations and projective techniques are more frequently used.

#### Interview Methods

Interviews have been used to focus on the socialization practices of parents, the personality variables of children, and the preferences of children for toys, clothing, and pictures. Mussen and Rutherford (1963), using parental interviews, studied the relationship of the

parents' socialization practices, including the encouragement of sex-appropriate games, to the children's perceptions of parental power. Vroegh (1968) ranked children on masculinity-femininity and other personality variables on the basis of data gathered in interviews with nursery school teachers. Sears, Rau, and Alpert (1965) used interviews with parents as one of several methods in a large study of identification.

Interviews with children have been used in masculinity-femininity tests; but in these tests, pictures and toys have been employed to give the children opportunities to respond without talking. Fauls and Smith (1956) and Rosenberg and Sutton-Smith (1959) measured the masculinity-femininity of young children by having the children indicate their preferences in terms of toys, clothing, and games. More recently, Delucia (1963) developed a test of masculinity-femininity based specifically on toy preferences. The test included pictures of paired toys, but the rating of the toys as masculine or feminine was based on adult judgments.

Another preference test, the Starkweather M-F Test, chosen for use in the present research, was developed as a part of the creativity research at Oklahoma State University. The unique quality of this test is that the scoring is based on the actual choices of the children themselves rather than being based on adult judgments.

#### Observation Methods

Observations in structured and unstructured situations have also been used in the study of masculinity-femininity. When the situation is unstructured, as in observations of free play, heavy



reliance is placed on the observer's subjective interpretation of the child's behavior. Sears, Rau, and Alpert (1965) observed children in free play and rated them on a five-point scale of masculinity-femininity. The children were also rated on the basis of the playground areas in which they chose to play, certain areas being designated as high-masculine and others as high-feminine. In addition, the children were observed in a structured situation in which masculinity or femininity was determined by the children's reactions to sex-appropriate and sex-inappropriate toys.

### Projective Techniques

Projective techniques have also been used in the study of masculinity-femininity in childhood. The most widely used test of this type is the It Scale, developed by Brown (1957). The It Scale consists of a neutral stick figure for which the child is asked to choose clothes and toys. The child's score, determined by the choices he makes, is accepted as an indication of the child's own masculinity or femininity. Another projective technique was used by Emmerich (1959). In a structured doll-play situation, he studied children's expectations of parental attitudes and their identification with each parent. As each child played, it was assumed that he showed his parents' nurturance or control toward a child doll and that he showed his own nurturance or control through the child doll's reactions to a baby doll. The degree to which the child himself identified with each of his own parents was then determined by ratings of the doll-play on a nurturance-control scale.

### Problems in Measurement

Two major problems are evident in all of the methods of measurement described above. (1) The evaluation of what is masculine and what is feminine is based on adult judgments, thereby injecting adult bias into the research. (2) The stability of the child's masculinity or femininity is not considered, and only when this quality is stable and shows consistency can there be an assumption of sex-role identification.

Examples of adult bias in research can be found in each type of data gathering. Mussen and Rutherford (1963) used data gathered in parental interviews as the basis for the children's sex-typing. Sears, Rau, and Alpert (1965) utilized adult judgments of sex-appropriate games and playground areas as the basis for categorizing children as masculine or feminine. Brown (1957) developed the It Scale, a projective test in which the child chooses clothes and toys for a neutral stick figure. It is assumed to reveal his own masculinity or femininity in this process; however, the sex-appropriateness of the toys and clothes is determined by adult judgments rather than by the children's actual preferences.

The Starkweather M-F Test is designed so that the problem of adult bias is eliminated. The test measures the masculine and feminine preferences of young children, and the evaluation of what is masculine and what is feminine is based on the actual choices of the children being tested. The assumption underlying this design is that the behavior of little boys is boy-behavior (masculine) and the behavior of little girls is girl-behavior (feminine) regardless of the demands and expectations of the adults in the culture

In any culture, the adults are the ones who label specific behavior as masculine or feminine; and, where the socialization of children is concerned, the behaviors so labeled become the expectations which the adults have for the children. Probably it is for this reason that in most studies of children's masculinity-femininity, adult judgments have been used to "score" the children's behavior. The writer disagrees with this approach and maintains that the attributes and behavior of the young children themselves, rather than the judgments of adults, should provide the criteria for masculinity and femininity.

#### Creativity and Masculinity-Femininity

MacKinnon (1965) has discussed openness to experience as one characteristic of a creative person. He has spoken of the creative person's ability to recognize and give expression to aspects of inner experience and character, such as femininity in the case of the male and masculinity in the case of the female. Here the relationship between masculinity-femininity and creativity is clearly identified. It is for this reason that masculinity-femininity as a personality characteristic, is included in studies of creativity in early childhood.

The Starkweather M-F Test has been used in a few studies in which the relationship among the characteristics of creativity have been correlated. The findings are only suggestive, but they do indicate the possible relationships which one might find in a study of the creative potential of young children.

The masculinity-femininity of preschool children has been studied in relation to independence, socioeconomic status, and conformity to parents. White (1967) studied the

relationship between independence and masculinity-femininity. She found that the more independent girls were more feminine, and the less independent girls were less feminine. McKinzie (1968) studied the relationship between socioeconomic status and masculinity-femininity. She found that middle-class girls showed a change from low femininity at age three to marked femininity at age four; whereas the lower-class girls showed the reverse of this, a shift from marked femininity at age three to low femininity at age four. Marx (1969) studied socioeconomic differences in the relationship between masculinity-femininity and conformity to mothers. She found that the more masculine boys were more influenced by the opportunity to conform than were the less masculine boys. She also found a similar relationship for the four-year-old lower class girls; the more feminine girls were the more conforming. Goldsmith (1970) studied the relationship between masculinity-femininity and conformity to mothers and to fathers. She found that the boys who were conforming to both parents were significantly less masculine than other boys. (Lane, 1971, pp. 21-22).

In a study of the creativity profiles of young children, the relationship between masculinity-femininity and other personality characteristics was examined.

Research has indicated that girls who score high in femininity are behaviorally independent, which is a quality accepted as necessary for creative expression. On the other hand, it has been found that creative adults are able to give expression to aspects of inner experience, such as femininity in the case of males and masculinity in the case of females. It may be that the freedom necessary for creative expression is experienced by children who have clearly identified their sex-roles as masculine or feminine; and yet this very freedom may be the quality that makes it possible for creative adults to adhere less rigidly to culturally dictated sex-role behavior. (Starkweather in Lane, 1971, p. 48).

The Starkweather M-F Test may be of particular value in the study of sex-role identification in early childhood. The test can be used to measure two dimensions of sex-role identification, the quality and the stability of the child's masculinity or femininity.

When the masculinity-femininity quality expressed by a child is stable, that child has identified his particular sex-role. For

example, the child who consistently shows low masculinity has identified his sex-role just as clearly as the child who consistently shows high masculinity. The role may change over a period of time, but the stability of the role at a given time implies something about the child's self-concept and the security he finds in the role at that time. On the other hand, the child who is inconsistent in his expression of masculinity or femininity cannot have identified his sex-role.

## CHAPTER III

### METHOD AND PROCEDURE

The original purpose of this study was to develop and refine two comparable forms of the Starkweather M-F Test. The test was administered to a group of 64 children in a test-retest situation, and the findings at that stage of the research indicated that the stability of the children's responses, as well as the quality of masculinity or femininity, could be measured. This quality, the stability of the child's masculinity-femininity, appeared to be of particular importance as an indicator of sex-role identification. The purpose of this research was then extended to include an examination of two dimensions of sex-role identification: (1) the masculinity or femininity exhibited by the child, and (2) the stability of the child's sex-role identification.

This chapter includes a description of the children who participated in the research, a description of the research instrument used to measure masculinity-femininity, and information regarding the analysis of data.

#### Subjects

The subjects who participated in this study were 128 preschool children, 64 boys and 64 girls. The children ranged in age from three years no months to five years eleven months. All of the

children were in attendance at private nursery schools and kindergartens in Oklahoma City and Stillwater, Oklahoma. The distribution of subjects by age and sex is presented in Table I.

The testing program was conducted over a period of six months. Each child was tested individually twice with the interval between tests being no more than one week. Descriptive data and test scores for individual children are presented in Appendix A, Tables XI and XII.

TABLE I  
DISTRIBUTION OF SUBJECTS BY AGE AND SEX  
(N = 128)

	Boys	Girls	Total
Three-year-olds (3:0 - 3:11)	21	21	42
Four-year-olds (4:0 - 4:11)	23	23	46
Five-year-olds (5:0 - 5:11)	20	20	40
Total (3:0 - 5:11)	64	64	128

### Starkweather M-F Test

The Starkweather M-F Test was chosen for use in the present research. A brief description of the test, which is standard for the creativity research project at Oklahoma State University, is presented here.

The Starkweather M-F Test measures masculine and feminine preferences and is designed so that the evaluation of what is masculine and what is feminine is based on the actual choices of the children being tested. The assumption underlying this design is that the behavior of boys is boy-behavior (masculine) and the behavior of girls is girl-behavior (feminine).

The materials for the Starkweather M-F Test include a picture booklet of 20 to 24 pages and individually mounted pictures, identical to those used in the picture booklet. (For the present research, two booklets of 20 pages each were used.) On each page there are three different gummed seal pictures which are arbitrarily chosen and arranged by the investigator so that a masculine, a feminine, and a neutral picture appear on each page. As the child is shown the booklet, page by page, he chooses the picture on each page that he prefers and he is given an identical picture to keep. Administration of the test is illustrated in Figure 1.

Each child's M-F score is based on the masculine or feminine value of each picture he chooses. The value of each picture is determined by the specific choices of all the children in the study. For example, a picture chosen by a majority of the boys and by few of the girls is weighted heavily as masculine. This method of



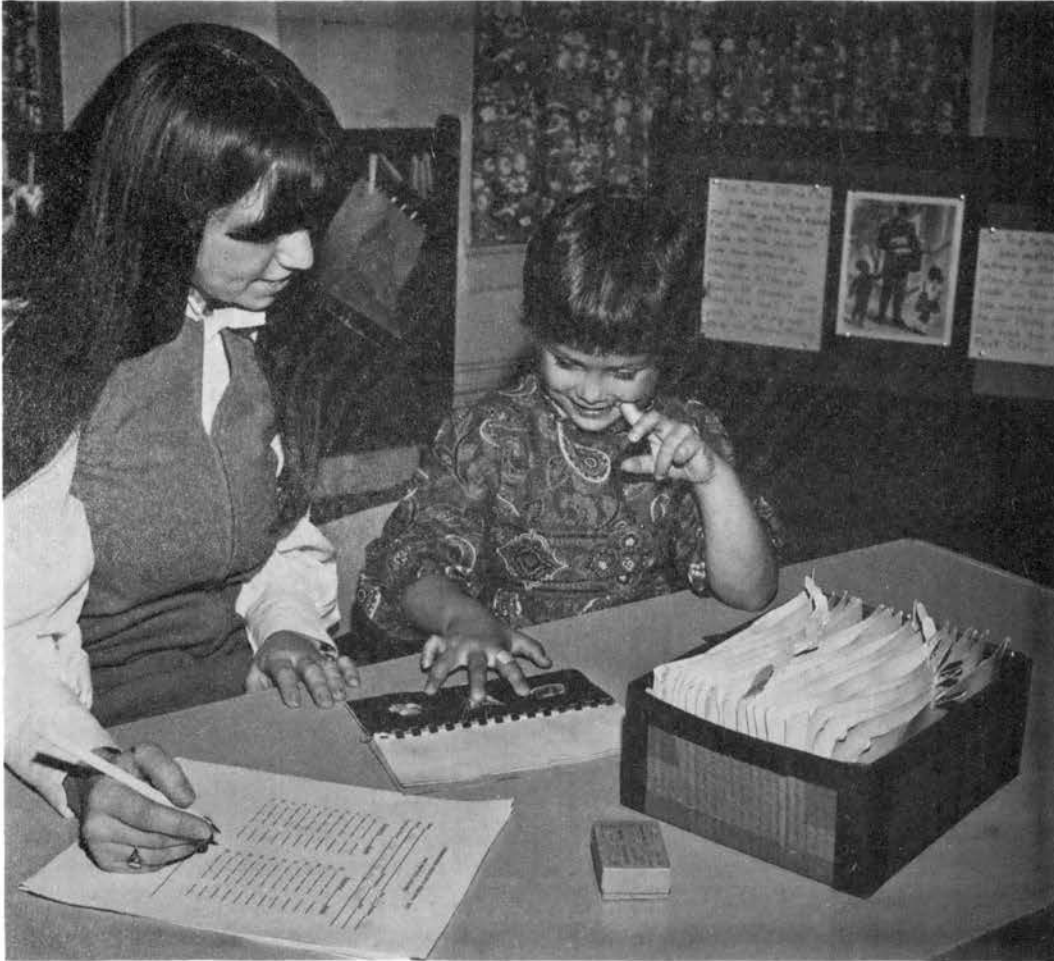


Figure 1. Administration of the Starkweather M-F Test.

scoring provides a measure of masculinity-femininity which is based on the actual choices of all the children themselves rather than being based on the judgments of adults.

A complete description of the Starkweather M-F Test, its administration and scoring and information about validity and reliability is presented in Appendix B.

#### Paired Forms of the M-F Test

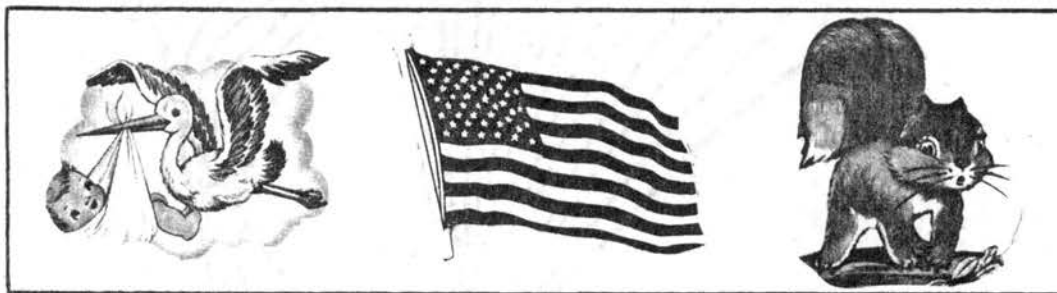
Two comparable forms of the Starkweather M-F Test were constructed by making two separate test booklets of paired pictures. The paired pictures were comparable but different; for instance, where a red, white and blue shield appeared in Form-A, the corresponding picture in Form-B was an American flag. Where a cat appeared in Form-A, kittens appeared in Form-B. Pages from the two booklets are illustrated in Figure 2.

Each of these M-F tests was administered and scored as described in Appendix B. On the basis of the children's choices, each picture was given a score which indicated whether it was preferred by boys or girls. The assigned score values of the pictures in Form-A and Form-B, based on the choices of 128 children who participated in the present study, are presented in Table II.

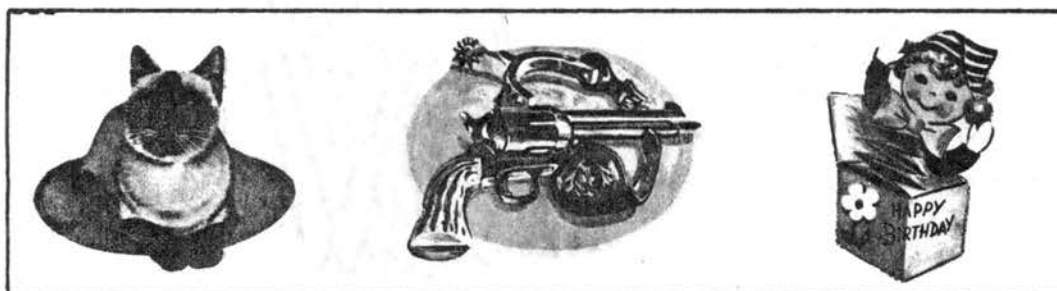
In the present research, in which both forms were administered to 128 children, the possible range of M-F scores on Form-A was from -383 (high-feminine) to +389 (high-masculine); and the actual range was from -335 to +360. On Form-B, the possible range of scores ranged from -362 to +376 and the actual range was from -342 to +332.



Form-A, page 12.



Form-B, page 12.



Form-A, page 18.



Form-B, page 18.

Figure 2. Comparable pages of the Starkweather M-F Test booklets.

TABLE II

M-F SCORE VALUES OF INDIVIDUAL PICTURES  
AS DETERMINED BY THE CHOICES OF  
64 BOYS AND 64 GIRLS

Form-A				Form-B			
Page	Pictures*			Page	Pictures		
1.	+19	-28	+09	1.	+21	-20	-01
2.	+01	+09	-10	2.	-17	-07	+24
3.	-06	+35	-29	3.	00	+13	-13
4.	+12	+04	-16	4.	+16	-01	-15
5.	00	-21	+21	5.	-02	-19	+21
6.	+02	+15	-17	6.	+01	+15	-16
7.	+30	-29	-01	7.	+27	-24	-03
8.	-18	+02	+16	8.	-05	-18	+23
9.	-08	+08	00	9.	+04	-16	+12
10.	+15	+09	-24	10.	+02	+04	-06
11.	+01	-18	+17	11.	+05	-20	+15
12.	-25	+15	+10	12.	-11	+05	+06
13.	+10	-05	-05	13.	+27	-29	+02
14.	-13	-02	+15	14.	-20	-06	+26
15.	-17	+20	-03	15.	+07	+12	-19
16.	+19	+04	-23	16.	+18	+04	-22
17.	00	-26	+26	17.	+06	-28	+22
18.	-20	+38	-18	18.	-05	+11	-06
19.	+26	-18	-08	19.	+31	-23	-08
20.	-18	-05	+23	20.	-20	-12	+32

\*The score values for the three pictures on each page are presented here in the order in which the pictures themselves appear in the Starkweather M-F Test booklet. For example, on Page 1 of Form-A, from left to right, the pictures were a deer, a baby and an apple; and their respective values were +19, -28, and +09.

The Measurement of Sex-Role Identification

The possibility of using the Starkweather M-F Test as an instrument for studying sex-role identification in early childhood was suggested by the results of pilot work with 64 children. Form-A and Form-B were administered to these 64 children in a test-retest situation with an interval of no more than a week between tests. The two forms of the test had been carefully constructed with paired pictures and a high correlation between the two sets of scores was expected. For the 32 girls the correlation was high. A Spearman rank correlation yielded a coefficient of +0.619, which was significant beyond the .001 level; but for the 32 boys, the Spearman correlation coefficient was +0.276, which was not statistically significant. These findings are presented in Table III.

TABLE III

DISTRIBUTION AND ANALYSIS OF M-F TEST SCORES  
OBTAINED IN A TEST-RETEST PILOT STUDY  
(N = 64)

	Median	Range	rho*
<b>Boys (N = 32)</b>			
Form-A	+105.5	-18 to +157	+0.276; $p > .10$
Form-B	+70.5	-15 to +150	
<b>Girls (N = 32)</b>			
Form-A	-41	+92 to -162	+0.619; $p < .001$
Form-B	-49	+84 to -158	

\*Spearman Rank Correlation Coefficients

The striking difference between the test-retest responses of the boys and the girls suggested that the boys' responses were less stable than those of the girls. If this were true, then this stability factor may have confounded the results of earlier research in which the results of one test alone were used to indicate the masculinity or femininity of each child.

As a result of the above finding, stability scores were calculated for the children in the pilot study. For each form of the M-F test, the scores of boys and of girls were ranked separately. Then for each child the difference between his rank on Form-A and his rank on Form-B was designated as his stability score. In the calculation of stability scores, the two ranks, and not the two M-F scores, must be used. The M-F scores for each form of the test are based on the assigned scores for the pictures in that form, and therefore, these scores cannot be directly compared.

Examples of children showing high stability and low stability are presented in Table IV. These examples illustrate that the degree of masculinity or femininity is not related to the stability score. Child M-1980, who was high-masculine, and Child M-2016, who was low-masculine, both showed high stability, i.e., little change in rank from test to retest, as indicated by stability scores of 01 and 03. The same situation was true with the girls, Child F-1927 and Child F-1896, whose stability scores were 01 and 02.

The scores of children showing low stability are also presented in Table IV. These children showed marked changes in their rank position from test to retest. Child M-1983 scored high-masculine (+157) on Form-A and low-masculine (+030) on Form-B, which is

TABLE IV

EXAMPLES OF M-F TEST STABILITY SCORES  
 CALCULATED FROM PILOT STUDY DATA  
 (N = 64)

	<u>Form-A</u>		<u>Form-B</u>		<u>Stability Score</u>
	Score	Rank	Score	Rank	(A-B)
<b>High Stability</b>					
Child M-1980	+150	02	+148	03	01
Child M-2016	+022	29	-015	32	03
Child F-1927	-162	01	-158	02	01
Child F-1896	+092	32	+046	30	02
<b>Low Stability</b>					
Child M-1983	+157	01	+030	27	26
Child M-1986	-018	32	+112	09	23
Child F-1928	-153	02	-024	20	18
Child F-1966	+006	23	-101	06	17

reflected in his change in rank from 01 to 27, making his stability score 26. Child M-1986 showed equally low stability from test to retest, but his shift was from low-masculine (-018) to high-masculine (+112), which is reflected in his change in rank from 32 to 09, making his stability score 23. Similar examples are presented for the girls, Child F-1928 and Child F-1966.

#### Data Analysis

For each of the 128 children who participated in this research, the following data are available: the age and sex of the child, the M-F test scores for Form-A and Form-B, and the stability score which indicates the consistency of the child's behavior from test to retest. These data are used in examining age and sex differences in the children's responses to the M-F test. The statistical methods used for these analyses include the Mann-Whitney U Test, Kruskal-Wallis one-way analysis of variance, and the Spearman rank correlation coefficient.



## CHAPTER IV

### RESULTS

Two comparable forms of the Starkweather M-F Test were designed and administered to a group of 64 preschool children. An analysis of the children's responses in a test-retest situation showed that the girls were consistent in their responses to Form-A and Form-B, but the boys did not show this consistency. In view of this finding, the two forms of the test were administered to an additional 64 children in order that data be obtained for at least 20 boys and 20 girls in each of three preschool age groups. Data for the total group of 128 children permitted an examination of the children's responses by sex and age.

#### Reliability of the M-F Test

The internal consistency of each form of the Starkweather M-F Test was examined. Split-half correlations, corrected by the Spearman-Brown formula, were calculated for M-F scores and for picture preferences. The responses of 40 five-year-old children were used in these analyses.

Two M-F scores were calculated from each child's responses, one score for the first ten items on the test and another score for the last ten items. These two sets of scores were used in split-half correlations to determine the internal consistency of the two forms

of the M-F test. For both forms, the correlations were significant beyond the .05 level, indicating that the tests were reliable. The correlation coefficients for these analyses are presented in Table V.

Split-half correlations based on picture preferences were calculated for boys and girls separately. For these analyses, each child's responses were scored in terms of whether he chose the picture on each page which was preferred by the other like-sex children. For each child a score was calculated for the first ten items and another score for the last ten items.

The correlation coefficients for these analyses are presented in Table V. For the boys, internal consistency was indicated for Form-B, but not for Form-A. For the girls, internal consistency was indicated for Form-A, but not for Form-B.

In these analyses, only the responses of the 40 five-year-old children were included; and when the correlations were computed for boys and girls separately, the responses of only 20 children were used in each analysis. The lack of apparent internal consistency for Form-A (boys' responses) and for Form-B (girls' responses) may have been caused by the fact that there were so few children included in these analyses. The implication is that these analyses should be redone with larger groups of children. However, it is possible that the test needs further refinement and that pictures which are more sensitive indicators of sex differences might be found and included in the test booklets.

TABLE V

RELIABILITY OF THE STARKWEATHER M-F TEST:  
 SPLIT-HALF CORRELATIONS BASED ON THE  
 RESPONSES OF THE OLDER CHILDREN  
 IN THE STUDY

	N	rho	
<b>M-F Scores</b>			
Form-A	40	+0.314	$p < .05$
Form-B	40	+0.348	$p < .05$
<b>Choice of Pictures Preferred by Boys</b>			
Form-A	20	+0.278	n.s.
Form-B	20	+0.473	$p < .05$
<b>Choice of Pictures Preferred by Girls</b>			
Form-A	20	+0.514	$p < .05$
Form-B	20	+0.265	n.s.

Sex Differences in the Children's Responses  
in a Test-Retest Situation

The distribution of test scores earned by boys and girls on Form-A and Form-B of the Starkweather M-F Test are presented in Table VI. Spearman rank correlation coefficients calculated from these scores are presented in Table VII.

The responses of the girls on the two forms of the M-F test were highly consistent. For the girls as a whole ( $N = 64$ ) and for the girls in each of the three age groups, the correlation between the M-F test scores for Form-A and Form-B were statistically significant.

The responses of the boys to the two forms of the M-F test did not show the high consistency that was evident in the girls' responses. When the boys as a whole were considered, the correlation between the two sets of scores yielded a coefficient that was significant; but when the boys were considered by age group, none of the correlations were statistically significant.

Evidence of sex differences in test-retest responses was first noticed in the pilot work and was confirmed in the above analyses. The boys are less stable than the girls in their test-retest responses, which suggests that the boys are less consistent in their expression of masculinity than the girls are in their expression of femininity. This stability can be measured as one of the two dimensions of sex-role identification.

TABLE VI

DISTRIBUTION OF TEST SCORES FOR FORMS A AND B  
OF THE STARKWEATHER M-F TEST

	N	Form-A		Form-B	
		Median	Range	Median	Range
<b>3-Year-Olds</b>					
Boys	21	+169	+15 to +305	+101	+12 to +283
Girls	21	-51	+97 to -279	-133	+103 to -207
<b>4-Year-Olds</b>					
Boys	23	+222	-61 to +327	+147	-44 to +314
Girls	23	-99	+194 to -335	-91	+181 to -343
<b>5-Year-Olds</b>					
Boys	20	+156.5	+49 to +360	+155	-59 to +332
Girls	20	-174.5	+194 to -308	-164	+96 to -330
<b>All Children</b>					
Boys	64	+177	-61 to +360	+126.5	-59 to +332
Girls	64	-120.5	+194 to -335	-140	+181 to -343

TABLE VII

SPEARMAN RANK CORRELATIONS: A COMPARISON OF  
SCORES FROM FORM-A AND FORM-B OF  
THE STARKWEATHER M-F TEST

	N	rho	
<b>3-Year-Olds</b>			
Boys	21	+0.425	$p > .05$
Girls	21	+0.453	$p < .05$
<b>4-Year-Olds</b>			
Boys	23	+0.226	n.s.
Girls	23	+0.736	$p < .001$
<b>5-Year-Olds</b>			
Boys	20	+0.357	n.s.
Girls	20	+0.491	$p < .05$
<b>All Ages</b>			
Boys	64	+0.325	$p < .01$
Girls	64	+0.645	$p < .001$

### Stability Scores

Examples of stability scores calculated from responses to Form-A and Form-B of the Starkweather M-F Test are presented in Table VIII. The test scores and the ranks of children showing high stability and low stability are presented in this table. These examples illustrate that the degree of masculinity or femininity shown by the child is not related to his stability score. Child M-1638, who was high-masculine, and Child M-2016, who was low-masculine, both showed high stability, i.e., little change in rank from test to retest, as indicated by stability scores of 02 and 01. The same situation was true for the girls, Child F-1752 and Child F-1912, whose stability scores were 00 and 02. Children showing low stability are those who showed marked changes in their rank position from test to retest. Child M-1987 scored high-masculine (+289) on Form-A and low-masculine (+070) on Form-B, which is reflected in his change in rank from 08 to 44, making his stability score 36. Child M-1996 showed equally low stability from test to retest, but his shift was from low-masculine (+078) to high-masculine (+238), which is reflected in his change in rank from 56 to 18, making his stability score 38. Similar examples are presented for the girls, Child F-1956 and Child F-1924.

The distribution of stability scores by sex and age is presented in Table IX. The Mann-Whitney U test was used in the analysis of sex differences. The results indicated that boys were less stable than girls in their sex-role identification. For the 64 boys, the median stability score was 14; and for the 64 girls, the median stability score was 08. The girls showed significantly greater stability than

TABLE VIII

EXAMPLES OF STABILITY SCORES CALCULATED FROM  
 RESPONSES TO FORM-A AND FORM-B OF  
 THE STARKWEATHER M-F TEST

	<u>Form-A</u>		<u>Form-B</u>		<u>Stability Score</u>
	Score	Rank	Score	Rank	(A-B)
<u>High Stability</u>					
Child M-1638	+301	06	+278	08	02
Child M-2016	+031	62	-044	63	01
Child F-1752	-287	05	-270	05	00
Child F-1912	+064	55	-008	53	02
<u>Low Stability</u>					
Child M-1987	+289	08	+070	44	36
Child M-1996	+078	56	+238	18	38
Child F-1956	-162	25	+044	58	33
Child F-1924	-021	43	-184	21	22



TABLE IX

STABILITY SCORES: DISTRIBUTION AND MANN-WHITNEY  
U TEST ANALYSIS OF SEX DIFFERENCES

	N	Median	Range	U Test
<b>3-Year-Olds</b>				
Boys	21	14	03 to 33	z: 0.793; n.s.
Girls	21	10	00 to 33	
<b>4-Year-Olds</b>				
Boys	23	18	00 to 51	z: 1.682; p < .05
Girls	23	08	00 to 43	
<b>5-Year-Olds</b>				
Boys	20	11.5	0.5 to 54	z: 0.744; n.s.
Girls	20	06.25	00 to 35	
<b>All Ages</b>				
Boys	64	14	00 to 54	z: 2.179; p < .02
Girls	64	08	00 to 43	

did the boys, and this difference was significant beyond the .02 level.

An examination of the median stability scores by age groups suggests that the girls show an increase in stability as they grow older; however, this apparent trend is not statistically significant. The analysis of age differences in stability scores is presented in Table X.

#### Summary of Findings

1. Both forms of the Starkweather M-F Test are reliable, i.e., have internal consistency. However, there were indications that the test needs further refinement and that pictures which are more sensitive indicators of sex differences might be found and included in the test booklet.

2. In the test-retest situation, the girls showed significantly greater stability than did the boys.

3. The degree of masculinity or femininity shown by the child was not related to the stability of his test responses. Among the children who showed high stability, i.e., little change in rank from test to retest, there were children who were high in masculinity or femininity and children who were low in masculinity or femininity.

4. The older girls tended to show greater stability than the younger girls; however, this tendency was not statistically significant.

TABLE X

MANN-WHITNEY U TEST ANALYSIS OF AGE DIFFERENCES  
 IN RESPONSES TO THE STARKWEATHER M-F TEST  
 (N = 128)

	Form-A Scores	Form-B Scores	Stability Scores
<b>Boys</b>			
3's : 4's	z: 1.375; p < .10	z: 0.858; n.s.	z: 0.858; n.s.
3's : 5's	z: 0.483; n.s.	z: 1.461; p < .10	z: 0.522; n.s.
4's : 5's	z: 0.925; n.s.	z: 0.804; n.s.	z: 0.695; n.s.
<b>Girls</b>			
3's : 4's	z: 0.505; n.s.	z: 0.681; n.s.	z: 0.494; n.s.
3's : 5's	z: 2.504; p < .01	z: 2.191; p < .02	z: 0.575; n.s.
4's : 5's	z: 0.986; n.s.	z: 1.400; p < .10	z: 0.219; n.s.
<b>All Children</b>			
3's : 4's	z: 1.550; p < .10	z: 1.036; n.s.	z: 0.063; n.s.
3's : 5's	z: 2.148; p < .02	z: 2.570; p < .01	z: 0.743; n.s.
4's : 5's	z: 0.065; n.s.	z: 1.563; p < .10	z: 0.425; n.s.

## CHAPTER V

### SUMMARY AND IMPLICATIONS

The original purpose of this study was to develop and refine two comparable forms of the Starkweather M-F Test, an instrument designed to measure masculinity-femininity in early childhood. The purpose was expanded after the two forms of the M-F test had been administered to a group of 64 children. An analysis of the test-retest findings indicated that there was a dimension of stability in the children's responses that could be measured. In view of this finding, the purpose of this study was extended to include an examination of two dimensions of sex-role identification: (1) the masculinity or femininity exhibited by the child, and (2) the stability of the child's sex-role identification.

The subjects who participated in this study were 128 preschool children, 64 boys and 64 girls. The children ranged in age from three years no months to five years eleven months. All of the children were in attendance at private nursery schools and kindergartens in Oklahoma City and Stillwater, Oklahoma.

The Starkweather-M-F Test, chosen for use in this study, was developed as a part of the creativity research program at Oklahoma State University. This test is designed so that the evaluation of what is masculine and what is feminine is based on the actual choices of the children being tested, rather than being based on adult judgments.

### Implications of the Study

A new dimension of sex-role identification was measured in the present research. This dimension was the stability of the child's expressed masculinity or femininity, and it is of extreme importance in any study of sex-role identification in childhood. Earlier studies focused on a single measure of masculinity-femininity, but the present research has shown that one measure alone can give a false picture of the child. For example, a child who scores high-masculine on one test may score low-masculine on another, indicating instability in his expressed masculinity. The use of two measures, as in a test-retest design, provides an indication of the consistency with which a child exhibits his masculinity or femininity, and therefore, provides an indication of the sex-role with which he is actually identifying.

Earlier studies have interpreted the expression of high masculinity as an indication of sex-role identification, but in the light of the present research, sex-role identification is evident only if the child is consistent in his expression of high masculinity. It is the consistency rather than the degree of masculinity that is the sign of his identification.

Another dimension of sex-role identification is the comfort that a child experiences in his chosen role. Is his identification free or is it compulsive? The answer to this question may be found in the parents' acceptance and control of the child. Some children seem to be extremely comfortable in their chosen roles. Child F-1934 scored consistently low-feminine and seemed to be extremely comfortable in her tomboy role. She was adored by the members of her family who enjoyed and accepted her as the little girl that she was. It is

possible that other children, equally consistent in their test responses, were not so comfortable in their chosen roles as this little tomboy. A child who is struggling to live up to adult expectations might show consistency in test responses, but would be responding in a compulsive manner rather than responding freely. This suggests that if sex-role identification in early childhood is to be understood, consideration must be given to the acceptance and control of the child by the parents and other adults.

Masculinity-femininity is one of the characteristics which has been studied in relation to creativity. The creative person's freedom and his openness to experience make it possible for him to recognize and give expression to aspects of inner experience and character, such as femininity in the case of the male and masculinity in the case of the female. In line with this reasoning, a child who feels comfortable in the sex-role he has chosen should be able to express himself creatively; however, a child who is compulsive in response to an expected sex-role, would be limited in his freedom to express himself creatively. This apparent relationship between masculinity-femininity and creativity indicates the need to include sex-role identification as a variable in creativity research.

#### Recommendations for Future Research

In view of the findings of the present research the following recommendations are made:

- (1) Refine the test booklets so that the pictures offered are more sensitive indicators of the sex differences and assign pictures to the test booklets so that an equal number of preferred pictures

appear for boys and for girls. (Ultimately art work specifically for this test should be designed.)

(2) Refine the scoring process. Develop assigned scores for the booklet pictures based on the responses of the children who showed stability in the test-retest situation.

(3) Develop a table of scores for the booklet pictures which can be used in the testing of individual children and small groups of children. A table of scores, such as this, must be based on data gathered in the testing of several hundred children.

#### A Special Section for Those Who Love Children

The most rewarding aspect of this research has been the warm contact with the individual little people. Each child had a story to tell, a song to sing, a thoughtful profundity to utter, a candid observation to delight me, a budding idea to express, or simply smiles and giggles to tug at my heartstrings. How lucky am I to have had the chance to know these children, and to hear all about the important things in their lives. Their many kitty-cats and puppy-dogs and fishies and trips to Grampa's farm all are an integral part of their joyful exultations of life just beginning, yet already so full.

Learning from children is a most beautiful experience. Young children are marvelous teachers if one pays close attention and listens very carefully. They have given me indescribable joy and another special glimpse into the world of the child.

Children show their appreciation unreservedly. A little girl, S.S., age 4:7, babbled, "Oh yes, this is fun, fun, fun! Where did you get all these pretty pictures? Oh, they are all so pretty! Everything is pretty, you know?"

Little girls really do love soft and cuddly things -- especially baby anythings! A girl, A.H., age 5:2, squealed, "Ooh, what a sweet baby! I love to take care of babies, don't you?" Another five-year-old girl, C.B., said, "Little duckies are nice to hold. We play babies with them -- and rabbits too!"

Little boys especially like to tease girls -- even big ones! R.H., age 5:3, after choosing a picture of a raccoon, said to me, "Well, I'll tell ya what I'm gonna do with this here raccoon. I'm gonna cut his guts out and make me a hat. Squish! Squish! -- Nah, I'm not really. I guess I kinda like raccoons."

Little children already have some ideas about what little girls do and what little boys do. A girl, K.F., age 5:11, said, "I'm not going to choose the gun because I'm not a boy." Another girl, R.M., age 5:8, said, "Some of the boys will probably take the Indian . . . I don't care. I want it anyway." Another little girl, D.M., age 5:3, revealed, "Oh yes, I would like the baby because I am a girl and girls are the only mothers!"

Some little boys are very glad they are not little girls. L.S., age 4:6, said, "I ain't takin' no girls' stuff!" And C.H., age 5:8, said, "Is this baby a girl one or a boy one? If it's a boy one, I'll take it." T.S., age 4:3, remarked, "A rose is for girls. Yuck!"

Decision-making was difficult for some children, especially the younger ones. A boy, S.A., age 3:0, wanted to choose all three pictures on each page. He said, "I want them all the same." Another boy, D.C., age 4:8, said, "I just can't decide. I guess I like them all -- yes -- no -- but which? Oh, you pick for me."



Little boys and little girls often like the same things that their daddies or mommies or big brothers like. D.A., age 5:7, a boy, chose a duck saying, "My dad likes ducks, so I'm taking this duck. I like just what my dad likes. Do you?" A little girl, A.S., age 4:4, said, "Oh yes, I like flowers. I like my mommy." Another girl, K.E., age 3:2, said, "Oh yes, I will take this red car. Hal likes these!"

Children even have the special talent of recognizing children of all ages. One little child said to me, "You don't look like a children but I think you really are one." And then, as if unsure of the idea she had formulated, she asked me, "Well, would you druther play with us all the time?" Honestly, I answered "Yes."

God bless the children.

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**APPENDIX A**

TABLE XI

DESCRIPTIVE DATA AND TEST SCORES FOR INDIVIDUAL  
BOYS PARTICIPATING IN A STUDY OF  
MASCULINITY-FEMININITY IN  
EARLY CHILDHOOD  
(N = 64)

Sex and Code No.	Age	M-F Scores		M-F Stability Score
		Form-A	Form-B	(A-B Rank Difference)
M-1997	3:0	+184	+239	14
M-1992	3:0	+117	+145	18
M-1977	3:0	+264	+063	33
M-1994	3:0	+113	+029	05
M-2008	3:1	+226	+158	03
M-1982	3:1	+241	+265	08
M-2007	3:1	+115	+025	08
M-1999	3:1	+092	+102	17
M-2021	3:4	+144	+012	15.5
M-2020	3:4	+179	+190	10
M-2009	3:5	+231	+138	09
M-1985	3:6	+157	+015	20
M-2000	3:6	+036	+092	20
M-2015	3:8	+172	+101	04
M-2006	3:8	+096	+065	07
M-1998	3:9	+041	+067	14
M-1920	3:10	+238	+053	30.5
M-1915	3:10	+169	+152	08
M-1918	3:10	+015	+093	24
M-2005	3:11	+305	+115	30.5
M-1988	3:11	+282	+283	03
M-1976	4:0	+149	+088	00
M-1984	4:0	+222	+250	12
M-2012	4:3	+225	-017	37
M-2017	4:3	+034	-007	01
M-1981	4:3	+278	+199	09
M-2018	4:3	+272	+140	18
M-1983	4:4	+327	+030	51
M-1921	4:5	+268	+245	02
M-2019	4:5	+189	+147	02
M-1745	4:6	+254	+028	38
M-2011	4:6	+081	+182	31
M-1892	4:6	+204	+314	23
M-1916	4:6	+175	+292	27
M-2013	4:6	+241	+053	32
M-1893	4:7	+167	-035	26
M-2016	4:7	+031	-044	01
M-1993	4:7	+105	+118	17
M-1990	4:8	+125	+168	21
M-1986	4:8	-061	+223	45
M-2022	4:8	+308	+196	18
M-1980	4:9	+305	+296	00.5
M-1987	4:10	+289	+070	36
M-2004	4:11	+293	+265	03.5
M-1996	5:0	+078	+238	38
M-1974	5:1	+360	+321	01
M-2014	5:1	+234	+183	02
M-2010	5:1	+255	+076	28.5
M-1917	5:3	+267	+242	02
M-2002	5:4	+104	+016	05
M-1749	5:4	+152	+249	26
M-2023	5:5	+049	+064	11
M-1975	5:7	+141	+127	13
M-2003	5:7	+154	+106	03
M-2001	5:7	+196	+332	27
M-1995	5:8	+159	+056	12
M-2024	5:8	+195	+270	20
M-1638	5:9	+301	+278	02
M-1978	5:9	+075	+315	54
M-1979	5:9	+144	+031	08.5
M-1919	5:10	+147	+076	00.5
M-1991	5:10	+214	-059	38
M-1989	5:11	+284	+254	03
M-1843	5:11	+106	+126	17

TABLE XII

DESCRIPTIVE DATA AND TEST SCORES FOR INDIVIDUAL  
GIRLS PARTICIPATING IN A STUDY OF  
MASCULINITY-FEMININITY IN  
EARLY CHILDHOOD  
(N = 64)

Sex and Code No.	Age	M-F Scores		M-F Stability Score
		Form-A	Form-B	(A-B Rank Difference)
F-1924	3:1	-021	-184	22
F-1936	3:2	+047	+036	01
F-1939	3:2	+040	+089	08
F-1956	3:2	-162	+044	33
F-1943	3:2	-161	-021	24
F-1935	3:3	-188	-136	11
F-1946	3:5	-084	-162	09.5
F-1967	3:5	-136	-133	06.5
F-1926	3:5	+097	+103	10
F-1970	3:6	-203	-188	01
F-1960	3:6	-124	-193	13
F-1925	3:6	+069	-160	28
F-1911	3:6	-051	-081	01
F-1938	3:7	-121	+037	24
F-1914	3:8	+016	-115	12
F-1912	3:8	+064	-008	02
F-1932	3:8	-279	-207	08
F-1973	3:10	+045	-138	20
F-1965	3:11	-004	-162	20.5
F-1948	3:11	-016	-034	00
F-1954	3:11	-175	-178	01
F-1942	4:0	+066	+043	00
F-1957	4:0	+194	-071	21.5
F-1898	4:1	-018	-174	21
F-1896	4:1	+192	+096	01.5
F-1963	4:2	-197	-133	13.5
F-1931	4:2	-277	-252	00
F-1958	4:2	-212	-026	33
F-1928	4:3	-313	-048	43
F-1922	4:4	-278	-314	03
F-1927	4:4	-335	-343	00
F-1959	4:4	+119	+015	05
F-1966	4:4	+008	-225	38
F-1969	4:6	-255	-315	08
F-1941	4:6	-290	-200	12
F-1952	4:6	-135	-091	08
F-1961	4:6	-080	-009	14
F-1953	4:6	+035	-013	01
F-1933	4:6	-099	-191	15
F-1968	4:7	+174	+129	02
F-1901	4:10	+153	+181	04
F-1964	4:11	+096	-028	10
F-1945	4:11	-205	-203	03
F-1962	4:11	-242	-195	03
F-1889	5:0	-248	-263	06.5
F-1923	5:1	-094	-143	04
F-1913	5:2	-257	-078	31
F-1944	5:2	-308	-250	06
F-1934	5:2	+194	+096	03
F-1955	5:3	-251	-030	35
F-1947	5:3	-081	-209	25
F-1971	5:3	-138	-223	17
F-1930	5:3	-819	-263	08.5
F-1894	5:4	-120	-170	08
F-1949	5:4	-020	-151	14
F-1940	5:5	-054	-057	04
F-1950	5:8	-206	-208	04
F-1951	5:8	-199	-182	01
F-1728	5:8	-033	-053	02
F-1937	5:9	-232	-158	20
F-1752	5:11	-287	-270	00
F-1972	5:11	-150	-142	05
F-1929	5:11	-200	-330	18
F-1776	5:11	-053	-089	01

**APPENDIX B**

**STARKWEATHER MASCULINITY-FEMININITY TEST****FOR PRESCHOOL CHILDREN\***

developed by

Elizabeth K. Starkweather

Oklahoma State University  
Stillwater, Oklahoma

The Starkweather Masculinity-Femininity Test (M-F Test) measures the masculine and feminine preferences of preschool children. The test is designed so that the evaluation of what is masculine and what is feminine is based on the actual choices of the children being tested. The assumption underlying this design is that the behavior of boys is boy-behavior (masculine) and the behavior of girls is girl-behavior (feminine).

The materials for the M-F Test include a picture booklet of 20 to 24 pages and individually mounted pictures, identical to those used in the test booklet. The pages in the test booklet are of colored hi-gloss paper approximately 3" x 8" in size. Hi-gloss paper comes in a variety of colors and no color needs to be used for more than two pages in the test booklet. On each page there are three pictures (gummed seals) which are arbitrarily selected as masculine, feminine and neutral. This placement of masculine and feminine pictures on each page is done for the purpose of maximizing the power of the test to discriminate between the preferences of boys and girls. The pictures themselves are commercially produced gummed seals and are selected to include a variety of objects such as animals, cars, babies, flowers, cowboys and Mother Goose figures. The individually mounted pictures are placed on small pieces of hi-gloss paper, approximately 2" x 3", which are the same color as the test booklet pages on which the pictures appear.

**Administration**

Each child is introduced to the M-F Test by being told that he is going to make a picture book of his very own. He is then shown the first page of the test booklet and is asked, "Which one of these pictures do you want?" The child makes his selection and is then given an identical picture, one of the individually mounted pictures, as the first page in his own picture book. This procedure is repeated until the child has chosen one picture from each page in the test booklet.

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\*The Starkweather M-F Test was developed as part of a creativity research program supported by the Research Foundation at Oklahoma State University.



## Scoring

Each picture in the M-F Test booklet is assigned a score, a masculine or feminine value, which is determined by the specific choices of all the children in the study. For example, a picture chosen by a majority of the boys and by few of the girls is weighted heavily as masculine. The M-F score for an individual child is then figured by adding the masculine and feminine values of all the pictures he has chosen.

This method of scoring provides a measure of masculinity-femininity which is based on the actual choices of the children themselves rather than being based on the judgments of adults.

The method of calculating the masculine and feminine values of individual pictures is illustrated in Figures 1 and 2. The page shown in Figure 1 is from an M-F Test booklet used in several studies in which an equal number of boys and girls participated. When this is true, the score values assigned to the pictures are figured by subtracting the number of girls from the number of boys who chose each picture. In the 1968 DKM Study, the pony, chosen by 63 boys and 23 girls, was assigned a masculine value of +40; and the baby chosen by 15 boys and 46 girls, was assigned a feminine value of -31. These assigned values are only for use in scoring the M-F Tests of the children who participated in that study. In the 1969 KGM Study, the assigned numerical values for these same pictures were smaller because fewer children participated in that study; nevertheless, the relative values remained the same, the pony was masculine (+20) and the baby was feminine (-17).

When an unequal number of boys and girls participate in a study, weighting is necessary in calculating the values to be assigned to the individual pictures. In Figure 2, a page from the M-F Test booklet used in the 1967 SKW Study is illustrated. In this study there were 17 boys and only 15 girls. Weighting to correct for this inequality was achieved by multiplying the number of girls who chose each picture by 1.133; n.b.,  $17 \div 15 = 1.133$ . The weighted scores thus obtained for the girls were then subtracted from the scores for the boys. In Figure 2, the picture of the baby was chosen by three of the 17 boys and was chosen by seven of the 15 girls. When the girls' score was weighted, i.e., multiplied by 1.133, it became 7.93, and the assigned value for the picture of the baby was then -4.93.

The attached score sheet illustrates the way in which a child's choice of pictures is recorded and his M-F score is figured from the assigned values for each of the chosen pictures.

### Evaluation

The reliability of the Starkweather M-F Test was determined by a split-half correlation, using the Spearman-Brown modified formula. Each child's responses to the odd items and the even items on the test provided the two scores necessary for this analysis. A coefficient of +0.936, significant beyond the .001 level, indicated that the M-F Test was highly reliable, i.e., had internal consistency.

The Starkweather M-F Test was designed to discriminate between the picture preferences of boys and girls, and it does achieve this purpose for which it was designed. A Mann-Whitney U Test analysis of the scores of 32 preschool children indicated that the boys and girls had significantly different picture preferences. ( $U = 1.00$ ;  $p < .002$ ). The M-F Test was accepted as having face validity.

A unique quality of the Starkweather M-F Test is that the bias of adult judgments is avoided in the scoring, an achievement which has not been possible when researchers have used other measuring devices. For the most part, where young children are concerned, masculinity and femininity are judged on the basis of behavior and appearance. For example, adults judge a girl to be a tomboy if her preferred activities, games, toys, playmates and clothing are more "appropriate" for boys than for girls. The rather common acceptance of judgments such as this suggested the possibility of designing a validation test which would measure masculinity and femininity as culturally defined. The validity of the M-F Test would be assured if the test scores, free of adult bias, were in agreement with the cultural expectations for young boys and girls.

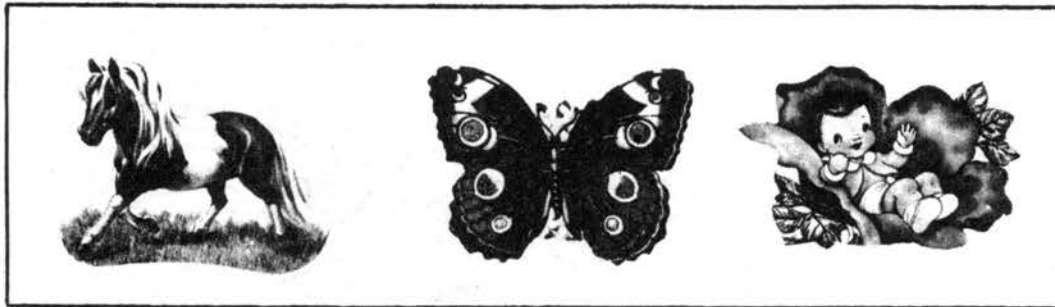
A validation test booklet was constructed similar in design to the M-F Test booklet. It consisted of 15 pages of clothing and 15 pages of toys and activities. Each page contained three pictures which were arbitrarily chosen as masculine, feminine and neutral. The booklet was shown to 20 middle-class adults (10 men and 10 women) who were asked to indicate the most masculine and the most feminine picture on each page. For example, on one page the three pictures were boys' pajamas, girls' pajamas and a nightgown. Without exception, the adults chose the boys' pajamas as the most masculine and the nightgown as the most feminine.

The validation booklet was then shown to 20 middle-class children (10 boys and 10 girls). Each child was asked to play a game of "Let's pretend" during which the experimenter told a story as the child made his choices. For example, as the child looked at a page showing three types of outdoor clothing, the experimenter said, "Let's suppose it is time to go out to play. What would you like to wear outside?" Then as he looked at the next page which showed three different toys, the experimenter said, "Let's suppose you are now outside and these toys are in the yard. Which one would you like to play with today?"

The method of scoring the validation test was the same as the method of scoring the M-F Test. Assigned scores for each picture in the validation booklet were figured for the adults and for the children. The adults agreed unanimously on the masculinity and femininity of the majority of the pictures, but the children showed greater flexibility in their choices. Nevertheless, there was extremely high agreement between the two sets of assigned scores. There were 90 individual pictures in the validation booklet, and the adults and children agreed on the masculine, feminine or neutral rating of 86 of these.

In order to answer the question of whether the M-F Test actually measured masculinity and femininity, the children's scores derived from their choices of pictures in the validation booklet, which were in agreement with cultural expectations, were compared to their M-F Test scores. The children's scores on the validation test ranged from -192 to +198, indicating a range from high-feminine to high-masculine preferences. (The maximum possible range was from -207 to +208.) The scores for these same children on the M-F Test ranged from -58 to +48, again indicating a range from high-feminine to high-masculine preferences. (The maximum possible range for these scores was from -73 to +67.)

The two sets of scores for the 20 children who participated in the validation study were compared in order to determine whether the M-F Test, which is completely free of adult bias, actually does measure masculinity and femininity. A Spearman rank order correlation was used in the analysis of the relationship between these two sets of scores. The correlation coefficient was +0.914, significant beyond the .01 level. In view of these results, the Starkweather M-F Test for preschool children is accepted as a valid measure of masculinity and femininity.



<u>1968 DKM Study</u>	<u>Pony</u>	<u>Butterfly</u>	<u>Baby</u>
Boys (N = 90)	63	12	15
Girls (N = 90)	23	21	46
	—	—	—
Assigned Value	+40	-09	-31

<u>1969 KGM Study</u>	<u>Pony</u>	<u>Butterfly</u>	<u>Baby</u>
Boys (N = 48)	35	09	04
Girls (N = 48)	15	12	21
	—	—	—
Assigned Value	+20	-03	-17

Figure 1. Method of calculating the masculine and feminine values for individual pictures in the Starkweather M-F Test.



<u>1967 SKW Study</u>	<u>Rooster</u>	<u>Chipmunk</u>	<u>Baby</u>
Boys (N = 17)	5	9	3
Girls (N = 15)	5	3	7
Girls (weighted)	5.67	3.40	7.93
Assigned Value	-0.67	+5.60	-4.93

Figure 2. Method of calculating the masculine and feminine values for individual pictures in the Starkweather M-F Test when weighting of scores is necessary.

**STARKWEATHER MASCULINITY-FEMININITY TEST**  
**FOR PRESCHOOL CHILDREN**

Name Child 7-1931 Sex 7 Number 1931  
 Date 9-27-71 Birthdate 6-14-67 Age 4:2  
 Testing Place Stillwater

	<u>Pictures</u>		<u>Score</u>		<u>Pictures</u>		<u>Score</u>		
1.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>-28</u>	11.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>-18</u>
2.	<u>  </u>	<u>  </u>	<u>✓</u>	<u>-10</u>	12.	<u>✓</u>	<u>  </u>	<u>  </u>	<u>-25</u>
3.	<u>✓</u>	<u>  </u>	<u>  </u>	<u>-06</u>	13.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>-05</u>
4.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>+04</u>	14.	<u>✓</u>	<u>  </u>	<u>  </u>	<u>-13</u>
5.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>-21</u>	15.	<u>  </u>	<u>  </u>	<u>✓</u>	<u>-03</u>
6.	<u>✓</u>	<u>  </u>	<u>  </u>	<u>+02</u>	16.	<u>  </u>	<u>  </u>	<u>✓</u>	<u>-23</u>
7.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>-29</u>	17.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>-26</u>
8.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>+02</u>	18.	<u>  </u>	<u>  </u>	<u>✓</u>	<u>-18</u>
9.	<u>  </u>	<u>  </u>	<u>✓</u>	<u>00</u>	19.	<u>  </u>	<u>✓</u>	<u>  </u>	<u>-18</u>
10.	<u>  </u>	<u>  </u>	<u>✓</u>	<u>-24</u>	20.	<u>✓</u>	<u>  </u>	<u>  </u>	<u>-18</u>

Total -277

VITA

Linda Elizabeth Skinner

Candidate for the Degree of

Master of Science

**Thesis:** SEX-ROLE IDENTIFICATION: THE MEASUREMENT OF MASCULINITY-FEMININITY IN EARLY CHILDHOOD

**Major Field:** Family Relations and Child Development

**Biographical:**

**Personal Data:** Born in Ponca City, Oklahoma, March 5, 1948, the daughter of DeRoy and Mildred Skinner.

**Education:** Attended grade school in Ponca City, Oklahoma; graduated from Ponca City Senior High School, Ponca City, Oklahoma, in May, 1966. Received a Bachelor of Science degree in Elementary Education from Oklahoma State University, Stillwater, Oklahoma, January, 1971. Attended Instituto Tecnológico de Monterrey, Monterrey, Mexico, summer, 1969. Completed requirements for the Master of Science degree in May, 1972.

**Professional Experience:** Bluebird Camp Counselor, Ponca City, Oklahoma, summer, 1966; Counselor for Kiwanis Camp for Underprivileged and Delinquent Children, Ponca City, Oklahoma, summer, 1966; First Baptist Church Nursery Bible School Teacher, Ponca City, Oklahoma, summer, 1967; Headstart Volunteer, Stillwater, Oklahoma, 1967-1968; Jefferson Elementary School Student Teacher, Ponca City, Oklahoma, 1970; CAP Neighborhood Nursery Volunteer, Stillwater, Oklahoma, 1971; Graduate Research Assistant, Department of Family Relations and Child Development, Oklahoma State University, Stillwater, Oklahoma, 1971-1972.

**Professional Organizations:** Omicron Nu, Kappa Delta Pi, Oklahoma Health and Welfare Association, Southern Association on Children Under Six, National Association for the Education of Young Children.