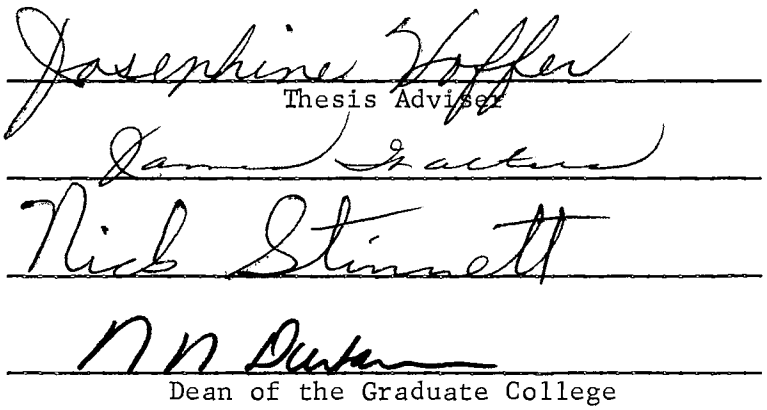
PRESCHOOL CHILDREN'S COLOR

PREFERENCES IN CLOTHING

FOR OPPOSITE SEX

Thesis Approved:



Thesis Adviser

Dean of the Graduate College

ACKNOWLEDGMENTS

I wish to express my appreciation to all who have contributed to the completion of this study. Special thanks and appreciation is expressed to my adviser, Dr. Josephine Hoffer, Associate Professor and Acting Head, Department of Family Relations and Child Development, for encouragement, understanding, and guidance throughout the study. Appreciation is expressed to Dr. James Walters, Professor, Department of Family Relations and Child Development, and Dr. Nick Stinnett, Associate Professor, Department of Family Relations and Child Development, for their interest, advice and critical reading of the manuscript. Appreciation is expressed to the children from the Oklahoma State University Laboratory School who participated in this study and to their teachers for their cooperation.

Warm appreciation is extended to my parents for their continuous encouragement and faith in my endeavors. Love and appreciation go to my husband, Lewis, for his patience and encouragement.

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CHAPTER I

THE PROBLEM AND ITS IMPORTANCE

This study was concerned with differences in children's color preference in clothing for the opposite sex. Research has indicated that children at an early age have color preferences (Easterling, 1974; Streight, 1974), however, there is no evidence to indicate that boys prefer the same color for girls that they prefer for themselves or that girls prefer the same colors for boys as they prefer for themselves.

Need for Study

Color exists everywhere in the modern world yet little is known about the reactions of individuals to color or the effect of color upon individuals, especially children (Gale, 1933).

Abbott wrote:

> That color has definite effects on the minds and bodies of man and some animals and influences the growth of some plant life . . . . Man is still groping for the explanations of some of these effects, but in the meantime he is using the power of color as he finds it to accomplish certain ends (p. 129).

Children's lives are influenced to a greater extent today than ever before by the wide and varied use of color. The major investigations of children's color preferences were completed in the 1930's (Collier, 1956). It is known that individuals tend to have strong likes or dislikes concerning colors (Sargent, 1923; Birren, 1955). Children's emotional responses to colors are influenced by past experiences (Staples

and Walton, 1933).

Sargent (1923) stated:

> Any trustworthy classification of the color preferences of people on a basis of the direct appeal of a given color on the emotions is difficult to obtain. Our responses to color are bound up with associations of other experiences. A child's attitude toward a color may be affected if he has seen it worn by a person whom he especially likes or dislikes, or if he has been prominently connected with experiences pleasant or otherwise (p. 47).

Color preferences have been examined in relation to the following variables: age (Collier, 1956); sex (Jastrow, 1897); socio-economic status (Michaels, 1924); race (Hurlock, 1927); and personality (Bjerstedt, 1960). Sex differences have been found in color preferences of individuals (Jastrow, 1897; Dorcus, 1926; Collier, 1956). However, research is lacking concerning children's color preferences for the opposite sex.

Knowledge of children's color preferences for the opposite sex should add to the basis for the choice of color in the manufacturing of toys, books and other educational material for children. This information will also be beneficial to teachers and parents in planning suitable environments for children that are conducive to learning, as well as aid in the selection of materials for their children.

The Purposes of the Study

The purpose of this study was to examine differences in young children's color preferences for the opposite sex as related to preference for color in clothing.

Hypothesis

To achieve the purpose of this study, the following hypothesis was examined: There is no difference in children's color preferences for the opposite sex as related to clothing:

a. shirts or blouses

b. trouser or skirts

c. shoes

Definition of Terms

The following terms, with the exception of neutral colors, were used by Easterling (1973) and defined as follows:

Color

Webster's Dictionary (1965) defined color as "a phenomenon of light (as red, brown, pink, gray) or visual perception that enables one to differentiate otherwise identical objects" (p. 168). In this study an extended meaning of color will be used. This definition includes the visual sensation, distinct from form and embraces such terms as "pigment," "colorant," and "coloring matter." The three properties of color significant to this investigation are hue, value, and intensity or chroma (Schwartz, 1960).

Hue

There are three major qualities of color which may be used to describe any given color. These terms may be defined as follows. Hue (color) refers to the chromatic quality of a color which we indicate by

its name (such as blue). In order to change the hue of a color, another color is mixed with it (Sargent, 1923).

Value

Value (brightness) refers to the relation of a color to black and white. In order to change the value of a color, it is mixed with something lighter or darker than itself (Sargent, 1923).

Intensity

Intensity (chroma or saturation) refers to the color strength of a hue as compared with a colorless gray. This comparison is being made when a color is said to be a brilliant blue or a dull blue. In order to change the intensity of a color, it is mixed with something to make it grayer than it is. The intensity may be reduced by adding some of the complement to it. The intensity may also be reduced by mixing the color with a neutral gray which is neither darker nor lighter than itself--in this case the intensity is changed without changing the value or hue (Sargent, 1923).

Munsell (1946) further illustrates the meanings of the color terms and how these qualities interact:

> Every color sensation unites three distinct qualities, defined as HUE, VALUE, AND CHROMA (intensity). One quality may be varied without disturbing the other. Thus, a color may be weakened or strengthened in Chroma without changing its Value or Hue. Or its Hue may be modified without changing its Value or Chroma. Finally, its Value may be changed without affecting its Hue or Chroma (p. 14).

Primary Colors

The six colors to be used for the purposes of this investigation

are the primary and secondary colors. The primary colors (red, blue and yellow) are those colors that cannot be produced from other colors (Webster's Dictionary, 1965).

Secondary Colors

The secondary colors (violet, green and orange) are those colors that may be formed by mixing two primary colors in equal or equivalent quantities (Webster's Dictionary, 1965).

Shades and Tints

Two color terms that are related to this study are shades and tints. Webster's Dictionary (1965) defined a shade as being a variation of a color produced by adding black to it. A tint is a color variation produced by adding white to it.

Color Spectrum

Another color term utilized in this study is that of color spectrum. The spectrum refers to the series of images formed when a beam of radiant energy is subjected to dispersion and brought to focus so that the component waves are arranged in the order of their wave lengths (Webster's Dictionary, 1965). The colors are arranged from red, the longest wave length, to violet, the shortest wave length. The color spectrum may be evidenced when viewing a rainbow or when looking at the colors that are dispersed by a prism held in the sunlight.

Color Preference

For the purpose of this study, the term color preferences may be

defined. Woodworth (1938) defined this term as "the color which was selected first from the sample of possible choices presented to a person" (p. 381).

Neutral Colors

Some of the neutral colors are black and white which do not look like any other color of the spectrum. No color quality is found in them but they differ in the quality of light which is reflected from them. White is the result of an equal degree of reflection of all color rays, while black absorbs all color rays equally and no rays are reflected (Bone, Ocvirk, Stinson, Wigg, 1962).

CHAPTER II

RELATED LITERATURE

Age and Color Preference

Jastrow (1897) tested the color preferences of 4,500 individuals, ages 6 to 70 years old and found a relationship between their age and color preferences. His findings revealed blue to be the most preferred color by a little more than one-quarter of the total number of voters. Specifically, blue was least preferred by the youngest group of individuals, 18 years and under, while the oldest group, 41 years and above, definitely preferred blue. He concluded that the over-all preference for blue increases with age. Red was voted second in preference, with a lighter red preferred by individuals 18 years of age and younger. Violet was found to be avoided with an increase in age. According to Holden and Bosse (1900) who studied the color preferences of 200 children from 7 months to 13 years of age, children develop color preferences from the red end of the color spectrum to the blue end, until the age of eight when blue becomes the preferred color.

Katz and Breed (1922) investigated the color preferences of 2,500 subjects attending public schools in the first grade through and including college freshmen, to determine whether color preference varies with an increase in age. The investigators reported:

> (1) Forty-seven per cent found blue the most pleasing of the six spectral colors used. Green was a distant second, red a

> close third, violet and yellow occupied the next positions and orange proved the least pleasing of the six.
> (2) There was in general a distinct rise in the preference values of green, blue and violet, the colors of short wave length, and a corresponding decline in the values of red, orange, and yellow, the colors of long wave length, as the children advance in age and grade.
> (3) In the comparison of pre-adolescents with adolescents, the most noticeable differences were the marked loss in the popularity of orange and yellow and the increase in the popularity of green as the children matured (p. 265).

Michaels (1924) tested the color preferences of 535 boys attending a public school in New York. His subjects, ranging in age from 6 to 15 years, were tested by use of a primary and secondary color chart. A survey of the total number of boys tested revealed that they ranked their color preferences in the following descending order: blue, red, violet, orange, yellow, and green. Differences in the order of color preferences for various age groups were reported by the investigator to be due to the individual's physical and psychological growth.

Riker (1925) tested a total of 1,199 elementary school children in Wisconsin in grades 1 through 8. Four colors with one tint and one shade of each were used. The saturated colors were red, blue, yellow, and green, making a total of twelve colors in all. With an increase in age there seemed to be a steady change of color choices. Red remained constant while there was a steady increase in favor of blue in addition to a growing appreciation for green. Findings reported by Garth (1922), Garth, Ikeda and Langdon (1931), and Garth and Collado (1929), in their studies concerning the color preferences of full blood Indians, Japanese and Filipino children support the conclusion that color preferences change with an increase in age.

Garth and Porter (1934) studied a total of 1,032 young children, ranging in age from one to seven years, attending either a preschool,

kindergarten or first grade from sections in Colorado and Arizona. The six spectral colors plus white were used in administering the test. The results indicated that white was the least liked color. All ages were in agreement that red was the most preferred color, but this preference declined in the first grade. The popularity of blue tended to increase with age.

Bou and Lopez (1953) gathered a representative sample of 2,496 Puerto Rican children attending elementary school in grades 2, 4 and 6. The findings revealed that blue was chosen as a constant favorite among all children, although blue was strongly favored more by the older children in comparison with the younger ones. Orange was least preferred by all three age groups. Next to the preference of blue, followed red, then yellow. The subjects, on the whole, preferred the primary colors to the secondary colors. The number of children who selected red, yellow, and violet, lessened as grade level increased.

Findings reported by Gale (1933) conflict with the results of other studies in that she found no change in the relationship between color preference and age. She studied children in four Chicago elementary schools from grades one through eight. The results of her test for single color preference showed that orange, red-violet and blue were preferred in the order named. Orange and red-violet were preferred for first and second choices in all grades except for grade eight. Blue, green, violet and yellow received the smallest number of choices. A warm color was chosen for the first color preference in all grades. Yellow was the least preferred color. Gale (1933) stated:

> The most striking conclusion to be drawn from this experiment is that the child's accumulating experience with color throughout the grades did not affect his preferences for the

> color combinations in grades 3 to 8. Either children's experience with color in the grades was not strong enough to effect a change in preference, or children's innate preferences for color are not capable of being changed during that period (p. 155).

A more contemporary study by Collier (1956) was conducted with 591 children randomly picked from grades 1, 3, 5 and 7 of two city, two suburban and two central schools within a radius of 60 miles of Syracuse, New York. Eight colors were selected consisting of the six spectral colors plus gray and white. The order of preference for the eight colors tested for the most preferred color was yellow, orange, red, blue, violet, white, green, and gray. The summary of his findings were:

> (1) Yellow was the most preferred, gray least preferred at all grade levels. (2) With increased age, children exhibited a tendency to conform more and more to a single pattern of color preferences. (3) The 'warm' colors of red, orange, and yellow always occupied the first three ranked positions regardless of grade level (p. 81).

Bjerstedt (1960) investigated the age differences in relation to color preferences of 603 individuals comprised of preschool age children up through and including university students. The results of the investigation indicated, that the younger individuals tested preferred more warm color patterns, while the older individuals had a preference for the cooler patterns.

More recently, Child, Hansen, and Hornbeck (1968) studied over 1,100 children in grades one through twelve to determine their color preferences. The subjects were shown color pairs. They indicated their choice by indicating their color preference for one color over the other on a mimeograph sheet. Findings indicated a consistent preference for cool hues and high saturation at all ages. In addition, there was a weakening of childhood preference for high chroma, while hue became

the more important determinant of color preference with an increase in age.

Hunt (1959) studied the color preferences of 128 children in relation to clothing selection. Children ranged in age from three years up to, but not including, 11 and were selected from Northwestern University Children's Summer School in Evanston, Illinois. Color preferences were investigated by presenting six illustrations of T-shirts in each of the spectral colors (standard colors) at maximum saturation. Brightness preferences were investigated by presenting twelve colored T-shirts representing six spectral colors plus a lighter and a darker level of each spectral color. An analysis of children's color preferences revealed the following:

> (1) The variation among colors was highly significant. Orange and violet were considered less preferred than red, yellow, green, and blue. (2) Color preferences tended to vary significantly with age, but not with sex. Red, which was most popular with the five- and six-year-olds and became decreasingly popular with advancing age. Green, which was ranked third by the five-year-olds, became increasingly popular until it ranked first by the nine- and ten-year-olds (p. 34).

Results of this study support the findings of Garth (1924), whose data from similar age groups indicated that there was a decreasing preference for red and an increasing preference for green with increase in age. A summary of the children's brightness preferences revealed the following:

> (1) The variation among brightness levels were highly significant. Lighter levels were most preferred followed closely by the standard levels. The darker levels were considerably less favored. (2) Brightness preferences tended to vary with color. Although the darker levels of red, orange, yellow, and green were slightly more preferred than the lighter levels, whereas the lighter levels of blue and violet were overwhelmingly preferred to the standard levels (p. 35).

Easterling (1974) studied 97 three-, four-, and five-year-old children to determine their color preferences and to ascertain the

consistency of their color preferences in relation to their expressed color preferences for clothes and toys. Children tested were enrolled in nursery schools, day care centers, and child development laboratories in Stillwater, Oklahoma. The results indicated that there were no marked differences in color preferences of children according to their age. Studies by Katz and Breed (1922), Garth and Porter (1934), Gale (1933), and Collier (1956) were in agreement with this finding. Studies by Jastrow (1897), Ricker (1925), Garth (1922), Garth, Ikeda and Langdon (1931), Garth and Collado (1929), and Bou and Lopez (1953) conflicted with Easterling's investigation in that those studies support the conclusion that color preferences do change with increased age. Easterling found violet to be the most preferred color for all age groups tested. Orange was chosen the least number of times for the children's first preference. Violet was not found to be a preferred color at any age level in the studies by Collier (1956), Garth and Porter (1934), Katz and Breed (1922), and Eysenck (1941). Another result of Easterling's indicated a low relationship between young children's color preferences and their choice for toys and clothes although violet was preferred in both toys and clothes generally at each age level. Easterling retested subjects after a four-week interval and found little difference in young children's color preferences. Children's rank order of color preferences in the first test was violet, green, yellow, red, blue, and orange in descending order. In comparison, the rank order on the retest for color preferences was violet, red, blue, yellow, green, and orange in descending order. Violet remained the preferred color of all children on both the test and retest. Orange remaining the least preferred. Violet remained the preferred color on the retest involving the

consistency of children's selected color preferences in relation to clothing and toy selection, with a few exceptions.

Streight (1974) after a six-month interval, studied the same children reported by Easterling (1974), to determine the consistency of color preference six months later concerning their color preference for clothes and toys. A total of 78 subjects were tested. Results of children's expressed color preferences classified according to age revealed violet as first choice with the exception of the three-year-olds and red and blue as the second and third choices. Preferences in descending order are violet, red, blue, green, orange, and yellow. Yellow as the least preferred color conflicts with the findings of Easterling (1974) who found orange to be the least preferred color six months earlier. A low relationship between young children's color preference and their choice for clothes and toys was found which agrees with the Easterling (1974) study. The consistency with which children chose color for clothes and toys as related to their first color preference when retested six months later showed red to be the over-all preferred color with violet as a close second. Violet was selected by children at each age level for clothes in general, while the color red rather than violet was the first choice overall for toys. There was a low relationship between young children's color preference and their choice for furniture and room decor, although violet continued to be selected as the children's first color preference, generally more often than any other color.

Race and Color Preference

Garth (1922) investigated the effects of race on color preference.

Subjects of his investigation were 559 full-blood Indians, 174 mixed-blood Indians, and 560 white persons (ages 11-21 years). The method of simultaneous presentation in ranking the order of color preferences for the six spectral colors plus white was incorporated for this study. The sequence of color preferences for full-blood Indians was red, blue, violet, green, orange, yellow and white, with red being the most preferred color. The mixed blood subjects preferred the colors blue, red, violet, white, green, orange and yellow in descending order. The sequence of the white subjects' order of color preference was blue, green, red, violet, orange, yellow, and white, with blue being the most preferred color.

Garth (1924) after a two-year interval, tested the color preferences of 1,000 white children in grades one through ten. The subjects arranged in order of preference seven colored disc consisting of the six spectral colors plus white. The color preference of the subjects running from the most preferred to the least preferred are blue, green, red, violet, orange, yellow, and white. Measures of overlapping indicated that differences were not significant in the case of red, green, violet, and orange. The results revealed a definite preference in blue, the excessive, esteemed color and yellow and white, the least esteemed colors. In Garth's opinion: "Education seems to produce a tendency toward suppression of preference for all colors excepting blue in this case of white subjects, as measured in terms of scale values" (p. 241).

Mercer (1925) tested the color preference of 1,006 negroes in all grades from the first through eleventh in Texas public schools. Subjects ranged in age from 6 to 21. Colored disc were available in the

six spectral colors plus white that subjects ranked simultaneously in their order or preference. The descending order of color preference for 1,006 negroes was blue, orange, green, violet, red, yellow, and white, with only a slight difference between the colors green and violet. In comparing the results of this study involving the negroes subjects with previous studies using white subjects with respect to their color preferences, both races chose blue as their most preferred color. However, it was concluded that the white subjects had a greater color preference discriminating ability than the negro subjects tested.

Hurlock (1927) investigated the color preferences of 400 children consisting of 194 white subjects and 206 negro subjects of both sexes. The children tested attended public school in the city of New York and came from similar environmental conditions. The subjects were presented with a slip of paper listing colors in the following order: green, red, brown, crimson, pink, blue, violet, white, purple, yellow, orange, gray and black. After each subject read through the list of colors they underlined the word which represented the name of their favorite color. The results indicated blue to be the most preferred color by both white and negro groups, with pink ranking a close second, although a greater percentage of negro than white children preferred it. The colors black, brown, and gray were chosen the least. Hurlock concluded:

> The facts brought out by this study do not confirm the popular belief that negro children have a far greater tendency towards bright colors than do white children. It would be nearer the truth to say that the difference in the color preferences of the white and negro children of this experiment are slight and that within racial groups the differences are as great as between the groups (p. 404).

Gesche (1927) was interested in finding whether racial differences in color choices existed in a Mexican racial group. He tested 1,052

Mexican children from the San Antonio Public Schools. Children were asked to rank colored discs consisting of six spectral colors plus white in order of their preference. The results indicated red, green, blue, violet, orange, white, and yellow to be the color preference sequence in descending order for the Mexican children tested. In comparing the color preferences of whites and Mexicans, no significant differences were found.

Color preferences of 1,004 full-blooded Filipino children, grades one through the first years in high school, were studied by Garth and Collado (1929). Seven colored discs consisting of the six spectral colors plus white were placed simultaneously on each individual's desk. The subjects then were asked to select the colors he liked best and rank them in order of preference. The sequence of the color preferences for Filipino children beginning with the most preferred designated red, green, blue, violet, orange, white, yellow with blue, and green and orange about equal respectively. Results indicated the Filipinos to have a very short color preference scale which indicated some inability to discriminate feelings of difference for several of the colors compared. A similarity was found between Filipinos and American Indians in their preference for red. Another similarity existed among young Filipinos, young white and other races with respect especially to the colors red and white.

Garth, Ikeda and Langdon (1931) studied the color preferences of 1,011 Japanese school children from the first through tenth grades and found red to be the most preferred color which agrees with the preferences for Indian and Mexican subjects previously studied.

Shen (1937) tested 1,368 Chinese senior middle school students'

color preferences in the six spectral plus white using the paired comparison technique. The order of preference was white, red, blue, green, yellow, orange and violet, with white being the most preferred color. In comparison with other racial groups previously studied, no investigator found white to be consistently selected as the most preferred color. The investigator suggests that the Chinese language is probably responsible for this result.

Williams (1964), Williams (1966), Renninger and Williams (1966), Williams and Roberson (1967), Williams and Edwards (1969) conducted studies on the practice of designating racial groups by color names (preschoolers and adults). The color names white and black are frequently used in non-racial contents as symbols of good and evil and the researchers wondered whether the designation by these terms influenced how the groups were perceived. Of the 10 color names studied by Williams (1964) white was shown to be most positive in evaluative meaning and black the most negative in evaluative meaning. Williams (1966) found the evaluative connotations associated with the names of five racial groups (Caucasian, Negro, Oriental, American Indian, and Asiatic Indian) a high resemblance to the evaluative connotations of the color names by which these groups are commonly designated.

Socio-Economic Status and Color Preferences

Winch (1909) studied the color preference of subjects ranging from ages 7 to 15 years. Schools were chosen from various parts of London, representing different social classes, consisting of high, middle and low socio-economic groups. Results from this study indicated that the

social status of the children tested influenced the development of their color preferences. A similarity was found in the order of color preferences of children tested from the high and middle socio-economic schools. Blue, red, yellow, green, white, and black were the preferred colors in descending order for the early grades. A change in the order of children's preferred colors was found in testing the higher grades. The colors preferred for the higher grades in descending order were red, white, green, yellow, and black, although later the children preferred green over white. Differences were found involving children's color preferences in lower socio-economic schools. The order of color preferences for the early grades in the lower socio-economic schools was identical to the children's order of color preference for the middle and higher socio-economic levels, although black, the least preferred color, was rated higher by children in the low socio-economic schools in comparison to the middle and higher socio-economic schools. Children in the higher grades showed a change in their color preferences and preferred the colors blue, red, green, white, and black in descending order. This change concerning the order of color preferences remained constant for all higher grades.

Color preferences of 535 New York City boys, ages 6 to 15, were tested by Michaels (1924) who compared boys in the working class and high socio-economic neighborhoods. Results of his study indicate that economic status does affect the development of preference for colors. Twenty-seven ten-year-old boys were tested from the high socio-economic area and their rank order of color preference in descending order was violet, red, and blue (red and blue were almost equal), orange, yellow, and green. Different results were obtained in the testing of 88

ten-year-old boys from the working class neighborhood. The ranked order of color preference was blue, orange, red, violet, yellow, and green, with red and violet at a close tie for third place although red was slightly favored. Ricker (1925), in testing 1,199 elementary school children in grades 1 through 8 found that socio-economic status influenced the development of color preferences. Studies by Winch (1909) and Michael (1924) also support this finding.

Katz and Breed (1922) tested children from 5 to 15 years of age to ascertain whether social status is a determining factor in their color preferences. Red was found to be a greater favorite among children from low socio-economic neighborhoods in comparison to children from high socio-economic neighborhoods during their earlier years. Green was preferred more among children in the high socio-economic neighborhood in comparison to children from the low-economic neighborhoods. Nevertheless, differences due to social status were gradually overcome as children advanced in age and school attainment.

Personality and Color Preferences

Colors seem to differ as psychic makeup differs, according to Jaensch (1930). The reactions to colors are inclined to be impulsive and emotional (Birren, 1955). Sargent (1923) discloses that color influences direct effects which are likely to give us impressions of warmth or coolness. Red is inclined to arouse emotional excitement stronger in comparison to any other color, while the influence of blue causes the exact opposite by having a more tranquil effect.

According to Maria Rickers-Ovsianhina (1943) and Jaensch (1930), a person preferring warm colors is the outwardly integrated type

characterized by being receptive, more open to outside influences and seems to readily submerge himself in his social environment. The cold dominant subject, the integrated type has a detached attitude toward the outside world, finding it difficult to adapt to new experiences and to express himself freely.

Many (1953) describes the relationship between color and emotions. He wrote:

> Because of the association with human experience, a color tone means a certain quality and should arouse the feeling inherent in that quality. Yellow is like the sun and artificial light . . . so, by association, yellow introduces feelings of light and cheer. Red is the color of fire. It seems to reach man's consciousness more quickly than any other color. It is aggressive and introduces the qualities of heat and aggression (p. 2).

Holden and Bosse (1900) in studying 200 children 7 months to 13 years found that colors effect the emotions of a person as indicated:

> . . . in general, the predominating or what we may call the background colors in nature are the blues and greens--the colors of the sky, the sea, the words and the fields. The yellow and reds, complementary to the background colors are found in smaller masses, and serve to call attention to particular objects, such as the blooming flower and the ripened fruit. These colors we may call the accent colors in nature.
>
> The colors of the red end of the spectrum are generally conceded to be exciting or irritating when presented in large masses. Some of the lower animals are thrown into a frenzy at the sight of them. The greens and blues on the contrary, are known to be quieting and restful (p. 70).

Holden and Bosse also studied 30 infants between the ages of 6 and 12 months concerning the reactions infants have to colors. They stated:

> The young infant, it would seem, responds to the exciting colors in a physiological or almost instinctive way, choosing the colors of the red end of the spectrum before those of the blue. As mental processes dominate the earlier more physiological reactions, we find an indifference to all colors, and later a dislike for the exciting colors of the blue end of the spectrum (p. 276).

Alschuler and Hattwick (1947) analyzed the art expression of children from ages 3 to 5 years. A delight in color usually displayed emotional tendencies, while self control and repression of emotion was connected with the repeated use of colors black and white. Red was connected with excited an uninhibited expression, while the use of yellow appeared to accompany infantile traits and dependence on grownups. The use of green illustrated balance, fewer emotional impulses, and a simple, uncomplicated nature.

Hurlock and Thompson (1934) examined 2,292 pictures drawn by children attending kindergarten, first and second grades. They found that children, ages 4 and 5, used colors naturally, with interest and for the pleasure such colors offered them. An appropriate use of colors by 5 and 6 year olds was exhibited in their pictures and this tended to increase with age.

As reported by Bjerstedt (1960) who studied 603 Swedish individuals from preschool children up to university students found among the younger individuals a preference for warm colors while the older individuals preferred cool colors. In studying 30 university students more extensively on task accomplishment in two experiments, he found subjects who selected warm colors were inclined toward stimulus openness or receptivity, while persons who selected cool colors were inclined toward stimulus reworking or selectivity. He concluded that warm color selectors showed certain behavioral tendencies which most often represented activity, directness, and need gratification. An attitude of life enjoyment rather than an attitude of moral or intellectual selection was expressed by individuals' preference for warm colors.

The following investigators, Bullough (1907), Goldstein (1942),

Bricks (1944), Birren (1950) and Goldberg (1961) studied warm and cool color preferences of mentally ill patients. Preference for the warmer and brighter colors (red, yellow, and orange) was indicated by patients who exhibited emotionally high spirits and were physically active, while those patients preferring the cooler colors (green, blue, and purple) were characterized as being emotionally depressed and physically inactive. In conclusion, Bullough (1907) reported that an individual's preference for warm colors or cool colors may be associated in the last analysis by the individual's desire to be stimulated (preference for warm colors) or to be soothed (preference for cool colors).

Sex and Color Preferences

Jastrow (1897) when comparing adult color preferences of males and females found considerable difference. Blue overwhelmingly was the masculine favorite, while women chose red as their favorite color with blue as the close second. In addition, women expressed a preference for lighter red (or pink) and to a lesser extent the colors green and yellow, while the colors related to blue (blue violet and violet) were the masculine preference. It was also concluded that men restrict their color selection to fewer choices in comparison to women.

Winch (1909) found that the color blue was most preferred and the color black was least preferred by both sexes, but there was a variability in the subjects ranking the colors, yellow and green located in the middle of the color spectrum. Dashiell (1917) compared 212 kindergarten children from nine Minneapolis kindergartens, both public and private, and including children of all classes with 126 sophomores from the University of Minnesota. All subjects were tested on their color

preferences for the six spectral colors. Results indicated that for single colors both sexes at both ages showed a similarity in their preference of specific colors but substantial difference was indicated in the order of preference.

No pronounced differences were found in the color preferences of the two sexes studied by Katz and Breed (1922). Studies by Garth (1924), Mercer (1925), Hurlock (1927), Gesche (1927), Garth and Collado (1941), and Garth, Ikeda and Langdon (1931) found in testing for sex differences in children's color preferences from various cultures, no significant differences. The only major differences lie in the ranking of yellow, green, orange, and violet and there was an inconsistency in the order for these colors. The number of colors and the colors used, the culture of the subjects, and the procedure in testing, may have affected the results of the findings which stated that no consistent order of color preferences for either sex exist.

Katz and Breed (1922) studied 250 kindergarten children individually concerning their preference for saturated colors. Each of the six spectral colors were represented with a tint and shade of each. Results indicated that boys and girls were alike in their color preferences of saturated colors. The tints and shades were of equal value for the boys, while for the girls the tints were more often preferred than the shades.

Ricker (1925) studied color preferences of 1,199 elementary school children in Wisconsin using four colors with a tint and shade of each: red, blue, yellow, and green, making a total of twelve colors. Grades 1 through 8 were tested. Sex differences were found in their color preferences. There seemed to be a slight desire for girls to prefer

more tints and shades than boys. With increased age, girls tended to show an increase in their preference for a tint of blue, and boys showed a slight decrease. Boys of all ages found the shade of blue unpopular, while girls showed a steady decline in its favor. Yellow remained constant with girls but dropped with boys.

Dorcus (1926) in comparing the order of preferences for both sexes found slight differences. He stated that "yellow has a lower affective value for the females than with males" (p. 416). St. George (1938) studied the color preferences of 500 college men and women and found no significant differences. The sequence for men was blue, green, red, orange, yellow, violet, white, while women showed preference for blue, green, red, yellow, orange, violet, and white in descending order.

Eysenck (1941) did an all-inclusive study on 15 men and 15 women concerning their color preferences and found a high agreement. Blue, red, green, violet, orange, and yellow were the rank order of color preferences with blue being the most preferred color. The average order of preferred colors of both sexes was identical with a correlation .95, although men slightly preferred the color orange while women showed a preference for yellow. Eysenck reviewed 17 investigations on color preference giving average orders for men, along with 16 investigations giving average orders for women, plus total averages for the orders of both sexes separately and compared these findings with his own findings. Eysenck found the correlation between the males and females order of color preference to be .95, which was identical to his study.

No differences were reported by Granger (1959) who studied the color preferences of both sexes. Child, Hansen, and Hornbeck (1968) studied children's expressed personal color preferences in grades 1

through 12. He confirmed that males and females do not differ in the general direction of their color preferences.

Hunt (1959) studied children's color preferences, ages 3 to 10, in relation to clothing selection. Of the 64 boys and 64 girls tested, using the six spectral colors, no significant sex differences were found. This agrees with the conclusion drawn by Katz and Breed (1922), who also reported no striking differences between color preferences of the sexes. Brightness preferences were also investigated by Hunt using the six spectral colors plus a tint and shade of each. The investigator concluded that the tints of the spectral colors were more popular with the girls than the boys, while the shades of the spectral colors were more popular with the boys than the girls.

Collier (1956) studied the color preferences of 308 boys and 283 girls in first, third, fifth, and seventh grade levels. The six spectral colors and a shade and tint of each, plus gray and white were the colors used in testing these children. The results indicated slight differences in the color preference of both sexes. Green was ranked higher by boys than girls, while more girls than boys ranked white higher. It was also found that more boys than girls preferred the shade of colors, while more girls than boys preferred the tint of colors. The shade of colors were least preferred by both boys and girls tested.

Easterling (1974) recently studied 45 boys and 52 girls of ages three, four, and five concerning their color preferences. Sex differences were found in color preferences and their rank order, but none were significant. In addition, no consistent order of color preferences for either sex was established. Differences occurred in four-year-old children when boys chose red first and violet as a close second in their

color preferences, whereas girls chose yellow and violet an equal number of times for their first preference. Differences were also indicated in five-year-old children when the boys chose blue as their first preference with violet as a close second, while girls decidedly chose violet as their first preference. Streight (1974) retested children used in the previous study after a six-month interval. It was found that children's color preferences in general remained the same.

The review of literature indicated that children's color preferences are influenced by various factors including age, socio-economic status, race, and personality. Sex differences were found concerning children's color preferences, however, research is lacking in the area pertaining to young children's color preferences as related to the opposite sex. On the basis of findings from the literature the present study was undertaken to obtain information related to young children's color preferences for the opposite sex in clothing.

CHAPTER III

PROCEDURE

To achieve the purpose of this study, which was to examine young children's color preferences for the opposite sex as related to clothing, the following steps were followed: (1) development of an instrument, (2) selection of subjects, and (3) administration of the instrument.

Development of Color Test Instrument

Criteria for Test

The following criteria were considered in constructing the color test instrument, the Color Preference for the Opposite Sex (CPFOS) to allow:

(1) Young children to respond readily, thus eliminating the need to respond through writing, reading, or verbal ability.

(2) For individual testing of a child.

(3) For maintaining the child's interest level.

(4) For minimum fatigue and to permit the child to complete the test without being removed from the regular routine of the school day for a long period of time.

(5) The elimination of extraneous stimuli during the testing period.

(6) For objective scoring.

Materials Needed

A boy and girl doll made of masonite board were patterned from the Peabody Language Kit (1968). Each doll measured 22" in height. To facilitate the dressing of the dolls, each was covered with a pale pink flannel to allow articles of clothing to adhere. The complexion of each doll was achieved by applying a flesh tone acrylic paint. Features of each face were drawn with a graphite pencil. The hair coloring of each doll was painted in black acrylic (Appendix A). The clothing patterns were selected from the Peabody Language Kit (1968) for both dolls. Appropriate patterns were selected for each doll due to the children's familiarity with each article of clothing. Clothing for the girl doll consisted of skirts, blouses, and shoes. Clothing for the boy doll consisted of pants, shirts, and shoes (Appendix A). Each pair of shoes was placed in a clear plastic envelope. Each article of clothing was represented in the following colors: the six spectral colors, a pastel shade for each spectral color and the addition of the colors black, brown, and white. The colored paper used in the preparation of the testing materials were the color-aid papers purchased from the Geller Artists Materials, Inc., 116-120 East 27th Street, New York, New York. To facilitate dressing the dolls, each article of clothing was backed with a pale pink flannel to allow clothing to adhere to the dolls.

Pilot Test

Five children (ages 2-6) were administered the test to determine accuracy and clarity of items and to ascertain children's ability to

respond. From the results of this pre-test the instrument was accepted as useful in measuring children's color preferences in clothing.

Selection of Subjects

The subjects for this study were 45 preschool children aged 3 to 6 years enrolled in the Child Development Laboratories, Oklahoma State University, Stillwater, Oklahoma. There were 24 boys and 21 girls.

TABLE I

AGES OF CHILDREN CLASSIFIED ACCORDING TO SEX

	Threes	Fours	Fives	Sixes	Total
Boys	7	12	5	0	24
Girls	8	9	3	1	21
Total	15	21	8	1	45

Administration of the Instrument

Environmental Controls

The environmental controls were consistent for all children taking the color preference test. In order to control for extraneous color stimuli each child was seated at a table covered with a neutral gray cloth. The stimulus objects were cast simultaneously from brown envelopes before each individual child. The experimenter was dressed in

gray clothing so as not to influence a child's preference for any particular color. Artificial lighting was supplied by a flourescent desk lamp, serving as an adequate substitute for average daylight during the testing period.

Method of Presentation

The method of simultaneous presentation was utilized in testing each child. The child and investigator were then seated at the table. When rapport was established, the investigator explained to the child the procedures for the test. The doll clothes for the same sex as the subject being examined were cast from the brown envelopes onto the table. The investigator then separated the clothes so all colors were visible. The doll of the same sex as the subject was placed on the table. If the subject was a girl she was instructed to dress the girl doll in the colors she thought girls should wear and if the subject was a boy he was instructed to dress the boy doll in the colors he thought boys should wear. When the child had dressed the doll the investigator placed it under the table face down so the subject could not view the colors he chose as he dressed the second doll. The investigator and subject returned the remaining clothes into their original envelopes. Clothes for the doll opposite the sex of the subject were cast from brown envelopes onto the table. The investigator separated the clothes allowing all colors to be visible. The doll of the opposite sex of the subject was then placed on the table. If the subject was a girl, she was instructed to dress the boy doll in the colors she thought boys should wear, and if the subject was a boy, he was instructed to dress the girl doll in the colors he thought girls should wear. The subject and the investigator

then returned the remaining doll clothes to their original envelopes. The child was allowed as much time as was needed to choose the preferred colors and dress the dolls (actual testing time was from 5-10 minutes). The investigator recorded the subjects' responses for both the boy and girl dolls on a record sheet (Appendix B). Before testing the next subject, the investigator collected the articles of clothing for each doll and returned them to their proper envelopes. The same procedure was followed in testing all subjects.

CHAPTER IV

ANALYSIS OF DATA

The overall purpose of this study was to examine differences in young children's color preferences for the opposite sex as related to preference for color in clothing. To achieve this purpose the following hypothesis was examined. Hypothesis. There is no difference in children's color preferences for the opposite sex as related to clothing: (a) shirts and blouses, (b) trousers and shirts, (c) shoes.

Findings

An examination of Tables II, III, and IV reveals that no pattern exists in boys' and girls' color choices for clothing. The colors violet and violet tint were chosen more often by both boys and girls than any other color in relation to clothing. This finding is supported by Easterling (1974), and Streight (1974) who found violet the most preferred color of young children. Pink was selected more often by girls than boys in their selection of shirts and blouses. However, girls preferred pink in their selection of skirts but did not select the color pink for boys' trousers. Pink was not selected by the boys in their selection of skirts or trousers. Girls preferred pink shoes but did not choose the color pink for boys' shoes. The colors blue and blue tint were chosen more often by boys in their selection of shirts than blouses, but not as often as the violet and violet tint. Girls chose blue for

TABLE II

CHILDREN'S COLOR PREFERENCES FOR OPPOSITE SEX
ACCORDING TO SHIRTS AND BLOUSES
N = 45

	Boys N = 24				Girls N = 21			
	Shirts		Blouses		Shirts		Blouses	
Color	f	%	f	%	f	%	f	%
Red	1	.04	2	.08	1	.05	1	.05
Red Tint	1	.04	1	.04	2	.10	3	.14
Orange	3	.13	0	.00	2	.10	1	.05
Orange Tint	0	.00	1	.04	0	.00	1	.05
Yellow	1	.04	2	.08	3	.14	1	.05
Yellow Tint	0	.00	0	.00	1	.05	0	.00
Green	1	.04	3	.13	1	.05	2	.10
Green Tint	2	.08	0	.00	1	.05	0	.00
Blue	2	.08	0	.00	0	.00	3	.14
Blue Tint	3	.13	1	.04	1	.05	0	.00
Violet	5	.21	5	.21	2	.10	3	.14
Violet Tint	2	.08	1	.04	1	.05	0	.00
Black	1	.04	3	.13	3	.14	3	.14
White	1	.04	2	.08	1	.05	1	.05
Brown	1	.04	3	.13	1	.05	2	.10

TABLE III

CHILDREN'S COLOR PREFERENCES FOR OPPOSITE SEX
ACCORDING TO TROUSERS AND SKIRTS
N = 45

	Boys N = 24				Girls N = 21			
	Trousers		Skirts		Trousers		Skirts	
Color	f	%	f	%	f	%	f	%
Red	1	.04	1	.04	2	.10	0	.00
Red Tint	0	.00	0	.00	0	.00	4	.19
Orange	0	.00	3	.13	2	.10	1	.05
Orange Tint	2	.08	1	.04	2	.10	0	.00
Yellow	2	.08	0	.00	1	.05	0	.00
Yellow Tint	0	.00	1	.04	0	.00	1	.05
Green	2	.08	0	.00	1	.05	1	.05
Green Tint	1	.04	2	.08	2	.10	1	.05
Blue	4	.17	3	.13	2	.10	2	.10
Blue Tint	1	.04	1	.04	1	.05	1	.05
Violet	7	.29	5	.21	4	.19	5	.24
Violet Tint	3	.13	4	.17	0	.00	1	.05
Black	0	.00	1	.04	2	.10	2	.10
White	0	.00	0	.00	0	.00	1	.05
Brown	1	.04	2	.08	2	.10	1	.05

TABLE IV

CHILDREN'S COLOR PREFERENCES FOR OPPOSITE SEX ACCORDING TO SHOES
N = 45

	Boys N = 24				Girls N = 21			
	Boy Shoes		Girl Shoes		Boy Shoes		Girl Shoes	
Color	f	%	f	%	f	%	f	%
Red	2	.08	2	.08	3	.14	1	.05
Red Tint	0	.00	1	.04	0	.00	3	.14
Orange	0	.00	1	.04	3	.14	0	.00
Orange Tint	1	.04	0	.00	1	.05	1	.05
Yellow	1	.04	3	.13	1	.05	0	.00
Yellow Tint	0	.00	1	.04	0	.00	1	.05
Green	1	.04	1	.04	1	.05	2	.10
Green Tint	2	.08	1	.04	1	.05	1	.05
Blue	1	.04	1	.04	0	.00	1	.05
Blue Tint	3	.13	1	.04	1	.05	0	.00
Violet	7	.29	5	.21	4	.19	5	.24
Violet Tint	3	.13	3	.13	1	.05	2	.10
Black	2	.08	3	.13	3	.14	2	.10
White	0	.00	0	.00	0	.00	0	.00
Brown	1	.04	1	.04	2	.10	2	.10

blouses but did not select blue for boys' shirts. Table II indicates that boys selected the color orange for shirts but did not select this color for girls' blouses. However, boys did select the color orange for girls' skirts. Girls did not select orange shoes for themselves but did for boys' shoes. Easterling (1974) found the color orange to be the least preferred of young children.

Girls preferred more yellow for shirts than blouses, while boys preferred yellow more often for girls' shoes than for boys. Streight (1974) found yellow to be the least preferred color of young children. Boys selected green more often for girls' blouses than shirts, while boys selected green trousers but did not select green skirts for girls. Boys selected the color brown for girls' blouses more often than for skirts. Boys preferred the neutral colors more for girls' blouses than boys' shirts. Table IV indicates that neither boys nor girls picked white for shoes. As a group, there were no marked differences in children's color preferences for articles of clothing for themselves and the opposite sex, but as individuals there were differences (Tables V and VI).

In summary, violet and violet tint were chosen more often by both boys and girls than any other color for clothing. White for shoes was not selected by either boys or girls. There were only minor differences in the colors selected by boys and girls as related to clothing. On the basis of the data presented, the hypothesis is held tenable.

TABLE V

BOYS' COLOR PREFERENCES FOR CLOTHING
N = 24

Subject	Items of Clothing					
	Shirts	Blouses	Trousers	Skirts	Shoes	
	Boys	Girls	Boys	Girls	Boys	Girls
1.	VT[1]	Br	Br	GT	Bl	BT
2.	RT	R	B	B	R	Bl
3.	O	Bl	V	B	V	VT
4.	G	G	V	VT	GT	G
5.	O	G	VT	Br	VT	B
6.	W	W	B	O	Bl	O
7.	V	V	V	V	V	V
8.	GT	W	G	VT	G	VT
9.	BT	G	B	V	V	RT
10.	Bl	Y	GT	B	Br	RT
11.	V	V	V	V	V	V
12.	GT	Bl	VT	GT	GT	Bl
13.	V	Br	V	Br	V	Br
14.	Y	OT	Y	OT	VT	Y
15.	O	RT	OT	O	OT	Y
16.	VT	V	VT	VT	VT	V
17.	BT	V	Y	O	Y	GT
18.	BT	R	BT	R	BT	R
19.	R	BT	R	BT	R	R
20.	Br	Br	G	V	BT	Y
21.	V	VT	V	VT	V	VT
22.	B	Bl	OT	Bl	BT	Bl
23.	V	Y	V	YT	V	V
24.	B	V	B	V	B	V

[1]VT = violet tint; R = red; O = orange; Y = yellow; G = green; B = blue; V = violet; Bl = black; W = white; Br = brown; RT = red tint; OT = orange tint; YT = yellow tint; GT = green tint; BT = blue tint.

TABLE VI

GIRLS' COLOR PREFERENCES FOR CLOTHING
N = 21

Subject	Items of Clothing					
	Shirts	Blouses	Trousers	Skirts	Shoes	
	Boys	Girls	Boys	Girls	Boys	Girls
1.	Y[1]	V	Y	V	Y	V
2.	W	R	B	V	BT	V
3.	YT	W	OT	VT	Bl	RT
4.	VT	O	B	O	R	VT
5.	Y	V	V	W	R	YT
6.	VT	Br	O	V	OT	Br
7.	RT	B	OT	B	O	B
8.	V	Br	V	Br	V	Br
9.	Bl	Bl	Bl	Bl	Bl	Bl
10.	V	G	V	G	V	G
11.	R	B	R	V	R	V
12.	BT	Bl	BT	GT	Y	G
13.	Br	Y	V	YT	Br	GT
14.	Br	OT	Br	RT	V	VT
15.	GT	B	GT	BT	Br	V
16.	Bl	G	Bl	RT	GT	R
17.	G	V	G	V	G	V
18.	Bl	RT	Br	RT	Bl	RT
19.	O	RT	R	RT	VT	RT
20.	O	Bl	O	Bl	O	Bl
21.	Y	RT	GT	B	V	OT

[1]Y = yellow; R = red; O = orange; G = green; B = blue; V = violet; Bl = black; W = white; Br = brown; RT = red tint; OT = orange tint; YT = yellow tint; GT = green tint; BT = blue tint; VT = violet tint.

CHAPTER V

SUMMARY, FINDINGS, IMPLICATIONS, AND RECOMMENDATIONS

The major purpose of this study was to examine differences in children's color preferences for the opposite sex as related to preference for color in clothing. Subjects for this study were 45 preschool children, ages 3 to 6 years, enrolled in the Child Development Laboratories, Oklahoma State University, Stillwater, Oklahoma. There were 24 boys and 21 girls.

An instrument was developed to determine young children's color preferences for the opposite sex as related to preference for color in clothing (Chapter III). The data concerning the testing instrument, Color Preference for the Opposite Sex, were objectively recorded during the testing situation. Data were presented in frequencies and percentages reflecting young children's color preferences for the opposite sex as related to clothing.

Major Findings

1. Violet and violet tint were chosen more often by both boys and girls for all articles of clothing.

2. Boys and girls showed minor differences in their color preferences for articles of clothing for themselves and the opposite sex.

3. Neither boys nor girls selected white as a preferred color for shoes.

Implications

The findings of this study indicate children should be provided opportunities to select clothing in the colors they prefer. This may mean boys will choose colors that heretofore have been assigned to only girls.

Recommendations

1. Repeat this study on a larger sample, perhaps 300-400 children.

2. Study children's color preferences for the opposite sex, using additional clothing stimuli such as coats, dresses, suits, socks, and hats.

3. Study school age (5-12) children's preferences to determine the relationship between their own color preferences and their color preferences for the opposite sex.

4. Study the influences of a parent, teacher, or sibling on children's color preferences for clothing of the opposite sex.

5. Develop additional instruments to determine young children's color preferences for the opposite sex.

6. Study children's preferences for tints, shades, and spectral colors for the opposite sex in clothing.

7. Study other races' color preferences for the opposite sex, changing the dolls' appearances to represent the race studied e.g. black dolls, Indian dolls.

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APPENDIX A

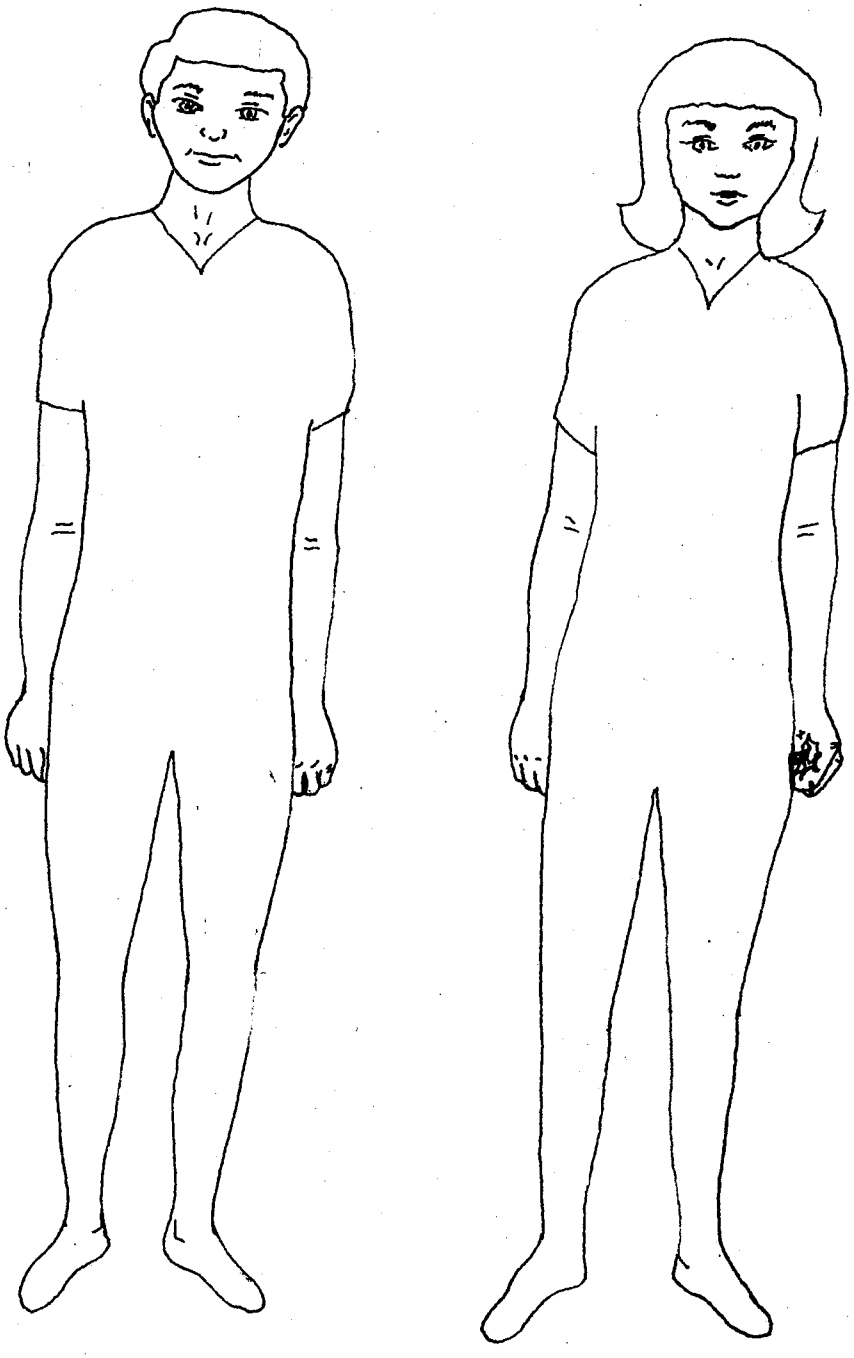
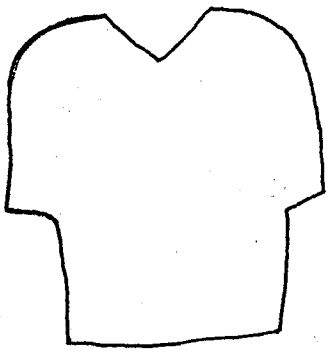
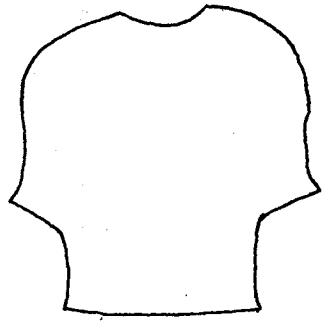


Figure 1. Dolls

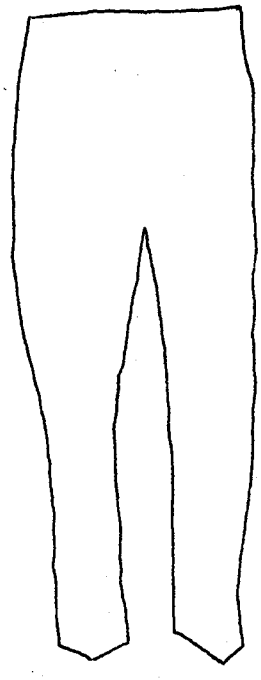
Shirt



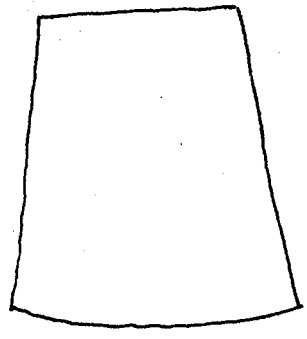
Blouse



Trousers



Skirt



Shoes

Figure 2. Clothing

APPENDIX B

RECORD SHEET

COLOR PREFERENCE TEST OF THE OPPOSITE SEX

IN RELATION TO CLOTHING SELECTION

Name_____ Age_____ Sex_____ Lab_____

	R	O	Y	G	B	V	Bl	W	Br	RT	OT	YT	GT	BT	VT
Boy Doll															
Shirt															
Pant															
Shoes															
Girl Doll															
Blouse															
Skirt															
Shoes															

VITA

Beth Lynn Rice

Candidate for the Degree of

Master of Science

Thesis: PRESCHOOL CHILDREN'S COLOR PREFERENCES IN CLOTHING FOR OPPOSITE SEX

Major Field: Family Relations and Child Development

Biographical:

Personal Data: Born in Chicago, Illinois, July 17, 1950, daughter of Mr. and Mrs. Myron Freedman; married Lewis Gene Rice November 26, 1972.

Education: Graduated from Niles Township High School, Skokie, Illinois, in the spring of 1968; received a Bachelor of Science degree in Early Childhood Education from the University of Oklahoma, Norman, Oklahoma, in May, 1972; completed the requirements for the Degree of Master of Science in Family Relations and Child Development in July, 1974, from Oklahoma State University at Stillwater, Oklahoma.

Professional Experience: Teaching Assistant at the Institute of Child Development, University of Oklahoma, 1972-1973.

Professional Organizations: Southern Association for Children Under Six, Oklahoma Association for Children Under Six.