

The Relative Importance of Color and Style in Determining
Preschoolers'
Clothing Design Preferences

by

Patricia Mary Ahearn

A thesis
presented to the University of Manitoba
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Master of Science
in
Clothing and Textiles

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ABSTRACT

The purpose of this study was (i) to determine the relative importance of color and style in determining preschoolers' choices of clothing designs and (ii) to investigate the specific color and style preferences of preschool children. One hundred and twenty-five three- and four-year old children from licensed Winnipeg day care centres were asked to select their favorite color, favorite style and five t-shirt designs. The experimental design used was a Latin square with five colors (blue, green, purple, red and yellow), five styles (crew neck, polo, stand-up collar, turtleneck and v-neck) and five trials.

Favorite color was found to be significantly related to design choice, although its influence appeared to be limited mainly to a child's first choice of designs. In subsequent choices, children selected a variety of colors. No relationship was found between favorite style and style of design selected.

Purple and red were selected significantly more often than other colors, blue significantly less often. Although significant style preferences were found, the inconsistency of style choices between trials suggests that further investigation is needed before any conclusions can be drawn.

No differences between the sexes were found. Further studies are recommended using decorative detail, color variation and other colors and styles.

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Chapter I

STATEMENT OF THE PROBLEM

While the behavior and development of preschool children has been studied extensively in recent years, the area of preschool children's clothing is one that has been neglected. Research has been limited mainly to the investigation of dressing norms, clothing comfort and self-help features. The whole area of children's clothing preferences, especially aesthetic preferences, has been largely ignored.

Available literature suggests that preschoolers often have definite preferences and opinions regarding clothing (Hunt, 1959; Hurlock, 1943; Jaffe, 1972; Ryan, 1966). Some researchers suggest that forcing a child to wear clothing that he/she dislikes can have an adverse effect on personality development (Hurlock, 1943; Kelley & Turner, 1970; Rea, 1950; Read, 1950). Yet, adequate research to guide designers, manufacturers, retailers and parents in choosing the kinds of clothing designs which preschoolers prefer is not available.

Literature dealing with preschool children's clothing preferences is very dated and most research is poorly controlled. While there is some discussion of the aspects

of clothing which are most important to preschoolers, there is very little empirical evidence to support these claims. Almost no research has been done on the relative importance of various clothing characteristics in determining choice. Although Ryan (1966) identified this gap in the literature two decades ago, very little has been done since that time to remedy the problem.

The purpose of this thesis is to investigate which aspects of clothing preschoolers find important and to determine the relative importance of these criteria in determining clothing choice.

Chapter II

REVIEW OF LITERATURE

This chapter will be limited to literature and research which deal with visual aspects of design. Functional design aspects, such as comfort, suitability for ease of putting on or taking off clothing, ease of movement and other special needs, while salient features of preschoolers' clothing, will not be considered.

2.1

CONCEPTUAL FRAMEWORK

In order to understand preschoolers' aesthetic preferences regarding clothing, it is helpful to know how children of this age perceive the environment around them. The concept of centration (centralisation) from Jean Piaget's theory of the development of intelligence provides a useful insight into preschoolers' perceptions.

Piaget was a Swiss developmental psychologist, philosopher and educator whose work has been influential since the 1920's. According to Piaget, children pass through an invariant sequence of stages in the development of intelligence. Preschool children are in the preoperational period of development (ages 2 to 7 years), a

stage between the sensory-motor overt action period of infancy and the integrated cognitive system of older children in the concrete operations stage (Flavell, 1963; Piaget, 1951).

One of the major characteristics of preoperational thought is the tendency for children in perceiving an object or situation, to concentrate or centre their attention exclusively on a single feature of that object or situation which they find striking and, in doing so, ignore other important aspects (Flavell, 1963; Piaget, 1951, 1959).

In contrast to preschoolers, older children, through perceptual activity,¹ are able to decentre their thinking and are able to consider many aspects of a situation. As Piaget (1959) said, "by noting whether a young child lets his gaze dwell on the first point that presents itself or whether he directs it so as to include the whole complex of relations, we can almost judge his mental age" (p. 81).

Although they make no reference to Piaget's concept of centration, Horn and Gurel (1981) have discussed clothing in similar terms.

¹ Perceptual activity involves "movements of the gaze in space, or comparisons of two stimuli appearing in the same place but at different times (both oriented by an active search on the part of the subject), exploration, transfer (of what is seen at X to what is seen at Y) in space or time, transposition of a whole body of relationships, anticipations and comparisons of directions, etc." (Piaget & Inhelder, 1969, p. 35).

Young children and untrained adults tend to become absorbed in the parts of a design rather than in the effect of the total composition. One beautiful line in a dress that is otherwise ugly, or a beautiful color in a suit that lacks distinction in general, may often produce such a strong liking that it becomes the main factor in evaluating the costume as a whole (p. 327).

Older children are able to consider the overall effect of the garment and make more balanced decisions. As Tate & Glisson (1965) stated, "...with older children, there is a growing interest away from specific design detail or trim to the over-all effect of clothes that flatter and enhance their appearance " (p. 261).

When applying Piaget's concept of centration to preschoolers' clothing selection, it would seem that certain aspects of clothing design will attract a child's attention and result in choice while other aspects will not be noticed. As the following review of relevant literature will suggest, the color, decorative detail, texture and newness of a garment are important to preschool children whereas the style of a garment is not.

2.2

ASPECTS OF CLOTHING IMPORTANT TO PRESCHOOLERS

2.2.1

Color

2.2.1.1 Importance of Color in Preschoolers' Clothing

Hurlock (1943) claimed that:

Studies of children's attitudes toward clothing have revealed that up to the age of nine years the

child's choice of a garment is determined primarily by its color. After that, he focuses his attention on the design of the garment. The child identifies his garments according to their colors, rather than their styles, and his liking for them is in proportion to his liking for the color of the garment (p.311-314).

Jaffe (1972), Read (1950) and Ryan (1966) also emphasized the importance of color in preschoolers' choice of clothing.

Although not directly related to clothing, studies investigating color-form perception in preschoolers also illustrate the importance young children place on color. These studies require children to match an object with another object similar in form but not in color or similar in color but not in form. While some studies indicated an early shift to form preference (Suchman & Trabasso, 1966) and others found equal preference (Seitz & Weir, 1971) or form preference (Colby & Robertson, 1942; Harris, Schaller & Mitler, 1970; Kagan & Lemkin, 1961) the majority strongly suggest that children in the period from about three to five years are color dominant after which form becomes more important (See Table 1). All studies indicated that form dominance increased with age. No sex differences were found with preschoolers in any study.

As Sharpe (1974) pointed out, explanations for the change from color to form dominance vary.

Explanations for the shifting color-form dominance phenomenon include maturation, increased personality differentiation from the affective to the intellectual, increased meaningfulness of the environment in terms of utility, less concern for primitive characteristics, increased verbal

TABLE 1
COLOR-FORM PERCEPTION STUDIES

AUTHOR	N/ AGES(YRS.) TESTED	AGE(YRS.)/DOMINANCE		
Brian & Goodenough (1929)	474 1-2:adult*	<3 form	3:6 color	> 6 form
Colby & Robertson (1942)	158 3:9-11*	3-0:6-1 form	5-10:7-4 form	7-0:9:1 form
Corah (1964)	160 3-10:5-8		3-10:5-8 color	7-11:9-9 form
Corah & Gospodinoff (1966)	80 3-5:9-9	3-5:5-4 color	8-6:9-9 form	
Descoudres (1914), cited in Staples, (1931)	**		3:6 color	> 6 form
Harris, Schaller & Mitler (1970)	100 4-1:9-10		4-1:9-10 form	
Kagan & Lemkin (1961)	69 3-9:8-6		3-9:5-8 form	5-8:8-6 form
Melkman, Koriati & Pardo (1976)	109 2:4-11	3-0:3-5 color	3-6:3-11 mixed	4-0:4-11 form
Schermann (1966)	56*** 4:5-6	4-0 color	4-9 color	5-6 form
Seitz & Weir (1971)	104 3-10:5-1		3-10:5-1 equal	
Suchman & Trabasso (1966)	145 3:15		3-4:4-2 color	4-2:6 form
Tobie (1926), cited in Staples (1931)	**	< 3-9 varies	3-9:5 color	> 5-1 form
Vokelt (1926), cited in Colby & Robertson (1942)	**		< 6 color	> 6 form

* Read 1-2:adult as one year and 2 months to adult.

Read 3:9-11 as 3 years to 9 years and 11 months.

** not reported

*** longitudinal study

skills, and introduction to reading and writing. Form dominance, according to some investigators is a genetically higher level of response than color (p.11).

Corah and Gospodinoff (1966) investigated color-form and part-whole perception in children using Piaget's concept of centration as the theoretical basis for their study. They found that children's responses to color-form and part-whole matching tasks showed similar developmental trends which were consistent with Piaget's centration/decentration concept. Similar results for adults when exposure to stimuli was very brief, lend support to the idea that attention deployment is responsible for these developmental differences.

Katz (1950), a Gestalt psychologist, suggests that color-form dominance studies on young children and adults with tachistoscopic exposure to stimuli² illustrate that color is far more important than shape in the creation of forms.

Birren (1961), a color theorist, offers a similar explanation, stating that color is far more basic than form in preschoolers' perception. "In other words, color is what attracts, and form is incidental" (Birren, 1961, p.52).

² A tachistoscope is an apparatus used in the study of learning, attention and perception, which allows very brief timed exposure to visual stimuli.

This developmental sequence, however, appears to be confined to Euro-American countries whose educational systems emphasize abstract, geometrical form (Serpell, 1969; Suchman, 1966). Moreover, color-form choices may depend at least partially on the type, complexity and presentation of the stimulus materials used (Corah & Gross, 1967; Descoudres, 1914, cited in Staples, 1931; Honkavaara, 1958; Huang, 1945; Tobie, 1929, cited in Staples, 1931; Vokelt, 1926, cited in Colby & Robertson, 1942). Other studies found no effect (Corah, 1964; Harris, Schaller & Miller, 1970; Suchman & Trabasso, 1966) or found change only for some ages (Brown & Campione, 1971).

2.2.1.2 Color Preferences

It would appear from the literature previously cited that color per se is important to preschoolers. The following discussion will deal with studies investigating whether preschoolers as a group have preferences for specific colors.

Before discussing color preference studies, it is necessary to define several terms. Color has three dimensions - hue, value and chroma. Hue is the name of the color such as red or blue. Value is the amount of light in a color and is described in terms of light, middle or dark. Chroma, sometimes referred to as saturation, intensity or purity, is the degree of strength in a color, described as

either weak, moderate or strong (Munsell Color Company, 1929).

Although Ryan (1966) and Jaffe (1972) claimed that red is the favorite hue of preschoolers, and Hurlock (1943) stated that reds, pinks and blues are favorites, with boys slightly preferring reds and girls pink, empirical evidence to support these claims was not given.

Table 2 summarizes a number of studies which investigated children's color preferences. Although red appears to be the preferred hue in the majority of studies, no conclusions can be drawn for several reasons.

First, only a few studies (Alschuler & Hattwick, 1947; Arlitt, 1925, cited in Staples, 1931; Brown & Campione, 1971; Hunt, 1959) investigated color preferences of preschool aged children and the results of all but one (Brown & Campione, 1971) are inconclusive.

Secondly, while most studies report developmental differences, results are conflicting and, as Valentine (1962) pointed out, may conceal great individual differences. For example, in Michaels' (1924) study, orange was ranked last of six colors by a third of six-year olds and was also ranked last overall. However, the same number of children ranked orange either first or second.

TABLE 2
COLOR PREFERENCE STUDIES

AUTHOR(YEAR)	N	AGES(YRS.)	
		TESTED	PREFERENCES FOUND
Alschuler & Hattwick (1947)	149	2-3:5-8	* -3 to 5 yr. olds preferred warmer colors -specific hue depended on age -purple disliked
Arlitt & Buckner (1925), cited in Staples, (1931)		**	-color preferences of 3 yr. olds slight -depended on stimulus
Brown & Campione (1971)	115	2-11: 5-3	-47% of 3 & 4 yr. olds preferred red -brown most disliked
Child, Hansen & Hornbeck (1968)	1100	Grades 1:10	-Grade 1 children preferred cooler hues, saturated colors -preferred middle to light values depending on hue
Garth (1924)	1000	Grades 1:10	-Grade 1 children preferred red, then blue
Gramza & Witt (1969)	35	4-2:5	-4 & 5 yr. olds preferred red but not significantly so
Hunt (1959)	128	3:10	-3 & 4 yr. olds unreliable -5 & 6 yr. olds preferred red -orange & violet least liked -preferred middle to lighter values depending on hue -preferred saturated colors in liked colors & unsaturated in least liked colors
Katz & Breed (1922)	63	5:22	-Kindergarten boys liked blue -girls liked yellow -preferred middle to lighter values
Michaels (1922)	149	6:15	-6 yr. old boys preferred yellow, red, green & blue but results unreliable
Schulhof (1979)	493	5:13	-5 yr. olds preferred red, then blue, yellow & green

*Read as 2 years, 3 months to 5 years, 8 months **not reported

Thirdly, only two studies (Child, Hansen & Hornbeck, 1968; Hunt, 1959) identified colors using a color system and controlled for value and saturation. Only Hunt's study looked at color preferences in clothing. Neither of these controlled studies, however, reported results for preschoolers.

The majority of studies did not report sex differences in hue preferences. Only two studies found sex differences and neither applied to preschoolers. Katz & Breed (1922) reported that kindergarten girls preferred yellow whereas boys preferred blue. Garth (1924) reported sex differences, but since there is no breakdown of sex by age tested (grades one to ten), this information is not useful in investigating hue preferences of young children.

Of the studies which investigated saturation and value preferences, only one (Hunt, 1959) was done on three- and four-year olds and the results showed that color preferences of this age group were unreliable due to a tendency to rank colors in sequential order.³ However, studies done on five- and six-year olds might give some indication of preschoolers' preferences, although no firm conclusions can be drawn.

³ Since responses on the style preference section of this study, which used specific questions rather than ranking, resulted in less random responses, Hunt suggested that ranking may have been responsible for the random responses of this age group.

Results of studies by Katz & Breed (1922),⁴ Hunt (1959) and Child, Hansen & Hornbeck (1968) suggested that five- and six-year old children prefer medium to lighter levels of colors, depending at least partly on the particular hue involved. Dark colors were disliked. Girls generally preferred somewhat lighter colors than boys.

Child, Hansen & Hornbeck (1968) found that children of both sexes strongly preferred saturated colors. Hunt (1959) found that saturated colors were generally preferred by both sexes, but children preferred the unsaturated levels of their least liked colors (orange and violet). Clothing literature is generally in agreement that bright, saturated colors are preferred by young children (Hurlock, 1943; Jaffe, 1972; Read, 1950; Ryan, 1966; Tate & Glisson, 1965).

2.2.2

Decorative Detail

The limited literature available on decorative detail suggests that decoration or ornamentation is an important aspect of clothing to preschoolers (Hurlock, 1943; Ryan, 1966; Tate & Glisson, 1960). As Hurlock (1943) stated,

The more ornaments the costume has, the better the child will probably like it. Some single ornament or some small detail of a garment may be what attracts the child's attention and casts the die in favor of it. (p. 311)

⁴ Katz and Breed reported that they tested saturation preferences in their study. However, they compared highly saturated hues with tints and shades of the same hue. They were therefore actually testing value levels.

2.2.3

Texture

Ryan (1966) reported on an unpublished study by Burton (1961) which investigated texture preferences of preschool children. When children could both see and feel fabrics, both boys and girls preferred Orlon fleece over wool coating and terry to knit towels. Girls preferred nylon to cotton underpants and fine knit to bulky knit sweaters.

Hunt (1959) had children rank their preference for swatches of rabbit's fur, rayon slipper satin, cotton corduroy, cotton broadcloth and a rough textured casement cloth. Three- and four-year olds strongly preferred fur as their first choice and satin as their second choice, with the other textures about equally preferred.

Hurlock (1978) suggests that children's preferences for soft materials such as silks and velvets may be one of the reasons why children prefer dress-up clothing since such materials are more often found in dress up clothing than in play clothes.

2.2.4

Newness

In an unpublished study by Habberstad (cited in Ryan, 1966) which ranked the importance of various aspects of clothing by counting the number of times children mentioned them, newness was the factor most often mentioned. As Ryan

pointed out, however, this may not be a valid means of measuring the importance of various clothing characteristics since some aspects of clothing may be easier to verbalize than others. Moreover, the sample used was small.

Hurlock (1943,1978,1980), Jaffe (1972) and Ryan (1966) all agree that new clothing is very important to preschoolers mainly because of its attention getting value. New clothing often brings favorable comments from adults and admiration and attention from peers.

2.2.5

Style

Few articles or studies relating to attributes of clothing important to the preschooler discuss style at all, except with respect to decorative details or conformity with other children. This lack of information may suggest that this aspect is relatively unimportant to this age group. As Hurlock (1978) stated, "Young children are far more interested in the ornamentation of their clothes than their styles or fit" (p. 429).

Another reason for lack of information may be the difficulty involved in investigating style preferences among children of this age group.

Ryan (1966) and Kefgen and Touchie-Specht (1981) completely dismiss the importance of conformity in style of

dress for preschool aged children. Others, however, suggest that while conformity does not become very important until the child reaches school age, clothing should not be so dissimilar to peers as to make the child feel conspicuous (Hurlock, 1943, 1949; Jaffe, 1972; Rea, 1950). Perceived sex appropriateness of clothing styles is also important to preschoolers (Hurlock, 1978, 1980), although in recent years many garment styles have been considered appropriate for both sexes.

Although recent research in this area is lacking, it is probable that with the growing number of children in day care, and therefore earlier peer contact, conformity in dress has become more important in recent years.

2.3

CONCLUSION

While empirical evidence is limited, and the majority of studies discussed are dated, literature on children's preferences suggests that color, decoration, texture, and newness are important clothing features to the preschooler, whereas style does not appear to be a critical factor in clothing choice.

Chapter III

OBJECTIVES

This study will investigate the role of color and style in influencing preschoolers' clothing preferences. More specifically, the objectives of this study are (1) to determine the relative importance of color and style in determining preschoolers' choices of clothing designs and (2) to investigate the specific colors and styles which preschool children prefer.

3.1 DEFINITION OF TERMS

Design is generally defined as the arrangement or organization of a number of elements including color, texture, line, form, shape and space (Beitler & Lockhart, 1969; Horn, 1975; Kefgen & Touchie-Specht, 1981; Pankowski & Pankowski, 1972). The latter four elements, which are highly interrelated, can be combined to describe the style of a design. "Style in dress describes the lines that distinguish one form or shape from another" (Kefgen & Touchie-Specht, 1981, P. 139).

Therefore design, as used in this study, includes the elements of style, color and texture. Style and color will be manipulated in this study to determine their effect on

preschoolers' choices of designs. Texture will be held constant.

In order to eliminate the confounding effect of decoration on children's clothing preferences, only structural design aspects were included in the designs used in this study. Structural design involves all construction details and notions which are an integral part of the design. All strictly decorative design details, that is, design details for appearance only, were eliminated. These include (1) color and pattern variation; (2) construction details, such as topstitching, ruffles, tucks and piping, where the primary purpose is decorative; (3) decorative trims, findings and fabric which are applied to the surface of a structurally completed garment (Davis, 1980).

While it may be argued that very few preschool children's garments contain no decoration, this was a necessary limitation if the effects of color and style on design choice were to be properly assessed.

As mentioned earlier, only visual design aspects were considered in this study. The effect of functional design was controlled by the fact that garments were not tried on.

Trial order refers to the order in which children saw the designs. Since the trial order was randomized, children saw the five trials in different orders. For example, child 1

saw the trials in the following order :⁵

TRIAL 1	GP	RV	YS	PT	BC
TRIAL 2	BV	GS	YC	RT	PP
TRIAL 3	GV	YT	BP	PC	RS
TRIAL 4	GT	PV	YP	RC	BS
TRIAL 5	GC	YC	PS	BT	RP

While child 2 saw the same groups of designs, the order of the trials and the order of presentation within each trial differed as follows.

TRIAL 1	RS	GV	PC	YT	BP
TRIAL 2	BS	RC	YP	GR	PV
TRIAL 3	BV	GS	RT	PP	YC
TRIAL 4	RV	PT	YS	BC	GP
TRIAL 5	YV	RP	PS	BT	GC

A favorite color group refers to all children who selected the same favorite color (e.g. blue favorite color group). A favorite style group includes all children who chose the same favorite style (e.g. turtleneck group).

⁵ Design names have been abbreviated to two letters with the first letter representing the color and the second representing the style. The colors are G(green), R(red), Y(yellow), P(purple) and B(blue). The styles are C(crew), P(polo), S(stand-up), T(turtleneck) and V(v-neck). Thus GP stands for the green polo design. These designs will be described in more detail later.

3.2 HYPOTHESES

To meet the objectives of this study, the following hypotheses, stated in the null form, were formulated. The first six hypotheses relate to the first purpose of the study, the relative importance of the color and style of a design in determining preference. The last six relate to the second purpose, the specific colors, styles and designs which preschool children prefer.

1. There is no relationship between a child's favorite color and the color of designs selected.
2. The relationship between favorite color and color of design selected is not affected by (a) trial order, (b) sex, or (c) favorite color group.
3. There is no relationship between a child's favorite style and the style of designs selected.
4. The relationship between favorite style and style of design selected is not affected by (a) trial order, (b) sex, or (c) favorite style group.
5. There is no difference in the importance of favorite color and favorite style in determining choice of designs.
6. There are no differences between (a) males and females, (b) favorite color groups or (c) favorite style groups in the relative importance of favorite color and favorite style in determining choice of designs.

7. No color is selected more frequently than any other color.
8. There are no differences between the sexes in the frequency of selection of each color.
9. No style is selected more frequently than any other style.
10. There are no differences between the sexes in the frequency of selection of each style.
11. There is no difference in children's preferences for styles with buttons or styles without buttons overall.
12. There are no differences between the sexes in their preference for styles with buttons.

On the basis of available literature, one would expect that children will tend to pick designs in their favorite color rather than in their favorite style, leading to rejection of hypotheses #1 and 5 and failure to reject hypothesis #3.

With respect to the influence of sex, favorite color and favorite style groups and trial order on hypotheses #1,3 and 5, one would expect on the basis of a pretest to see a trial order effect, with the effect of favorite color and favorite style being greater in the first trial than in subsequent trials. No sex differences were anticipated. There is no empirical evidence to indicate whether favorite color or style group will affect the relationship between favorite color or style and design choice.

For hypothesis #7, on the basis of past research, one might expect red to be somewhat preferred overall. However, color preference studies were inconclusive. No differences between the sexes were expected.

There is little evidence to influence expectations for the remaining hypotheses.

Chapter IV

METHOD

4.1 SAMPLE

4.1.1 Selection

The population in this study was all three- and four-year old children in the city of Winnipeg, Manitoba. This included approximately 15,500 children (Statistics Canada, 1981).

Although the preoperational period, characterized by centration, extends from two to seven years, two-year olds were eliminated because it was felt that some may lack the understanding and attention span necessary to complete the testing. Children over four were eliminated because this later stage of the preoperational period is often a transitional phase in which children exhibit characteristics of the concrete operations stage (Flavell, 1963).

Time considerations prohibited sampling of the total population. It was decided to sample children attending licensed Winnipeg day care centres because these centres provided relatively easy access to large numbers of preschool children from a variety of socioeconomic levels.

Day care centres were randomly selected from those listed in Day Care - Directory of Centres -1985 (Manitoba Community Services, 1985). This included ninety-five day cares for preschoolers consisting of approximately 2200 three- and four-year old children. A letter was sent to the director of each centre requesting participation in the study. Parents of three- and four-year olds in each participating centre were given letters explaining the purpose and procedure of the study and asking them to sign a consent form to allow their child to participate (Appendix A).

4.1.2 Description

Of the ten centres contacted, nine participated in the study. These represented a fairly good geographical cross-section of Winnipeg. The only non-participating day care felt that the study was inappropriate for children in that centre since these children depend on used clothing and have no choice in selecting their clothing.

It was decided that a minimum sample size of one hundred was needed to analyze data properly. One hundred and twenty five three- and four-year old children, 74 males and 51 females, participated in the study. All children completed all parts of the testing.

4.2 MATERIALS

Twenty-five solid-colored long-sleeved t-shirts, in five colors and five styles, were used in the study. The fabric, 50% polyester/50% cotton t-shirt knit, was selected because it is the type of fabric most commonly used for these styles in the market today and because it was available in a wide range of colors.

An attempt was made to choose styles and colors which would be most appealing to preschool children. Because color preference studies provide little evidence to support the choice of any particular hue, with the possible exception of red, primary colors were chosen because of their universal appeal (Birren, 1961) and to give a good variation of colors. Value and saturation levels were selected on the basis of research which suggested that preschoolers prefer saturated colors in light to medium value levels.

In order to make the study replicable and comparable, it was decided to use a color notation system to specify colors. Munsell's five principal hues -red, yellow, green, blue and purple- in light to middle value levels in the most saturated levels available, were matched as closely as possible. Colors were specified by the Munsell System using ASTM test D1535-68 (American Society for Testing and Materials, 1968). The colors selected were .25BG6.4/10

(green), 5R5/14 (red), 5Y8.5/12 (yellow), 10B6/8 (blue), and 2.5P5/8 (purple).

The styles selected will be described as a v-neck, polo shirt, crew neck, stand-up collar and turtleneck (Appendix B). Basic buttons were used on the openings of the stand-up collar and the polo shirt because they were an integral part of the design.

The criteria for selecting these styles were: (1) they were styles commonly found in children's stores, children's departments, catalogues, magazines and pattern books; (2) they were appropriate for both sexes; (3) no unnecessary decorative details were included; (4) styles were not fads; (5) long sleeves were chosen to keep sleeve length constant and because of suitability for the time of year (spring); and (6) differences between the styles were as great as possible, given the above limitations.

Patterns were made from a basic block following Morgan (1973) using measurements from the Canada Standard System for Sizing of Boys' and Girls' Apparel (Canadian Government Specifications Board, 1978).⁶ Size 4 was chosen because it was appropriate for three- and four-year olds. Since garments were not being tried on, only one size of each design was constructed.

⁶ Any differences between boys' and girls' measurements were averaged.

The t-shirts were hung on twenty-five identical cream-colored hangers on an aluminum clothing rack for ease of reordering before testing. Five small chairs, borrowed from each day care, were used to display the t-shirts during testing. A sixth small chair was used for the child to sit on.

To test for a child's favorite color, five 5 x 3.8 cm color samples, in the same colors as the t-shirts, were used. A combination of paint chips and layout paper was used for the color samples to try to achieve as close a match as possible. Colors were mounted on a round, grey piece of heavy cardboard, 21.6 cm in diameter in the same order as in the Munsell Color Sphere, red, yellow, green, blue, and purple. The color samples used, in Munsell notation, were 10G6.6/10 (green), 7.5R4/12 (red), 2.5Y8.5/10 (yellow), 10B6.5/8 (blue), and 2.5P5/8 (purple). These are shown in Appendix C.

To test for a child's favorite style, line diagrams of the five styles, approximately 16 x 15 cm in size, were used. These are shown in Appendix B.

A data sheet was used for each child to record the order of presentation of the t-shirts, the child's choices, and the sex of the child (See Appendix D).

4.3 PROCEDURE

Prior to individual testing, the investigator was introduced to the children in each day care by one of the day care staff members. The investigator explained that a number of children would be playing a shopping game in which they would be asked to choose the t-shirts which they liked best. The children were also told that they would be shown some pictures of t-shirts and some colors from which to choose their favorite. It was pointed out that this was only a game and that they would not be able to keep the t-shirts.

Individual testing took place in a separate area where other children could not view the child's choices. To put the child at ease, the investigator talked with the child for a couple of minutes about such things as the child's age, siblings and favorite television program.

Each child was then shown all twenty-five t-shirts, five at a time. All five colors and all five styles appeared in each trial in different combinations. Designs were randomly assigned to each of the five trials. The order of presentation within each trial as well as the order of the trials were randomized for each child prior to testing. The order was changed before each child was tested.

T-shirts were hung five at a time on the backs of five small chairs, which were placed in a row several feet in

front of the child. Children were asked to point to the t-shirt which they would buy if they could buy only one from each group.

When the child finished all five trials, the five line diagrams were placed in random order on the floor in front of the child. Each child was then told the following:

Here are some pictures of t-shirts with no colors. Each one is little different. Please look at each one carefully and then point to the one that you like the best.

Finally, children were given the circle of colors to hold and asked to point to the color which they liked best. Children were then thanked for playing the game and returned to the group. Testing time varied from five to ten minutes with the average time being about seven minutes.

Children who wanted to participate but whose parents had not returned the consent form were shown the t-shirts, color samples and line diagrams in a group after all participating children had finished. No choices were recorded.

4.4 PRETEST

A pretest was conducted to test the adequacy and length of the procedure and to ensure that the data sheet was appropriate. Eighteen children, nine boys and nine girls, from the Human Ecology Nursery School at the University of Manitoba, participated in the pretest. As a result of the

pretest, several changes to the original procedure were made and a number of hypotheses were added.

Children did not appear to be choosing most of their shirts in the same color as had been anticipated. There did, however, seem to be a tendency for children to pick their favorite color in their first trial. Therefore, it was decided to look at the effect of trial order on choice.

To investigate the possibility of a similar relationship existing between favorite style and first style selected, it was also decided to show children line diagrams of styles.

In testing for favorite color, it was originally decided to ask the child to name his/her favorite color. If the color named was not one of the t-shirt colors, children were asked to name their subsequent favorite colors until one of the t-shirt colors was named. It was found, however, that a number of children did not know the correct names of colors. It was decided, therefore, to use color samples instead.

4.5 DATA ANALYSIS

The experimental design used was a Latin square with five colors, five styles and five trials (See Table 3). The Latin square was randomized prior to administration.

In order to analyze children's design choices and whether they are influenced by a child's favorite color or favorite

TABLE 3
LATIN SQUARE DESIGN

TRIAL	STYLE				
	CREW NECK	STAND-UP	POLO	TURTLENECK	V-NECK
1	BLUE	YELLOW	GREEN	PURPLE	RED
2	RED	BLUE	YELLOW	GREEN	PURPLE
3	PURPLE	RED	BLUE	YELLOW	GREEN
4	GREEN	PURPLE	RED	BLUE	YELLOW
5	YELLOW	GREEN	PURPLE	RED	BLUE

FOR EXAMPLE, DESIGNS IN TRIAL ONE INCLUDE THE BLUE CREW, THE YELLOW STAND-UP, THE GREEN POLO, THE PURPLE TURTLENECK, AND THE RED V-NECK.

style, it was necessary to discuss each trial separately since a child's choice in one trial was related to his/her choice in subsequent trials. By analyzing the effect of favorite color, favorite style and sex on design choices on each trial however, it was felt that it would be possible to get a good idea as to whether these variables were affecting design choices overall.

To test hypothesis #1, the relationship between a child's favorite color and the color of design selected, a Z-test of proportion was done on each trial to see if the proportion of times designs were picked in a child's favorite color was equal to .2 (random selection). This test was considered to be appropriate for the size of the sample.

To see if the order of trials had any effect on choice of colors of designs (hypothesis #2a), the proportions of children selecting their favorite colors of designs in trials 1 to 5 were compared. That is, did the same proportion of children pick their favorite color in trial 1 as in trial 5?

To investigate differences between males and females in the proportion of times a child's favorite color was picked in each trial (hypothesis #2a and b), a two-sample Z-test of proportion was used. Differences between the favorite color groups in the proportion of times favorite color was picked were analyzed using a chi-square test for independence.

Analysis of the relationship between favorite style and style of design selected (hypothesis #3) as well as the effects of sex, favorite style group and order of trials on this relationship (hypothesis #4) was analagous to the analysis of the first two hypotheses.

The relative importance of favorite color and favorite style in determining choice (hypothesis #5) was investigated in two ways. First, the strength of the relationship between favorite color and color of design selected was compared to the relationship between favorite style and style of design selected to see which appeared to be stronger. Secondly, a score called the determinant factor (DF) was calculated for each child by subtracting the number

of times the child selected his/her favorite style in the five trials from the number of times the child selected his/her favorite color. DF scores could range from -4 to 4, with -4 indicating total choice by favorite style, 4 indicating total choice by color, and 0 indicating no preference. For example, a child who selected his/her favorite color four times and his/her favorite style once would have a DF score of 3. A one-sample Z-test was then performed to test whether the mean DF score was equal to zero.

Differences between the sexes in DF scores (hypothesis #6) were analyzed using a two-sample Z-test. Comparisons of the distribution of DF scores of different favorite color groups and of different favorite style groups were done using the chi-square test for independence.

When investigating children's color preferences (hypothesis #7), a Z-test of proportion was done for each color in the first trial. Trial 1 was analyzed because it represented a child's first choice and therefore should best indicate preference. However, because there was no way of knowing whether a child selected a design for the color or for the style, caution had to be used in interpreting the results. Differences between the sexes (hypothesis #8) were analyzed using chi-square tests for each trial. A similar approach was used to investigate style preferences (hypotheses #9 & 10).

To analyze button preferences (hypotheses #11 & 12), data for all five trials were combined and a comparison was made between the percentage of times styles with buttons were selected with random expectations (40% since two of the five designs had buttons). For hypothesis #12, the percentage of times males and females selected styles with buttons were compared.

Chapter V

RESULTS

5.1 DESCRIPTION OF CHOICES

Children's choices of designs in the five trials, favorite color choices and favorite style choices are shown in Appendix E.

5.1.1 Stated Favorite Color

Purple was selected most often as favorite color (32% of the time), followed by red (21.6%), yellow (17.6%) and blue (16.8%) (See Figure 1). Green was the least preferred color, being selected by only 15 children (12%).

Figure 2 illustrates differences between males and females in their choice of favorite colors. While females chose purple and green more often than males and males preferred blue, yellow and red more often than females, chi-square results (Table 4) indicated that none of these differences was statistically significant.

FIGURE 1
STATED FAVORITE COLOR

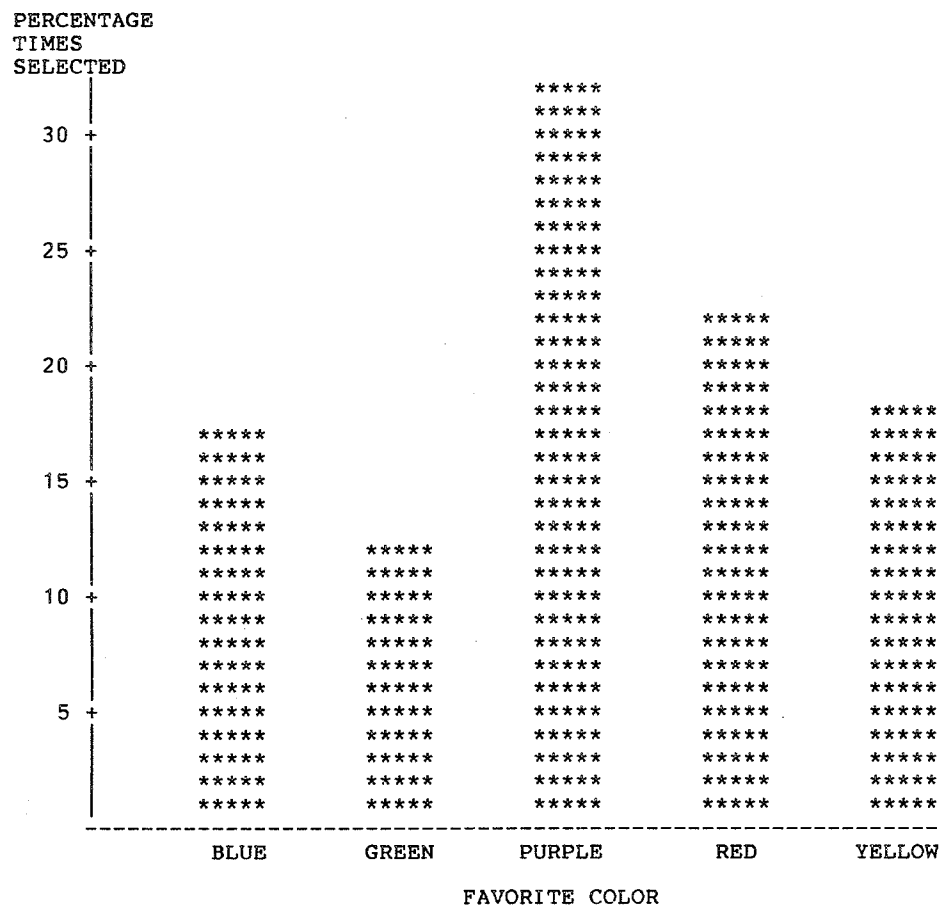
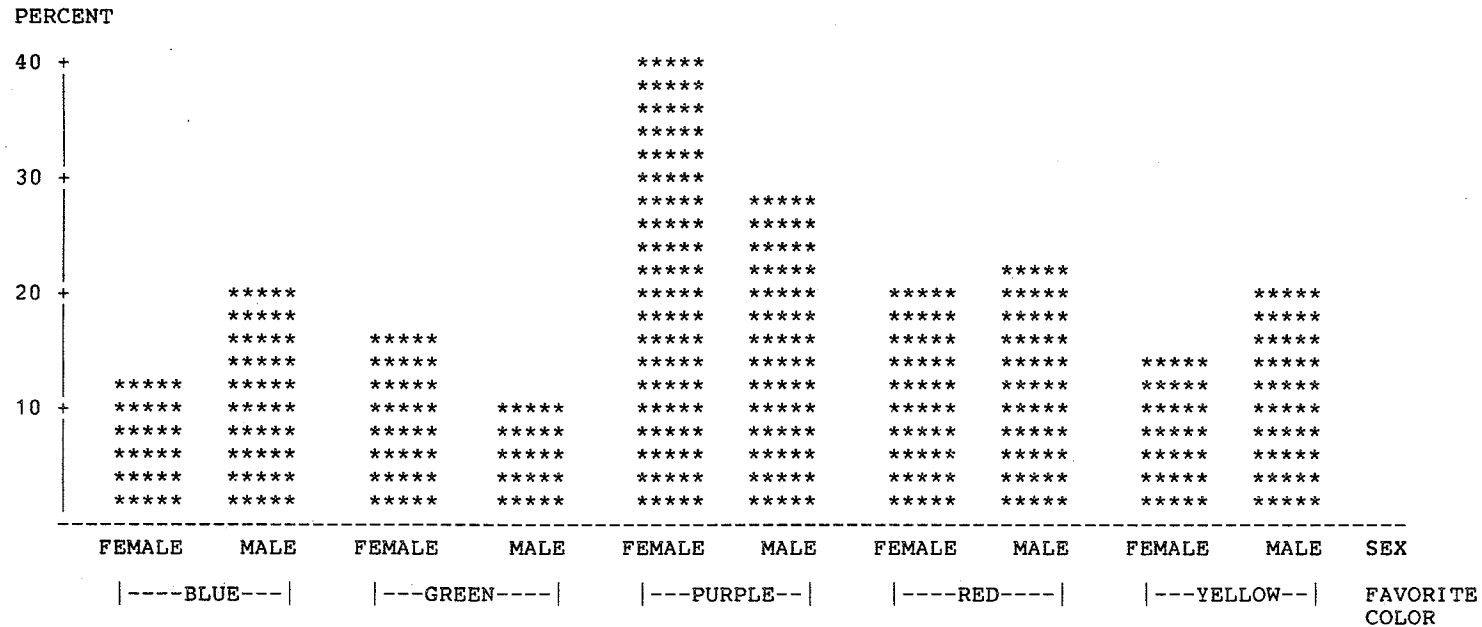


FIGURE 2
STATED FAVORITE COLOR BY SEX



*
FOR EXAMPLE, BLUE WAS SELECTED AS FAVORITE COLOR BY 11.8% OF FEMALES AND 20.3% OF MALES.

TABLE 4
STATED FAVORITE COLOR BY SEX

SEX	FAVORITE COLOR					
FREQUENCY EXPECTED CELL CHI 2 ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
FEMALE	6 8.6 0.8 11.76	8 6.1 0.6 15.69	20 16.3 0.8 39.22	10 11.0 0.1 19.61	7 9.0 0.4 13.73	51
MALE	15 12.4 0.5 20.27	7 8.9 0.4 9.46	20 23.7 0.6 27.03	17 16.0 0.1 22.97	15 13.0 0.3 20.27	74
TOTAL	21	15	40	27	22	125

CHI-SQUARE=4.570 DF=4 PROB=0.3343

5.1.2 Stated Favorite Style

As Figure 3 indicates, the stand-up collar style was selected most often as favorite style (26.4% of time), followed closely by the v-neck style (24% of time). The turtleneck, crew neck and polo shirt styles were selected by 18.4%, 16.8% and 14.4% of the children respectively.

Differences between males and females in their choice of favorite styles are shown in Figure 4. Females preferred the stand-up and crew neck styles more than males whereas males chose the v-neck and turtleneck styles more often than females. The polo shirt was chosen about equally by both sexes.

A chi-square test (Table 5) indicated that differences between males and females in choice of favorite style were not significant.

FIGURE 3
STATED FAVORITE STYLE

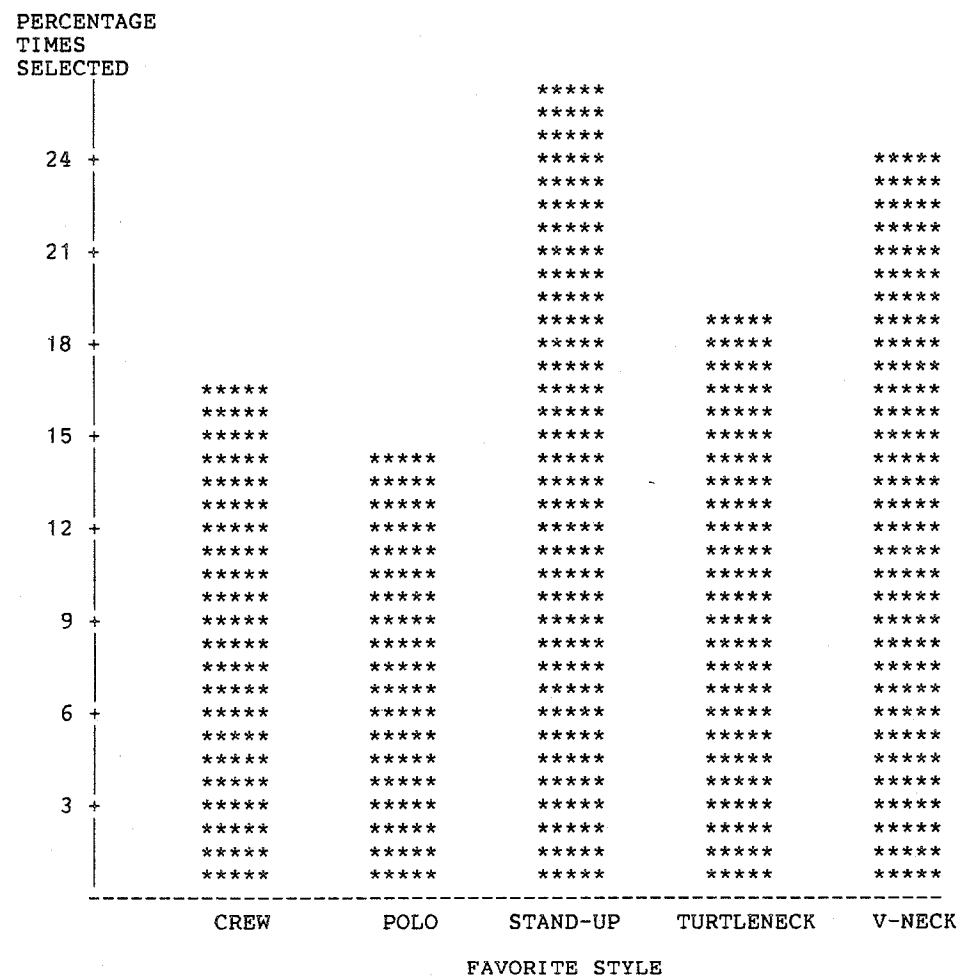
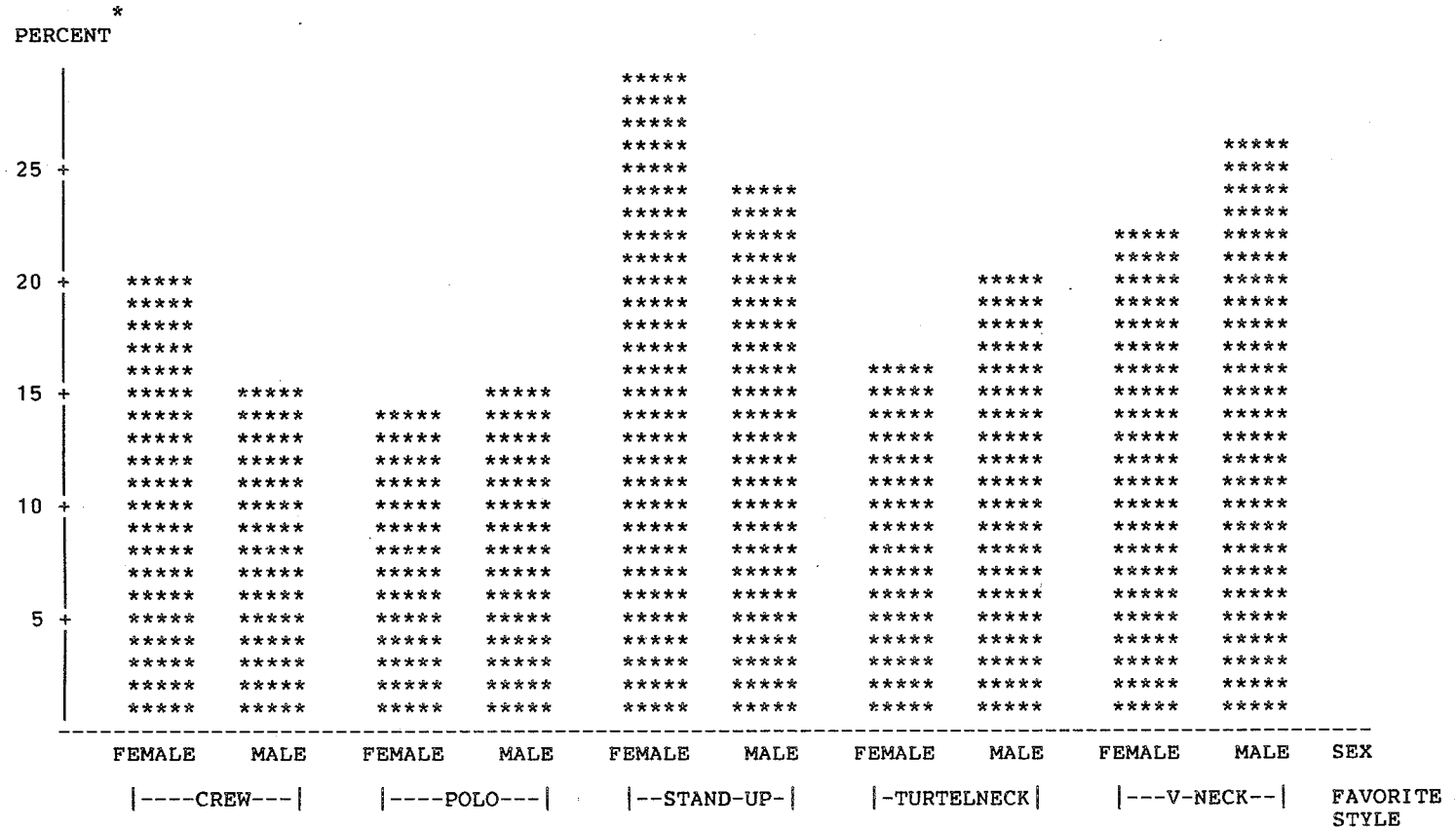


FIGURE 4
STATED FAVORITE STYLE BY SEX



* FOR EXAMPLE, THE CREW NECK WAS SELECTED AS FAVORITE STYLE BY 19.6% OF FEMALES AND 14.9% OF MALES.

TABLE 5
STATED FAVORITE STYLE BY SEX

SEX	FAVORITE STYLE					
FREQUENCY EXPECTED CELL CHI2 ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
FEMALE	10 8.6 0.2 19.61	7 7.3 0.0 13.73	15 13.5 0.2 29.41	8 9.4 0.2 15.69	11 12.2 0.1 21.57	51
MALE	11 12.4 0.2 14.86	11 10.7 0.0 14.86	18 19.5 0.1 24.32	15 13.6 0.1 20.27	19 17.8 0.1 25.68	74
TOTAL	21	18	33	23	30	125

CHI-SQUARE=1.284 DF=4 PROB=0.8640

5.1.3 Colors of Designs Selected

The colors of designs selected in each trial are shown in Table 6. A chi-square test was done for each trial to see if any color was selected significantly more often than any other color.

TABLE 6
COLORS OF DESIGNS SELECTED IN TRIALS 1 TO 5

TRIALS	COLORS					
FREQUENCY PERCENT	BLUE	GREEN	PURPLE	RED	YELLOW	CHI- SQUARE
TRIAL 1	15 12.0	17 13.6	40 32.0	37 29.6	16 12.8	*** 25.56
TRIAL 2	19 15.2	17 13.6	41 32.8	25 20.0	23 18.4	** 14.24
TRIAL 3	20 16.0	30 24.0	30 24.0	22 17.6	23 18.4	3.52
TRIAL 4	27 21.6	32 25.6	18 14.4	23 18.4	25 20.0	4.24
TRIAL 5	22 17.6	16 12.8	28 22.4	25 20.0	34 27.2	7.20

** $p < .01$

*** $p < .001$

As Table 6 indicates, color choices were significantly different only in the first two trials. Purple and red were selected considerably more than the expected value of 25, while the remaining colors were selected much less than expected. On trial 2, purple was selected most often, while

blue and green were selected less often than expected. Frequencies for red and yellow were close to the expected value.

The fact that certain colors were significantly preferred on the first two trials only may suggest that trial order had an effect on the color of design selected.

No differences between the sexes were found in the number of times each color was selected in each trial (See Tables 7 to 11).

TABLE 7
COLOR OF DESIGN SELECTED IN TRIAL 1 BY SEX

SEX		COLOR SELECTED				
FREQUENCY	EXPECTED					
CELL	CHI2					
ROW	PCT	BLUE	GREEN	PURPLE	RED	YELLOW
FEMALE		5	4	21	13	8
		6.1	6.9	16.3	15.1	6.5
		0.2	1.2	1.3	0.3	0.3
		9.80	7.84	41.18	25.49	15.69
MALE		10	13	19	24	8
		8.9	10.1	23.7	21.9	9.5
		0.1	0.9	0.9	0.2	0.2
		13.51	17.57	25.68	32.43	10.81
TOTAL		15	17	40	37	16

CHI-SQUARE=5.765 DF=4 PROB=0.2174

TABLE 8
COLOR OF DESIGN SELECTED IN TRIAL 2 BY SEX

SEX		COLOR SELECTED				
FREQUENCY EXPECTED CELL CHI2 ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
FEMALE	6	6	20	10	9	51
	7.8	6.9	16.7	10.2	9.4	
	0.4	0.1	0.6	0.0	0.0	
	11.76	11.76	39.22	19.61	17.65	
MALE	13	11	21	15	14	74
	11.2	10.1	24.3	14.8	13.6	
	0.3	0.1	0.4	0.0	0.0	
	17.57	14.86	28.38	20.27	18.92	
TOTAL	19	17	41	25	23	125

CHI-SQUARE=1.996 DF=4 PROB=0.7364

TABLE 9
COLOR OF DESIGN SELECTED IN TRIAL 3 BY SEX

SEX	COLOR SELECTED					
FREQUENCY EXPECTED CELL CHI2 ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
FEMALE	8 8.2 0.0 15.69	12 12.2 0.0 23.53	8 12.2 1.5 15.69	9 9.0 0.0 17.65	14 9.4 2.3 27.45	51
MALE	12 11.8 0.0 16.22	18 17.8 0.0 24.32	22 17.8 1.0 29.73	13 13.0 0.0 17.57	9 13.6 1.6 12.16	74
TOTAL	20	30	30	22	23	125

CHI-SQUARE=6.330 DF=4 PROB=0.1758

TABLE 10
COLOR OF DESIGN SELECTED IN TRIAL 4 BY SEX

SEX		COLOR SELECTED					
FREQUENCY	EXPECTED						
CELL CHI2							
ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
FEMALE	11	14	4	11	11	51	
	11.0	13.1	7.3	9.4	10.2		
	0.0	0.1	1.5	0.3	0.1		
	21.57	27.45	7.84	21.57	21.57		
MALE	16	18	14	12	14	74	
	16.0	18.9	10.7	13.6	14.8		
	0.0	0.0	1.0	0.2	0.0		
	21.62	24.32	18.92	16.22	18.92		
TOTAL	27	32	18	23	25	125	

CHI-SQUARE=3.263 DF=4 PROB=0.5147

TABLE 11
COLOR OF DESIGN SELECTED IN TRIAL 5 BY SEX

SEX		COLOR SELECTED					
FREQUENCY EXPECTED CELL CHI2 ROW PCT		BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
FEMALE	9 9.0 0.0 17.65	6 6.5 0.0 11.76	13 11.4 0.2 25.49	10 10.2 0.0 19.61	13 13.9 0.1 25.49	51	
MALE	13 13.0 0.0 17.57	10 9.5 0.0 13.51	15 16.6 0.1 20.27	15 14.8 0.0 20.27	21 20.1 0.0 28.38	74	
TOTAL	22	16	28	25	34	125	

CHI-SQUARE=0.539 DF=4 PROB=0.9696

5.1.4 Styles of Designs Selected

Table 12 shows the styles of designs selected in trials 1 to 5. Chi-square tests indicated that there were significant differences in the number of times styles of designs were selected in trials 1 and 3. However, an examination of the frequency counts for each style selected in trials 1 and 3 shows no agreement between the two trials on the most and least preferred styles.

TABLE 12
STYLES OF DESIGNS SELECTED IN TRIALS 1 TO 5

TRIAL	STYLES					
FREQUENCY PERCENT	CREW	POLO	STAND-UP	TURTLE	V-NECK	CHI- SQUARE
TRIAL 1	15 12.0	23 18.4	31 24.8	36 28.8	20 16.0	* 11.44
TRIAL 2	25 20.0	27 21.6	28 22.4	25 20.0	20 16.0	1.52
TRIAL 3	37 29.6	23 18.4	28 22.4	16 12.8	21 16.8	* 10.16
TRIAL 4	25 20.0	24 19.2	29 23.2	25 20.0	22 17.6	1.04
TRIAL 5	25 20.0	23 18.4	27 21.6	22 17.6	28 22.4	1.04

* $p < .05$

In trial 1, the turtleneck style was selected most often (36 times) followed by the stand-up collar (31 times). The

crew neck style was selected much less than expected (15 times). In contrast, in trial 3, the crew neck style was selected most often (37 times) and the turtleneck style was selected least often (16 times).

Tables 13 to 17 compare choices of styles in each trial for males and females. Chi-square tests on each trial found significant differences between males and females in the number of times different styles were selected in trial 4 only (Table 16). Females selected the stand-up collar more often than expected and the polo style less often than expected. In contrast, males picked the polo style more often than expected and the stand-up collar style less often.

TABLE 13
STYLE OF DESIGN SELECTED IN TRIAL 1 BY SEX

SEX		STYLE SELECTED					
FREQUENCY EXPECTED CELL CHI2 ROW PCT		CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
FEMALE		8	9	15	13	6	51
		6.1	9.4	12.6	14.7	8.2	
		0.6	0.0	0.4	0.2	0.6	
		15.69	17.65	29.41	25.49	11.76	
MALE		7	14	16	23	14	74
		8.9	13.6	18.4	21.3	11.8	
		0.4	0.0	0.3	0.1	0.4	
		9.46	18.92	21.62	31.08	18.92	
TOTAL		15	23	31	36	20	125

CHI-SQUARE=3.034 DF=4 PROB=0.5521

TABLE 14

STYLE OF DESIGN SELECTED IN TRIAL 2 BY SEX

SEX		STYLE SELECTED				
FREQUENCY EXPECTED CELL CHI2 ROW PCT						TOTAL
	CREW	POLO	STAND-UP	TURTLE	V-NECK	
FEMALE	13	10	10	10	8	51
	10.2	11.0	11.4	10.2	8.2	
	0.8	0.1	0.2	0.0	0.0	
	25.49	19.61	19.61	19.61	15.69	
MALE	12	17	18	15	12	74
	14.8	16.0	16.6	14.8	11.8	
	0.5	0.1	0.1	0.0	0.0	
	16.22	22.97	24.32	20.27	16.22	
TOTAL	25	27	28	25	20	125

CHI-SQUARE=1.768 DF=4 PROB=0.7783

TABLE 15
STYLE OF DESIGN SELECTED IN TRIAL 3 BY SEX

SEX	STYLE SELECTED					
FREQUENCY EXPECTED CELL CHI2 ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
FEMALE	10 15.1 1.7 19.61	12 9.4 0.7 23.53	9 11.4 0.5 17.65	9 6.5 0.9 17.65	11 8.6 0.7 21.57	51
MALE	27 21.9 1.2 36.49	11 13.6 0.5 14.86	19 16.6 0.4 25.68	7 9.5 0.6 9.46	10 12.4 0.5 13.51	74
TOTAL	37	23	28	16	21	125

CHI-SQUARE=7.754 DF=4 PROB=0.1010

TABLE 16
STYLE OF DESIGN SELECTED IN TRIAL 4 BY SEX

SEX	STYLE SELECTED					
FREQUENCY EXPECTED CELL CHI2 ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
FEMALE	9 10.2 0.1 17.65	4 9.8 3.4 7.84	18 11.8 3.2 35.29	13 10.2 0.8 25.49	7 9.0 0.4 13.73	51
MALE	16 14.8 0.1 21.62	20 14.2 2.4 27.03	11 17.2 2.2 14.86	12 14.8 0.5 16.22	15 13.0 0.3 20.27	74
TOTAL	25	24	29	25	22	125

**

CHI-SQUARE=13.490 DF=4 PROB=0.0091

TABLE 17

STYLE OF DESIGN SELECTED IN TRIAL 5 BY SEX

SEX	STYLE SELECTED					
FREQUENCY EXPECTED CELL CHI2 ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
FEMALE	10 10.2 0.0 19.61	10 9.4 0.0 19.61	8 11.0 0.8 15.69	11 9.0 0.5 21.57	12 11.4 0.0 23.53	51
MALE	15 14.8 0.0 20.27	13 13.6 0.0 17.57	19 16.0 0.6 25.68	11 13.0 0.3 14.86	16 16.6 0.0 21.62	74
TOTAL	25	23	27	22	28	125

CHI-SQUARE= 2.290 DF=4 PROB=0.6826

5.1.5 Number of Colors and Styles Selected By Each Child

Tables 18 and 19 show the total number of colors and the total number of styles selected by children in all five trials. Very few children picked all designs in one color (7.2%). The majority (70.4% of children) picked at least four colors, 48.9% of which chose all five. Only 1.6% of children picked all designs in one style. 40% of the children picked at least four styles. Only 14.4% of the children chose all five styles.

TABLE 18

NUMBER OF COLORS SELECTED BY EACH CHILD IN FIVE TRIALS

NUMBER OF COLORS SELECTED	FREQUENCY	PERCENT	CUMULATIVE PERCENT
1	9	7.2	7.2
2	6	4.8	12.0
3	22	17.6	29.6
4	45	36.0	65.6
5	43	34.4	100.0

TABLE 19

NUMBER OF STYLES SELECTED BY EACH CHILD IN FIVE TRIALS

NUMBER OF STYLES SELECTED	FREQUENCY	PERCENT	CUMULATIVE PERCENT
1	2	1.6	1.6
2	11	8.8	10.4
3	62	49.6	60.0
4	32	25.6	85.6
5	18	14.4	100.0

As tables 20 and 21 indicate, no differences between the sexes were found in the total number of styles and colors selected.

Table 22 shows the various color and style combinations which are possible in five trials along with the frequencies for each. It would appear that many children selected a variety of colors and styles in the five trials.

TABLE 20

NUMBER OF COLORS SELECTED IN FIVE TRIALS BY SEX

SEX		NUMBER OF COLORS SELECTED					
FREQUENCY EXPECTED CELL CHI2 COL PCT		1	2	3	4	5	TOTAL
FEMALE	4	2	7	20	18	51	
	3.7	2.4	9.0	18.4	17.5		
	0.0	0.1	0.4	0.1	0.0		
	44.44	33.33	31.82	44.44	41.86		
MALE	5	4	15	25	25	74	
	5.3	3.6	13.0	26.6	25.5		
	0.0	0.1	0.3	0.1	0.0		
	55.56	66.67	68.18	55.56	58.14		
TOTAL		9	6	22	45	43	125

CHI-SQUARE=1.190 DF=4 PROB=0.8797

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 21

NUMBER OF STYLES SELECTED IN FIVE TRIALS BY SEX

SEX	NUMBER OF STYLES SELECTED					
FREQUENCY EXPECTED CELL CHI2 COL PCT	1	2	3	4	5	TOTAL
FEMALE	2	6	22	13	8	51
	0.8	4.5	25.3	13.1	7.3	
	1.7	0.5	0.4	0.0	0.1	
	100.00	54.55	35.48	40.63	44.44	
MALE	0	5	40	19	10	74
	1.2	6.5	36.7	18.9	10.7	
	1.2	0.4	0.3	0.0	0.0	
	0.00	45.45	64.52	59.38	55.56	
TOTAL	2	11	62	32	18	125

CHI-SQUARE=4.587 DF=4 PROB=0.3323

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 22
CHOICE OF COLORS AND STYLES IN 5 TRIALS

CHOICES	FREQUENCY	PERCENT
1 COLOR, 5 STYLES	9	7.2
2 COLORS, 3 STYLES	2	1.6
2 COLORS, 4 STYLES	4	3.2
3 COLORS, 2 STYLES	1	0.8
3 COLORS, 3 STYLES	10	8.0
3 COLORS, 4 STYLES	6	4.8
3 COLORS, 5 STYLES	5	4.0
4 COLORS, 2 STYLES	10	8.0
4 COLORS, 3 STYLES	13	10.4
4 COLORS, 4 STYLES	22	17.6
5 COLORS, 1 STYLE	2	1.6
5 COLORS, 3 STYLES	37	29.6
5 COLORS, 5 STYLES	4	3.2

5.2 TESTING OF HYPOTHESES

5.2.1 Hypotheses #1 and 2(a)

1. THERE IS NO RELATIONSHIP BETWEEN A CHILD'S FAVORITE COLOR AND THE COLORS OF DESIGNS SELECTED.

2(a). THE RELATIONSHIP BETWEEN FAVORITE COLOR AND COLOR OF DESIGN SELECTED IS NOT AFFECTED BY TRIAL ORDER.

The relationship between stated favorite color and color of design selected in each trial is shown in Appendix F. Except in trial 4, children whose favorite color was purple appeared to be picking designs in their favorite color. The number of children selecting their favorite color of designs in general decreased from the first to fifth trial suggesting a possible effect of order on choice.

To test whether the proportion of children picking designs in their favorite color was significantly greater than random choice, a Z-test of proportion was performed for each trial. As Table 23 reveals, Z-values for the first three trials were significant, with the level of significance being .001 for the first trial, .01 for the second and .05 for the third.

TABLE 23

PROPORTION OF TIMES FAVORITE COLOR IS SELECTED IN TRIALS

TRIAL	PROPORTION OF CHILDREN SELECTING FAVORITE COLOR				
	FEMALES	MALES	Z	ALL	Z
1	.471	.378	1.033	.416	6.038***
2	.333	.297	.429	.312	3.131**
3	.216	.324	-1.329	.280	2.236*
4	.215	.216	-.013	.216	.447
5	.294	.203	1.167	.240	1.118

*** $p < .001$ ** $p < .01$ * $p < .05$

Thus, a significant but weak relationship was found between favorite color and color of design selected, leading to rejection of hypothesis #1, and trial order did affect this relationship, resulting in rejection of hypothesis #2.

These results suggest that children pick their favorite color more often than randomly in the majority of trials and that the order of the trials is quite important. Favorite color was selected most often in the first trial, second most often in the second trial and third most often in the third trial. The relationship between favorite color and color of design selected was not significant for the last two trials.

However, as the proportion of children selecting their favorite color of design in each trial indicates (Table 23), only in trial 1 did this relationship appear to be very strong. Moreover, when the number of times each child selected his/her favorite color in the five trials was considered (Table 24), the influence of favorite color on design choice overall seemed quite limited. The majority of children (60.8%) picked their favorite color only once in all five trials. Only 28% of children picked their favorite color more than once.

TABLE 24

NUMBER OF TIMES FAVORITE COLOR SELECTED IN 5 TRIALS

NUMBER OF TIMES FAVORITE COLOR SELECTED	FREQUENCY	PERCENT
0	14	11.2
1	76	60.8
2	15	12.0
3	10	8.0
4	3	2.4
5	7	5.6

5.2.2 Hypotheses #2(b) and (c)

THE RELATIONSHIP BETWEEN FAVORITE COLOR AND COLOR OF DESIGN SELECTED IS NOT AFFECTED BY (b) SEX OR (c) FAVORITE COLOR GROUP.

A breakdown by sex of the relationship between favorite color and color of design selected in each trial is provided in Appendix G. As Table 23 indicates, Z-tests performed on each trial revealed no significant differences in the proportion of males and females selecting their favorite color of designs.

To see if members of each favorite color group chose their favorite color the same proportion of the time in each trial, a chi-square test was done for each trial. As Tables 25 to 29 indicate, no significant differences between favorite color groups were found.

TABLE 25

FAVORITE COLOR BY WHETHER FAVORITE COLOR SELECTED IN TRIAL 1

FAVORITE COLOR	FAVORITE COLOR SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
BLUE	15 12.3 0.6 71.43	6 8.7 0.9 28.57	21
GREEN	11 8.8 0.6 73.33	4 6.2 0.8 26.67	15
PURPLE	19 23.4 0.8 47.50	21 16.6 1.1 52.50	40
RED	14 5.8 0.2 51.85	13 11.2 0.3 48.15	27
YELLOW	14 12.8 0.1 63.64	8 9.2 0.1 36.36	22
TOTAL	73	52	125

CHI-SQUARE=5.525 DF=4 PROB=0.2375

TABLE 26

FAVORITE COLOR BY WHETHER FAVORITE COLOR SELECTED IN TRIAL 2

FAVORITE COLOR	FAVORITE COLOR SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
BLUE	17 14.4 0.5 80.95	4 6.6 1.0 19.05	21
GREEN	11 10.3 0.0 73.33	4 4.7 0.1 26.67	15
PURPLE	26 27.5 0.1 65.00	14 12.5 0.2 35.00	40
RED	18 18.6 0.0 66.67	9 8.4 0.0 33.33	27
YELLOW	14 15.1 0.1 63.64	8 6.9 0.2 36.36	22
TOTAL	86	39	125

CHI-SQUARE=2.188 DF=4 PROB=0.7012

TABLE 27

FAVORITE COLOR BY WHETHER FAVORITE COLOR SELECTED IN TRIAL 3

FAVORITE COLOR	FAVORITE COLOR SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
BLUE	17 15.1 0.2 80.95	4 5.9 0.6 19.05	21
GREEN	10 10.8 0.1 66.67	5 4.2 0.2 33.33	15
PURPLE	23 23.8 1.2 57.50	17 11.2 3.0 42.50	40
RED	22 25.1 0.3 81.48	5 7.6 0.9 18.52	27
YELLOW	18 15.8 0.3 81.82	4 6.2 0.8 18.18	22
TOTAL	90	35	125

CHI-SQUARE=7.474 DF=4 PROB=0.1129

TABLE 28

FAVORITE COLOR BY WHETHER FAVORITE COLOR SELECTED IN TRIAL 4

FAVORITE COLOR	FAVORITE COLOR SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI 2			
ROW PCT			
BLUE	18 16.5 0.1 85.71	3 4.5 0.5 14.29	21
GREEN	9 11.8 0.6 60.00	6 3.2 2.4 40.00	15
PURPLE	33 31.4 0.1 82.50	7 8.6 0.3 17.5	40
RED	19 21.2 0.2 70.37	8 5.8 10.8 29.63	27
YELLOW	19 17.2 0.2 86.36	3 4.8 0.6 13.64	22
TOTAL	98	27	125

CHI-SQUARE=5.911 DF=4 PROB=0.2059

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED VALUES OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 29

FAVORITE COLOR BY WHETHER FAVORITE COLOR SELECTED IN TRIAL 5

FAVORITE COLOR	FAVORITE COLOR SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI 2			
ROW PCT			
BLUE	17 16.0 0.1 80.95	4 5.0 0.2 19.05	21
GREEN	13 11.4 0.2 86.67	2 3.6 0.7 13.33	15
PURPLE	28 30.4 0.2 70.00	12 9.6 0.6 30.00	40
RED	20 20.5 0.0 74.07	7 6.5 0.0 25.93	27
YELLOW	17 16.7 0.0 77.27	5 5.3 0.0 22.73	22
TOTAL	95	30	125

CHI-SQUARE=2.082 DF=4 PROB=0.7207

Therefore there is no evidence to reject hypotheses #2(b) or (c).

5.2.3 Hypotheses #3 and 4(a)

3. THERE IS NO RELATIONSHIP BETWEEN A CHILD'S FAVORITE STYLE AND THE STYLES OF DESIGNS SELECTED.

4(a). THE RELATIONSHIP BETWEEN FAVORITE STYLE AND STYLE OF DESIGN SELECTED IS NOT AFFECTED BY TRIAL ORDER.

The relationship between favorite style and style of design selected in trials 1 to 5 is shown in Appendix H. Only in trials 1 and 5 does there appear to be any relationship between a child's favorite style and the style of design selected and even this relationship does not appear to be strong. There is no similarity in the two trials, however, with children in the turtleneck and v-neck favorite style groups choosing their favorite style most often in trial 1 and children in the crew-neck and v-neck groups choosing their favorite styles most often in trial 5.

A Z-test of proportion was done for each trial to test whether the proportion of children selecting their favorite style was equal to .2 (random selection). As Table 30 shows, only trial 1 had a significant Z-value. This indicates that trial order had some effect on the proportion of children selecting designs by their favorite style. Because the proportion of children selecting designs in

TABLE 30

PROPORTION OF TIMES FAVORITE STYLE IS SELECTED IN TRIALS

TRIAL	PROPORTION OF CHILDREN SELECTING FAVORITE STYLE				
	FEMALES	MALES	Z	ALL	Z
1	.333	.257	.937	.288	2.460**
2	.157	.216	-.819	.192	-.224
3	.235	.162	1.014	.192	-.224
4	.176	.149	.403	.160	-1.118
5	.196	.297	-1.278	.256	1.565

** $p < .01$

their favorite styles was found to be random in four of the five trials, there was little evidence to reject hypothesis #3.

This conclusion is further supported by Table 31 which shows the number of times children picked their favorite style in five trials. Over 30% of children never picked their favorite style in the designs selected. Another 43.2% picked a design in their favorite style only once. Only 26.4% of children picked their favorite style more than once. Favorite style does not appear to be a factor in choice of designs for very many children.

However, because the Z-value for the first trial was significant, trial order seemed to have had some effect on the relationship between favorite style and style of design

TABLE 31

NUMBER OF TIMES FAVORITE STYLE SELECTED IN 5 TRIALS

NUMBER OF TIMES FAVORITE STYLE SELECTED	FREQUENCY	PERCENT
0	38	30.4
1	54	43.2
2	21	16.8
3	10	6.4
4	4	3.2

selected. Therefore, there is some evidence to reject hypothesis #4(a).

5.2.4 Hypotheses 4(b) and (c)

THE RELATIONSHIP BETWEEN FAVORITE STYLE AND STYLE OF DESIGN SELECTED IS NOT AFFECTED BY (b) SEX OR (c) FAVORITE STYLE GROUP.

The effect of sex on the relationship between favorite style and style of design selected in each trial by sex is shown in Appendix I. Two-sample Z-tests of proportion for each trial indicated no differences between males and females in the proportion of times favorite style of design was selected (See Table 30).

Chi-square tests were done on each trial to see if members of each favorite style group chose their favorite style the same proportion of the time. As Tables 32 to 36 indicate, no significant differences between favorite style groups were found.

TABLE 32

FAVORITE STYLE BY WHETHER FAVORITE STYLE SELECTED IN TRIAL 1

FAVORITE STYLE	FAVORITE STYLE SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
CREW	16 16.6 0.0 76.19	5 4.4 0.1 23.81	21
POLO	14 14.3 0.0 77.78	4 3.7 0.0 22.22	18
STAND-UP	25 26.1 0.0 75.76	8 6.9 0.2 24.24	33
TURTLENECK	23 18.2 1.3 100.00	0 4.8 4.8 0.00	23
V-NECK	21 23.8 0.3 70.00	9 6.2 1.2 30.00	30
TOTAL	99	26	125

CHI-SQUARE= 7.957 DF=4 PROB=0.0932

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
 TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 33

FAVORITE STYLE BY WHETHER FAVORITE STYLE SELECTED IN TRIAL 2

FAVORITE STYLE	FAVORITE STYLE SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
CREW	16 17.6 0.2 76.19	5 3.4 0.8 23.81	21
POLO	14 15.1 0.1 77.78	4 2.9 0.4 22.22	18
STAND-UP	28 27.7 0.0 84.85	5 5.3 0.0 15.15	33
TURTLENECK	23 19.3 0.7 100.00	0 3.7 3.7 0.00	23
V-NECK	24 25.2 0.1 80.00	6 4.8 0.3 20.00	30
TOTAL	105	20	125

CHI-SQUARE= 6.227 DF=4 PROB=0.1828

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 34

FAVORITE STYLE BY WHETHER FAVORITE STYLE SELECTED IN TRIAL 3

FAVORITE STYLE	FAVORITE STYLE SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
CREW	15 17.5 0.3 71.43	6 3.5 1.7 28.57	21
POLO	14 15.0 0.1 77.78	4 3.0 0.3 22.22	18
STAND-UP	26 27.5 0.1 78.79	7 5.5 0.4 21.21	33
TURTLENECK	23 19.1 0.8 100.00	0 3.9 3.9 0.00	23
V-NECK	26 25.0 0.0 86.67	4 5.0 0.2 13.33	30
TOTAL	104	21	125

CHI-SQUARE= 7.822 DF=4 PROB=0.0983

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 35

FAVORITE STYLE BY WHETHER FAVORITE STYLE PICKED IN TRIAL 4

FAVORITE STYLE	FAVORITE STYLE SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
CREW	16 18.3 0.3 76.19	5 2.7 2.0 23.81	21
POLO	14 15.7 0.2 77.78	4 2.3 1.2 22.22	18
STAND-UP	30 28.8 0.1 90.91	3 4.2 0.4 9.09	33
TURTLENECK	23 20.1 0.4 100.00	0 2.9 2.9 0.00	23
V-NECK	26 26.2 0.0 86.67	4 3.8 0.0 13.33	30
TOTAL	109	16	125

CHI-SQUARE= 7.503 DF=4 PROB=0.1116

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 36

FAVORITE STYLE BY WHETHER FAVORITE STYLE SELECTED IN TRIAL 5

FAVORITE STYLE	FAVORITE STYLE SELECTED		TOTAL
	NO	YES	
FREQUENCY			
EXPECTED			
CELL CHI2			
ROW PCT			
CREW	14 16.6 0.4 66.67	7 4.4 1.6 33.33	21
POLO	15 14.3 0.0 83.33	3 3.7 0.1 16.67	18
STAND-UP	24 26.1 0.2 72.73	9 6.9 0.7 27.27	33
TURTLENECK	23 18.2 1.3 100.00	0 4.8 4.8 0.00	23
V-NECK	23 23.8 0.0 76.67	7 6.2 0.1 23.33	30
TOTAL	99	26	125

CHI-SQUARE= 9.186 DF=4 PROB=0.0566

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

Therefore, there was no reason to reject hypotheses #4(b) and (c).

5.2.5 Hypothesis #5

THERE IS NO DIFFERENCE IN THE IMPORTANCE OF FAVORITE COLOR AND FAVORITE STYLE IN DETERMINING CHOICE OF DESIGNS.

As mentioned previously, the relative importance of favorite color and favorite style in determining design choice was investigated in two ways: (i) the results of hypotheses #1 and 3 were compared and (ii) a determinant factor (DF) score was calculated for each child and a Z-test was used to determine whether the mean DF was equal to zero.

5.2.5.1 Comparison of Results of Hypotheses #1 and 3

Comparisons between Tables 23 and 30 on the proportion of times favorite color and favorite style were selected in each trial indicated that favorite color was stronger than favorite style in determining choice. Favorite color was selected significantly more than random expectations in trials 1 to 3 whereas favorite style was selected more frequently than random only in trial 1.

Therefore, while favorite style has some influence on style choice in the first trial, the proportion of times favorite color was selected was greater and was significant in more trials.

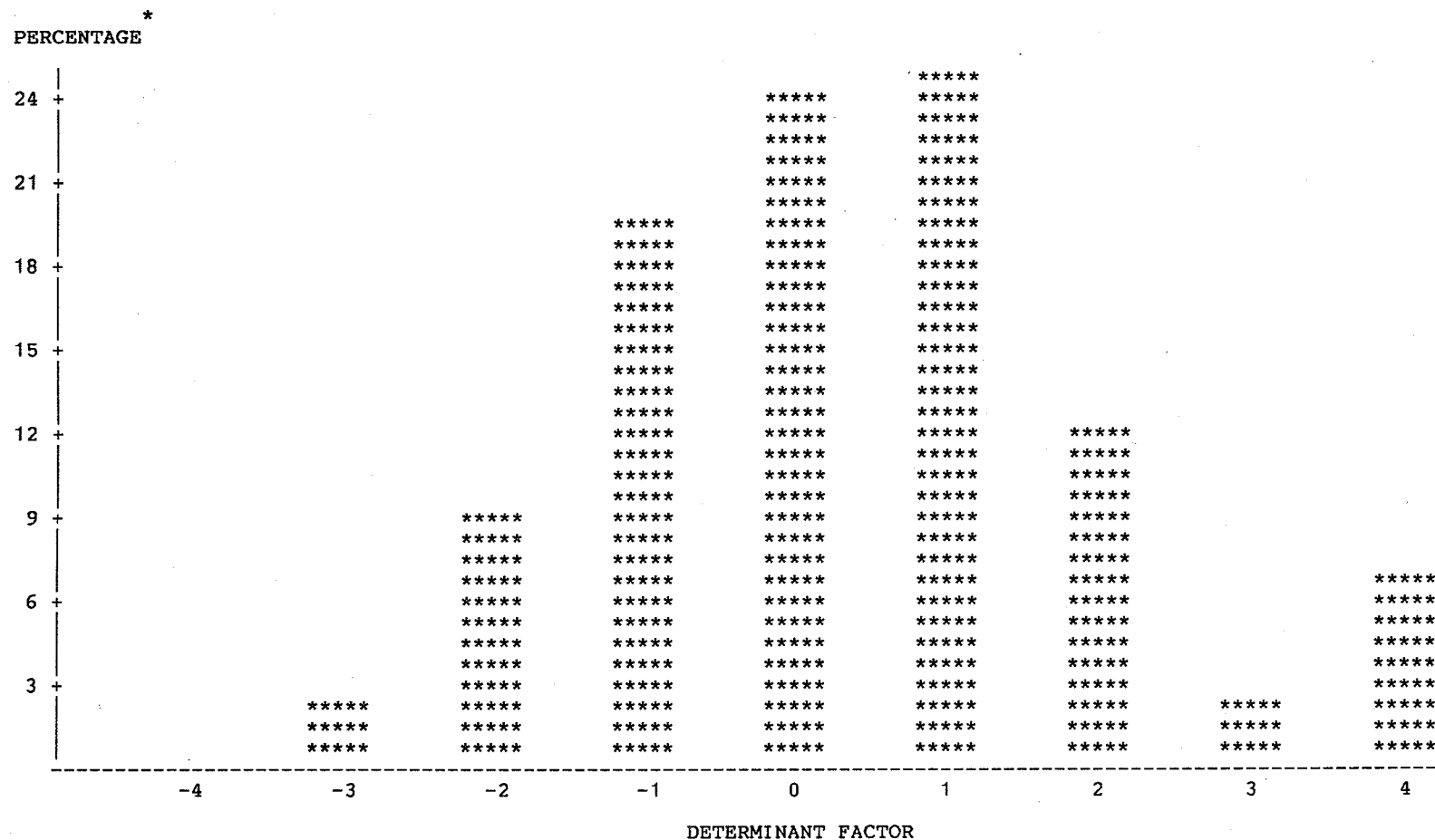
5.2.5.2 Determinant Factor

A determinant factor was calculated for each child by subtracting the number of times a child selected his/her favorite style from the number of times he/she selected his/her favorite color.

Figure 5 shows a histogram of the determinant factor scores for all children. The majority of DF scores were between -1 and 1, with the mean DF score being .376. No child picked totally by favorite style (DF score of -4) whereas eight children picked totally by favorite color (DF score of 4). From Figure 5, it appears that neither favorite color nor favorite style influenced design choice greatly, although the effect of favorite color was somewhat greater.

A Z-test testing that the mean determinant factor was equal to zero was significant at $p < .05$ ($Z = 2.603$). Therefore, favorite color influenced choice of designs significantly more than favorite style did leading to a rejection of hypothesis #5. However, if one considers that the mean number of times favorite color was selected in five trials was 1.464 (compared to 1.088 for favorite styles) and that the mean DF was .376, the influence of favorite color on choice, while greater than that of favorite style, appeared to be limited.

FIGURE 5
DISTRIBUTION OF DETERMINANT FACTOR SCORES



*
FOR EXAMPLE, 2.4% OF CHILDREN HAD DF SCORES OF -3.

5.2.6 Hypothesis #6

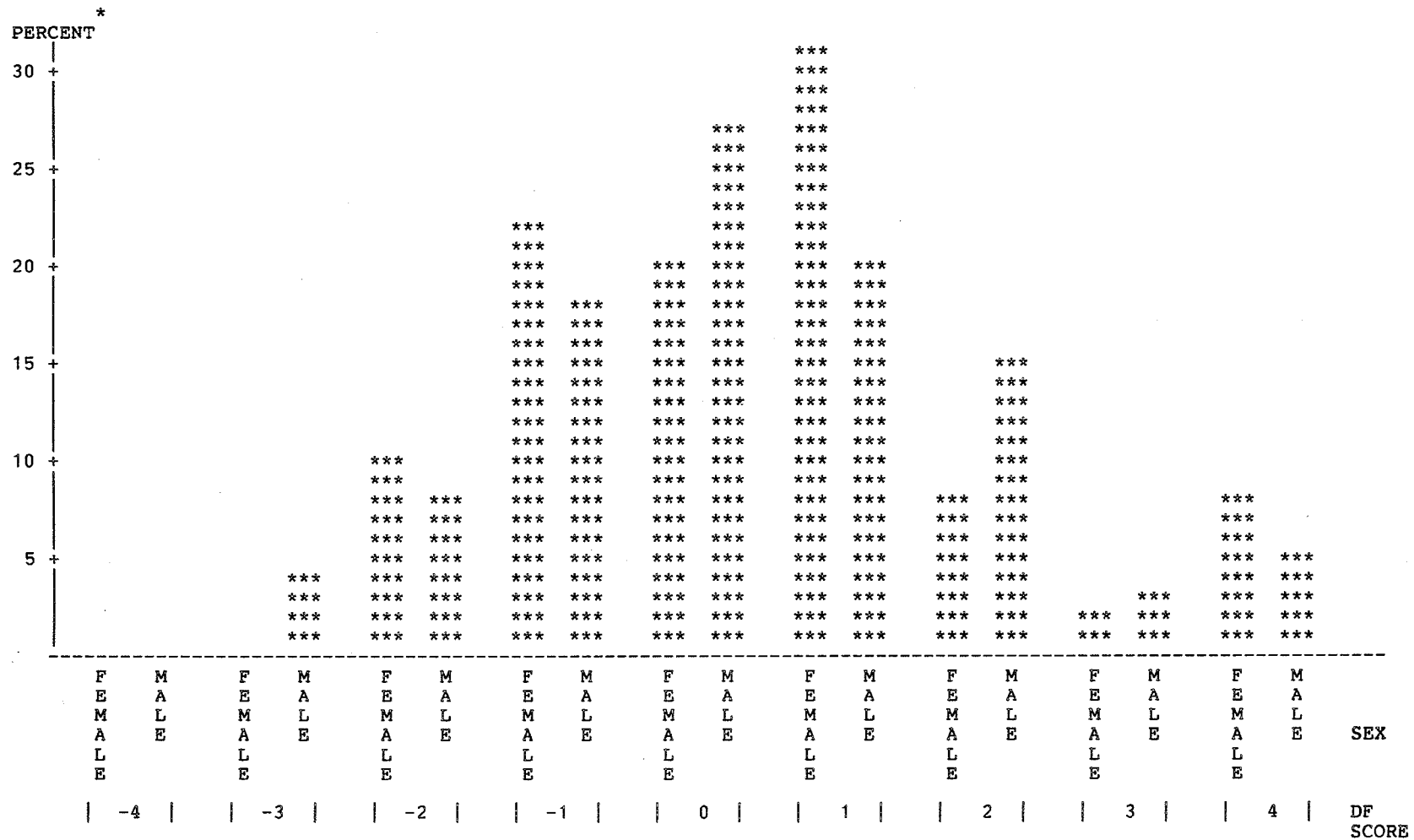
THERE ARE NO DIFFERENCES BETWEEN (a) MALES AND FEMALES, (b) FAVORITE COLOR GROUPS AND (c) FAVORITE STYLE GROUPS IN THE RELATIVE IMPORTANCE OF FAVORITE COLOR AND FAVORITE STYLE IN DETERMINING CHOICE OF DESIGNS.

The DF scores of males and females are compared in Figure 6. A two sample Z-test revealed that these differences were not significant ($z=.317$).

Figures 7 to 8 provide a comparison of different favorite color groups and favorite style groups on DF scores. As chi-square values in Tables 37 to 38 indicate, differences between favorite color groups and between favorite style groups in DF scores were not significant.

FIGURE 6

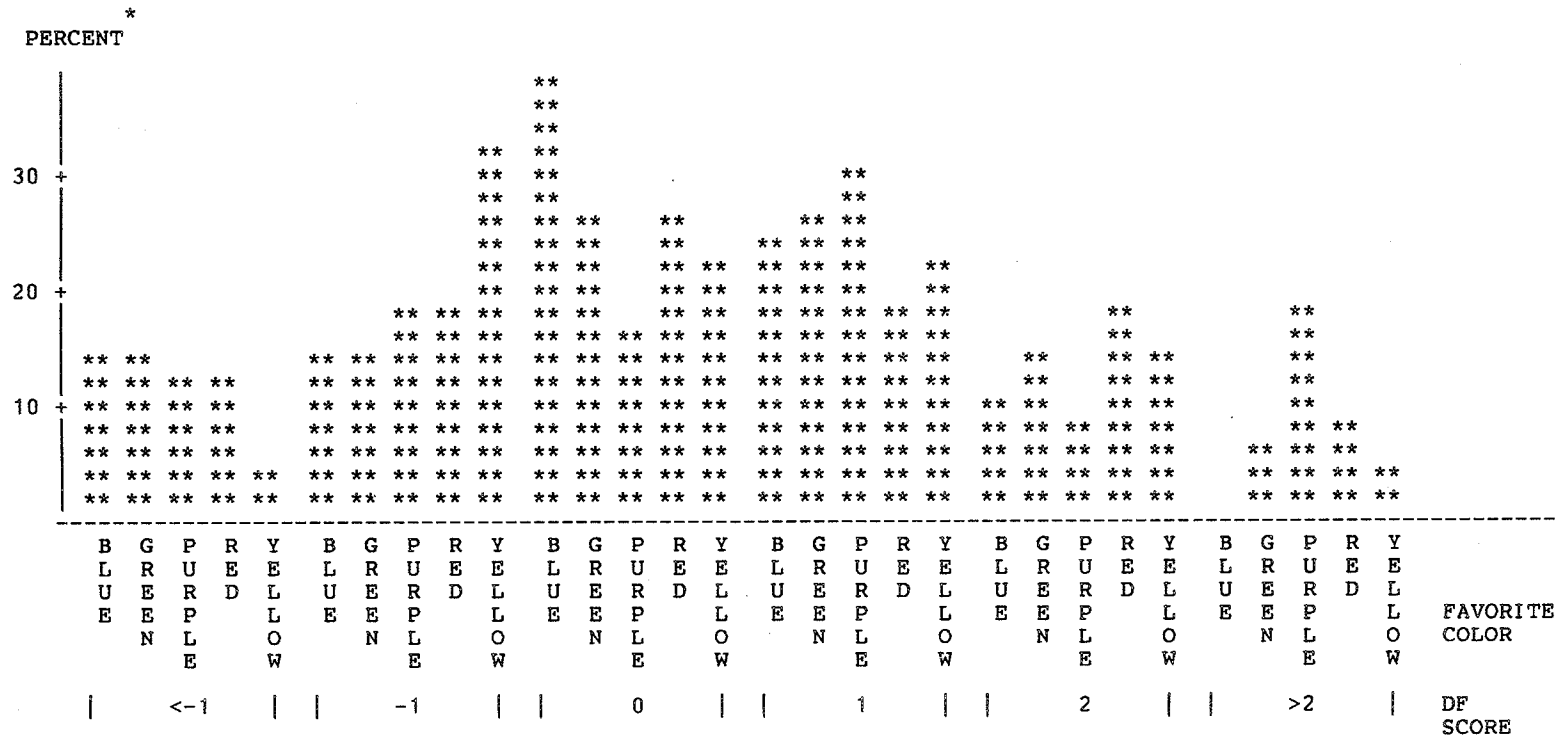
DISTRIBUTION OF DETERMINANT FACTOR SCORES BY SEX



* FOR EXAMPLE, 9.8% OF FEMALES AND 8.1% OF MALES HAD DF SCORES OF -2.

FIGURE 7

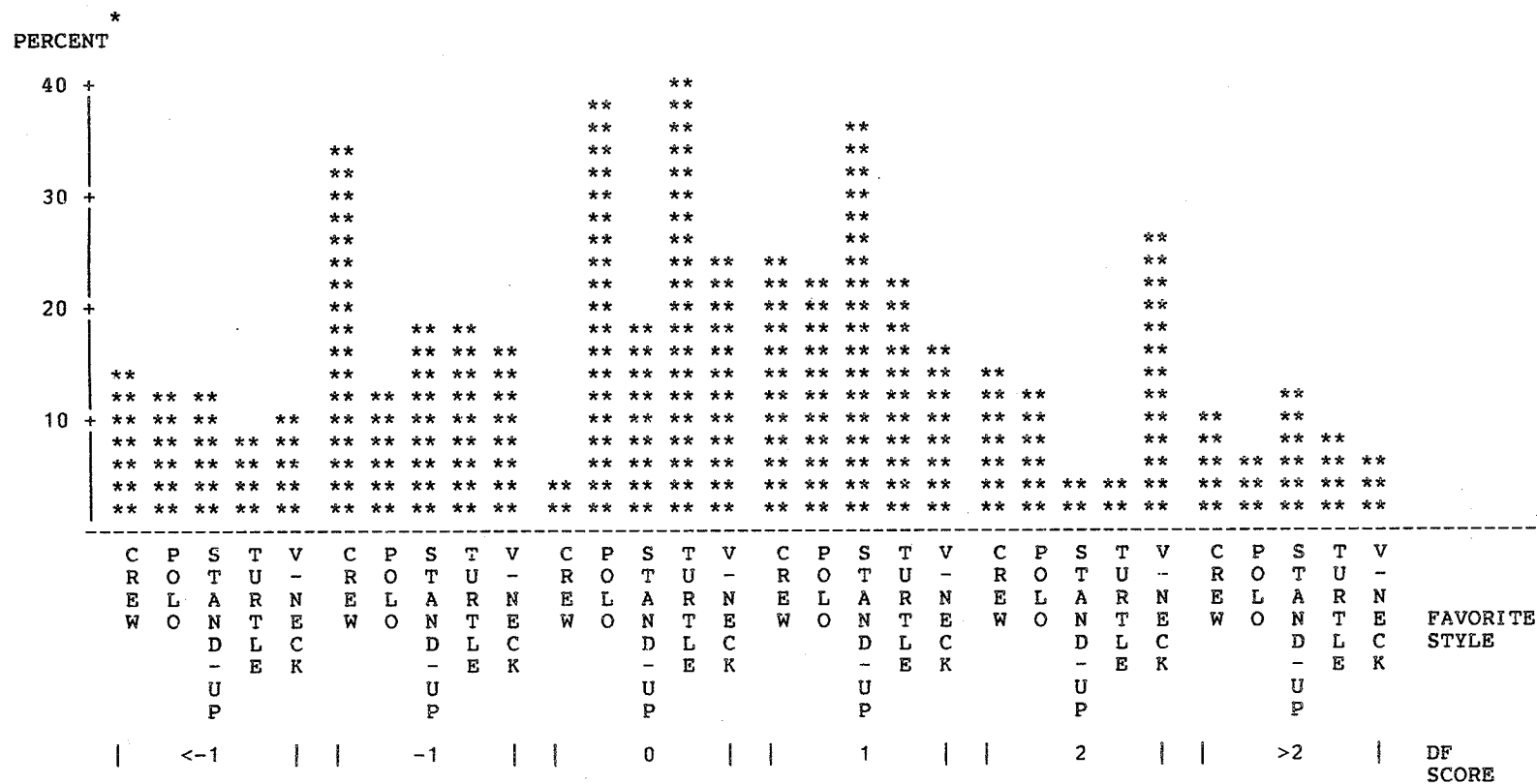
DISTRIBUTION OF DETERMINANT FACTOR SCORES BY FAVORITE COLOR GROUP



* FOR EXAMPLE, 14.3% OF CHILDREN WHOSE FAVORITE COLOR WAS BLUE HAD DF SCORES OF -2 OR LESS.

FIGURE 8

DISTRIBUTION OF DETERMINANT FACTOR SCORES BY FAVORITE STYLE GROUP



* FOR EXAMPLE, 14.3% OF CHILDREN WHOSE FAVORITE STYLE WAS THE CREW NECK HAD DF SCORES OF -2 OR LESS.

TABLE 37

DETERMINANT FACTOR SCORES BY FAVORITE COLOR GROUP

FAVORITE COLOR	DETERMINANT FACTOR						TOTAL
	≤-2	-1	0	1	2	≥3	
FREQUENCY							
EXPECTED							
CELL CHI2							
ROW PCT							
BLUE	3 2.4 0.2 14.29	3 4.0 0.3 14.29	8 5.0 1.7 38.10	5 5.2 0.0 23.81	2 2.5 0.1 9.52	0 1.8 1.8 0.00	21
GREEN	2 1.7 0.1 13.33	2 2.9 0.3 13.33	4 3.6 0.0 26.67	4 3.7 0.0 26.67	2 1.8 0.0 13.33	1 1.3 0.1 6.67	15
PURPLE	5 4.5 0.1 12.50	7 7.7 0.1 17.50	6 9.6 1.3 15.00	12 9.9 0.4 30.00	3 4.8 0.7 7.50	7 3.5 3.4 17.50	40
RED	3 3.0 0.0 11.11	5 5.2 0.0 18.52	7 6.5 0.0 25.93	5 6.7 0.4 18.52	5 3.2 1.0 18.52	2 2.4 0.1 7.41	27
YELLOW	1 2.5 0.9 4.55	7 4.2 1.8 31.82	5 5.3 0.0 22.73	5 5.5 0.0 22.73	3 2.6 0.0 13.64	1 1.9 0.5 4.55	22
TOTAL	14	24	30	31	15	11	125

CHI-SQUARE=15.404 DF=20 PROB=0.7528

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 38
DETERMINANT FACTOR SCORES BY FAVORITE STYLE GROUP

FAVORITE STYLE	DETERMINANT FACTOR						TOTAL
	≤-2	-1	0	1	2	≥3	
FREQUENCY							
EXPECTED							
CELL CHI2							
ROW PCT							
CREW	3 2.4 0.2 14.29	7 4.0 2.2 33.33	1 5.0 3.2 4.76	5 5.2 0.0 23.81	3 2.5 0.1 14.29	2 1.8 0.0 9.52	21
POLO	2 2.0 0.0 11.11	2 3.5 0.6 11.11	7 4.3 1.7 38.89	4 4.5 0.0 22.22	2 2.2 0.0 11.11	1 1.6 0.2 5.56	18
STAND-UP	4 3.7 0.0 12.12	6 6.3 0.0 18.18	6 7.9 0.5 18.18	12 8.2 1.8 36.36	1 4.0 2.2 3.03	4 2.9 0.4 12.12	33
TURTLE- NECK	2 2.6 0.1 8.70	4 4.4 0.0 17.39	9 5.5 2.2 39.13	5 5.7 0.1 21.74	1 2.8 1.1 4.35	2 2.0 0.0 8.70	23
V-NECK	3 3.4 0.0 10.00	5 5.8 0.1 16.67	7 7.2 0.0 23.33	5 7.4 0.8 16.67	8 3.6 5.4 26.67	2 2.6 0.2 6.67	30
TOTAL	14	24	30	31	15	11	125

CHI-SQUARE=23.228 DF=20 PROB=0.2777

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS OF LESS THAN 5.
TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

5.2.7 Hypotheses #7 and 8

7. NO COLOR IS SELECTED MORE FREQUENTLY THAN ANY OTHER COLOR.

8. THERE ARE NO DIFFERENCES BETWEEN THE SEXES IN THE FREQUENCY OF SELECTION OF EACH COLOR.

Table 39 shows the number of times each color was selected when all choices from all five trials were combined. As Table 39 reveals, purple was selected most often overall (25.1% of time) followed by red (21.1%), yellow (19.4%) and green (17.9%). Blue was selected least often (16.5%).

TABLE 39
NUMBER OF TIMES COLORS SELECTED OVERALL

SEX	COLORS					
FREQUENCY ROW PCT.	PURPLE	RED	YELLOW	GREEN	BLUE	TOTAL
FEMALE	66 25.9	53 20.8	55 21.6	42 16.5	39 15.3	255
MALE	91 24.6	79 21.4	66 17.8	70 18.9	64 17.3	370
TOTAL	157 25.1	132 21.1	121 19.4	112 17.9	103 16.5	625

If colors were picked randomly, one would expect each color to be picked approximately 20% of the time. Therefore, purple and red were selected more often than

randomly and blue and green were selected less often than randomly. Because data were not independent when children's five choices were combined, statistical significance of color choice proportions could not be tested. However, it would appear that purple was selected considerably more frequently than random and that blue was selected much less than would be expected by random selection.

The first trial was therefore analyzed separately to determine whether color preferences were significant. As mentioned previously, the first trial was analyzed because it represented a child's first choice. The fact that the highest proportion of children selected their favorite color in trial 1 further justifies analysis of trial 1 to determine color preferences.

To see if the proportion of times each color was selected in trial 1 was significantly different from random expectations, a Z-test of proportion was done for each color. As Table 40 indicates, purple and red were selected more often than random expectations and yellow and blue were selected less often than expected.

These results compare somewhat with combined data (Table 39) in that purple and red were most preferred and blue was least preferred. The preferences overall, however, did not appear to be as strong as in trial 1. This fact is not surprising since significant differences in the frequency of

TABLE 40
COLOR PREFERENCES IN TRIAL 1

COLOR	PROPORTION OF TIMES SELECTED	Z
PURPLE	.320	3.35***
RED	.296	2.68**
GREEN	.136	-1.78
YELLOW	.128	-2.01*
BLUE	.120	-2.23*

*** $p < .001$

** $p < .01$

* $p < .05$

selection of colors were found only in trials 1 and 2 (See Table 6).

As Table 39 indicates, differences between males and females in the percentage of each color selected were small. Females seemed to like purple and yellow more than males whereas males chose red, green and blue more than females. As Table 7 to 11 revealed, analysis of these differences by trial using chi-square found that none were significant.

5.2.8 Hypotheses #9 and 10

9. NO STYLE IS SELECTED MORE FREQUENTLY THAN ANY OTHER STYLE.

10. THERE ARE NO DIFFERENCES BETWEEN THE SEXES IN THE FREQUENCY OF SELECTION OF EACH STYLE.

Combined data for style choices are shown in Table 41. The stand-up collar style was selected most often overall and by both sexes, whereas the v-neck style was selected least often overall and by both sexes. Frequencies for the remaining styles were close to random expectations.

TABLE 41
NUMBER OF TIMES STYLES SELECTED OVERALL

SEX	STYLES					
FREQUENCY ROW PCT.	STAND-UP	TURTLE	CREW	POLO	V-NECK	TOTAL
FEMALES	60 23.5	56 22.0	50 19.6	45 17.6	44 17.3	255
MALES	83 22.4	68 18.4	77 20.8	75 20.3	67 18.1	370
TOTAL	143 22.9	124 19.8	127 20.3	120 19.2	111 17.8	625

Because the statistical significance of combined data on preferences could not be calculated, trial 1 was analyzed separately to determine the significance of style preferences. Again, trial 1 was selected because it represented a child's first choice and because children picked the highest proportion of designs in their favorite style in trial 1.

To see if the proportion of times each style was selected in trial 1 was significantly different from random expectations, a Z-test of proportion was done for each style. As Table 42 reveals, the turtleneck style was selected significantly more often than random whereas the crew neck style was selected less often than expected. Frequencies for the other styles indicated random choice.

TABLE 42
STYLE PREFERENCES IN TRIAL 1

STYLE	PROPORTION OF TIMES SELECTED	Z
TURTLENECK	.288	2.46*
STAND-UP	.248	1.34
POLO	.184	-0.45
V-NECK	.160	-1.11
CREW	.120	-2.23*

* $p < .05$

As Table 41 indicates, differences between males and females in the number of times styles were selected overall were slight. Females chose turtlenecks more often than males and males selected polo shirts more often than females. Chi-square tests for each trial (Tables 13 to 17) found that differences between the sexes were not significant.

However, as a comparison between Tables 41 and 42 reveal, there appears to be little similarity between style choices overall and style choices in trial 1. Moreover, of the two trials where significant style preferences were found, trials 1 and 3, the most and least preferred styles were reversed (See Table 12). The fact that the design selected most often in both trials was purple and the design selected least often was blue in both cases suggests that children may have been picking designs on the basis of color rather than style. Further investigation of style preferences appears to be needed before any conclusions can be made.

5.2.9 Hypotheses #11 and 12

11. THERE IS NO DIFFERENCE IN CHILDREN'S PREFERENCES FOR STYLES WITH BUTTONS OR STYLES WITHOUT BUTTONS OVERALL.

12. THERE ARE NO DIFFERENCES BETWEEN THE SEXES IN PREFERENCES FOR STYLES WITH BUTTONS.

Table 43 illustrates the number of times styles with buttons and styles without buttons were selected overall. Because there are two styles with buttons and three without, one would expect that if styles were selected randomly, styles with buttons would be selected about 40% of the time and styles without buttons would be selected about 60% of the time.

TABLE 43
OVERALL BUTTON PREFERENCES

SEX	BUTTON PREFERENCE		
FREQUENCY ROW PCT.	WITHOUT BUTTONS	WITH BUTTONS	TOTAL
FEMALES	150 58.8	105 41.2	255
MALES	212 57.3	158 42.7	370
TOTAL	362 57.9	263 42.1	625

As Table 43 illustrates, although styles with buttons were chosen very slightly more than would be expected randomly, the differences were very small.

Males and females were very similar in the proportion of times styles with and without buttons were selected (See Table 43).

Chapter VI

DISCUSSION

6.1 FACTORS DETERMINING DESIGN CHOICE

The results of this study are in agreement with the results of previous studies that color is important to preschoolers in design choice and that style does not seem to influence choice to a great extent. However, the importance of favorite color seems to be limited mainly to a child's first choice of design. The proportion of children selecting designs in their favorite color in general decreased from the first to last trial.

When these results are related to the conceptual framework of the study, Piaget's concept of centration, it appears that while preschool children tended to centre on a particular color in their first choice of design, this tendency decreased with the number of trials. Only nine out of 125 children selected only one color in all five trials.

The difficulty many children experienced in choosing a favorite style and the lack of a relationship between favorite style and style of design selected suggest that style may be an aspect of design which preschoolers have difficulty differentiating or that they do not find style to

be an important factor in design choice. This finding is not surprising since color differences were probably more striking to children than style differences, which were limited by a number of factors previously stated. Further studies using greater style differences would be useful in understanding preference.

As Table 18 indicated, the majority of children selected at least four different colors. Over a third of children chose all five colors. Far fewer children (See Table 19) chose a variety of styles. This may indicate that while children may have a favorite color, their preference for it over the other colors is not great enough to warrant picking it exclusively. This is not surprising given the fact that all five colors were selected to appeal to preschoolers. Results may have been different if dark, dull colors had been used.

Children's comments during testing also suggested that they were attempting to pick a variety of colors. When asked to select a design, children would usually refer to the color of the design (eg. the red one, the blue one, now the yellow one, etc.). In addition, during the pretest for this study, some children were asked why they chose each design. Most answered that they chose a design because of the color even though they may have selected a number of different colors.

A theory of choice behavior proposed by Siegel, Siegel and Andrews (1964) may help to explain children's tendency to choose a variety of colors. Siegel et al. suggest that in a decision-making process, one must consider the utility or subjective value of the outcome to the individual. In a repetitive choice situation, such as in the procedure of this study, utility is achieved in two ways, through correct choice and choice variability. Since there were no right or wrong choices in this study, the utility of a correct choice would be selecting a color of design which appealed to the child (since style did not seem to be important). Since all five colors were selected to appeal to preschoolers, the value to the child in picking his favorite color may not have differed greatly from the utility of selecting the other colors. Having picked his/her favorite color in the first trial, children may have derived more satisfaction in subsequent trials from selecting a variety of colors than from choosing his/her favorite color.

Thus, color does appear to be an important factor in design choice for preschoolers. However, a child's favorite color only seems to be a determining factor on the child's first choice of design. When other colors are also appealing, children seem to prefer a variety of colors to selecting all designs in their favorite color. Style did not appear to be an important factor in design choice.

6.2 COLOR AND STYLE PREFERENCES

In children's first choice of designs, purple and red were significantly more preferred than other colors. Blue and yellow were selected significantly less than the other colors. Significant color preferences, however, were only found in the first two trials.

While this study does confirm a preference for red found in a number of previous studies (See Table 2), the most frequently chosen color in this study, purple, was never mentioned as a preferred color. In fact, in Hunt's study, violet was least liked by five- and six-year olds. This difference possibly may be due to the difference in age or to a difference in value or chroma.⁷

Blue, the least preferred color in this study, was found to be a preferred color in studies by Garth (1924), Katz and Breed (1922) and Schulhof (1979). Yellow, the second least preferred color, was found to be a preferred color by Katz & Breed (1922) and Michaels (1922). Again, these differences also may reflect differences in ages tested or in the value and chroma of the color used.

⁷ Hunt's study used colors in the most saturated levels possible at value levels necessary to produce maximum saturation. The purple used in designs in this study was less saturated and slightly lighter than this. Comparisons regarding hues is not possible because they were not specified in Hunt's study.

The turtleneck style was found to be the most preferred first choice of style whereas the crew neck design was the least preferred style. However, in view of the great inconsistency of style choices overall and between trials, and because, given the design of the study, there was no way of knowing whether a child picked a design for the color or for the style, interpretation of these results is difficult. Further research is needed on style preferences keeping color constant or using different Latin Squares for each child so that style preferences can be better assessed.

Buttons appear to have had no overall effect on design choice. It should be noted however, that buttons used in this study were an integral part of the design and were therefore considered as part of the structural design of the garment. A different result might be expected with decorative buttons since the literature indicates that children are attracted by decorative detail.

6.3 IMPLICATIONS AND LIMITATIONS OF THE STUDY

When discussing the implications of this study, it should be remembered that this study was limited to five colors and five styles. Further research using other types of clothing styles and other colors (varying in hue, value and chroma) is needed before any generalizations can be made. The role variety plays in choice also needs further study. As well, much children's wear contains color

variation and decorative detail, and so the role of these factors in determining choice needs further investigation.

The effect of trial order on the relationship between favorite color and color of design selected, suggests that a stronger relationship might have been found if trials took place at different times. This also might be an area for future research. Separating trials by several days might more closely approximate a situation of a child deciding what to wear each day or a real shopping situation where it is likely that fewer than five choices would be made at one time.

Despite these limitations, the results of this study do suggest that parents of preschool children could pay more attention to the color of a garment rather than the style. Although parents who are aware of their child's favorite color(s) may wish to buy a higher proportion of clothes in these colors, a variety of colors seems to be very important to preschoolers. Relatively small differences in the style of a garment do not appear to be noticed by preschoolers.

Results on color and style preferences question some of the stereotypes regarding differences between the sexes on color and style preferences. Obviously, greater differences might be expected if more styles and colors traditionally considered to be boys or girls clothing were included. However, it would seem that differences, especially color differences, may not be as great as was previously thought.

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Appendix A

LETTERS TO DAY CARE DIRECTORS AND PARENTS



THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
Department of Clothing and TextilesWinnipeg, Manitoba
Canada R3T 2N2

(204) 474-8137

I am a graduate student in the Department of Clothing and Textiles at the University of Manitoba working under the supervision of Professor C.A. Gonzales. For my Master's thesis, I am conducting a study on preschool children's clothing design preferences. The purpose of the study is (1) to investigate the relative importance of color and style in determining preschoolers' choices of clothing designs and (2) to investigate the specific colors, styles and designs which preschool children prefer.

I am requesting your permission to allow me to test three- and four-year old children in your day care on their clothing preferences, subject parental consent. Each child will be shown 25 t-shirts, five at a time. Five colors and five styles will appear in each trial in different combinations. The children will not be trying the t-shirts on. Children will then be shown five color samples and five design sketches and asked to choose their favorite from each group. Each test will take about ten minutes.

All information on children will be kept confidential. Individual responses will not in any way be identified in the study. This proposal has been approved by the Ethics Review Committee of the Faculty of Human Ecology.

As a mother of two young children, one of whom currently attends a Winnipeg day care centre, I am familiar with the day care setting and have some experience in dealing with children of this age. Testing would be done at your convenience in a manner which would be least disruptive to the routine of the day care.

I will be contacting you within the next week to inquire about your day care's participation in the study. Letters to parents of three- and four-year olds requesting consent will be provided. A summary of the results of this study will be forwarded to participating day cares upon completion.

Yours sincerely,

Pat Ahearn (Mrs.)

Professor C.A. Gonzales



THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
Department of Clothing and TextilesWinnipeg, Manitoba
Canada R3T 2N2

(204) 474-8137

Dear Parent:

I am a graduate student in the Department of Clothing and Textiles at the University of Manitoba working under the supervision of Professor C.A. Gonzales. For my Master's thesis, I am conducting a study on preschoolers' clothing preferences. The purpose of the study is (1) to investigate the relative importance of color and style in determining preschoolers' choices of clothing designs and (2) to investigate the specific colors, styles and designs which preschool children prefer.

Your child's day care director has agreed to allow me to conduct my study in the day care, subject to parental approval. Each child will be shown 25 t-shirts, five at a time and asked to choose the one that he/she likes best from each group. The clothing will not be tried on. Children will then be shown five color samples and five design sketches and asked to pick their favorite from each group. Testing will take approximately ten minutes per child.

All information on your child will be kept confidential. Individual responses will not in any way be identified in the study. The proposal for this study has been approved by the Ethics Review Committee of the Faculty of Human Ecology.

As a mother of two young children, one of whom currently attends a Winnipeg day care centre, I am familiar with the day care setting and with children of this age. Testing will be done in a manner which is least disruptive to your child's routine.

If you are willing to allow your child to participate in this study, please fill out the attached consent form and return it to your day care director. A summary of the results will be forwarded to the day care upon completion of the study. Your cooperation will be most appreciated.

If you require further information, please do not hesitate to contact me at 895-8234 or 474-9292.

Yours sincerely,

Pat Ahearn (Mrs.)

Professor C.A. Gonzales

I, parent of _____ at _____ Day care,
consent to allow him/her to participate in the above study on preschoolers' clothing design
preferences.

_____ Date _____

Parent's signature

Age of child: ___ 3 yrs. ___ 4 yrs.

If part-time, please indicate the days and times in attendance _____

Appendix B

STYLES

Figure 9: V-NECK STYLE

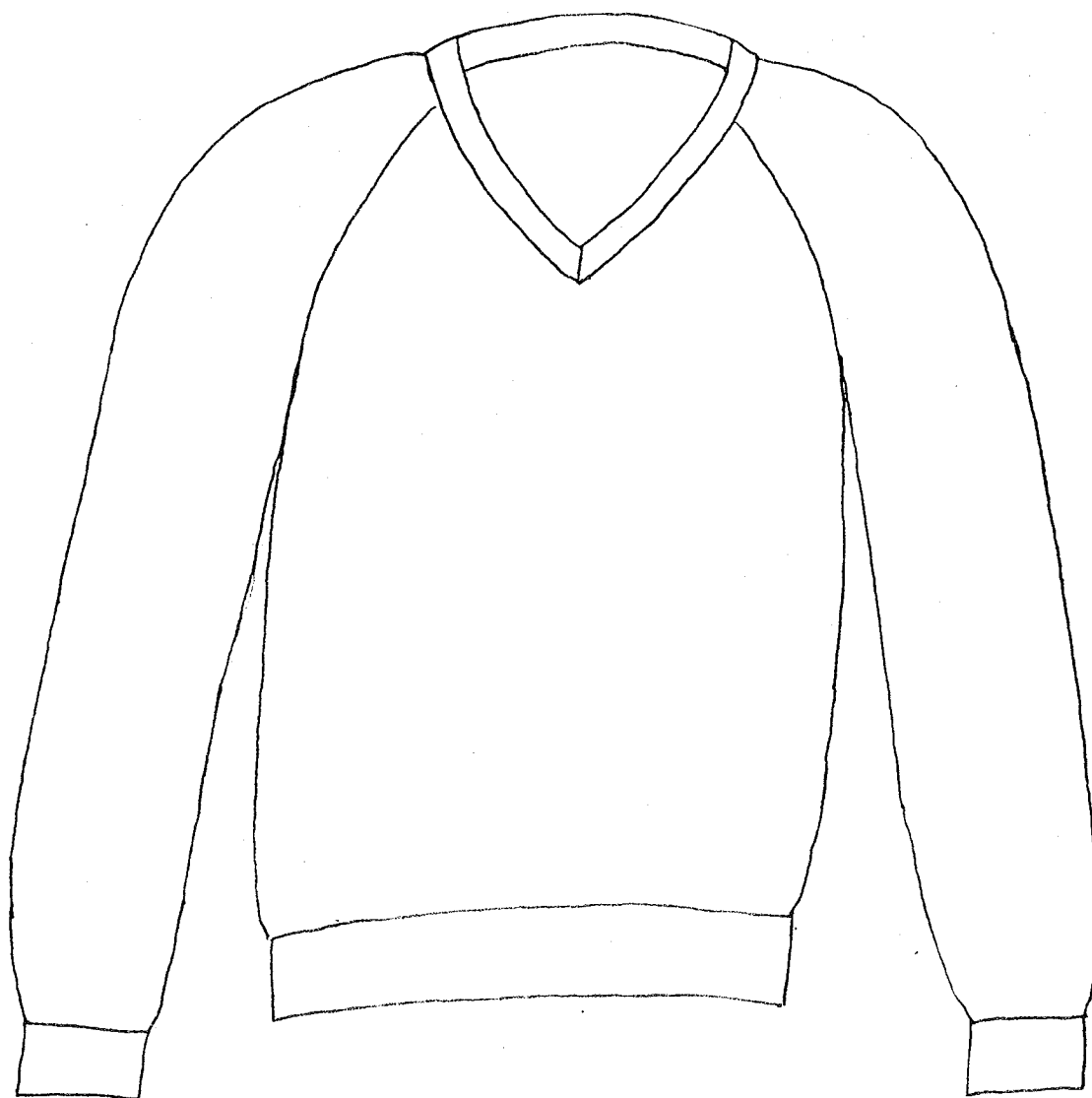


Figure 10: POLO SHIRT STYLE

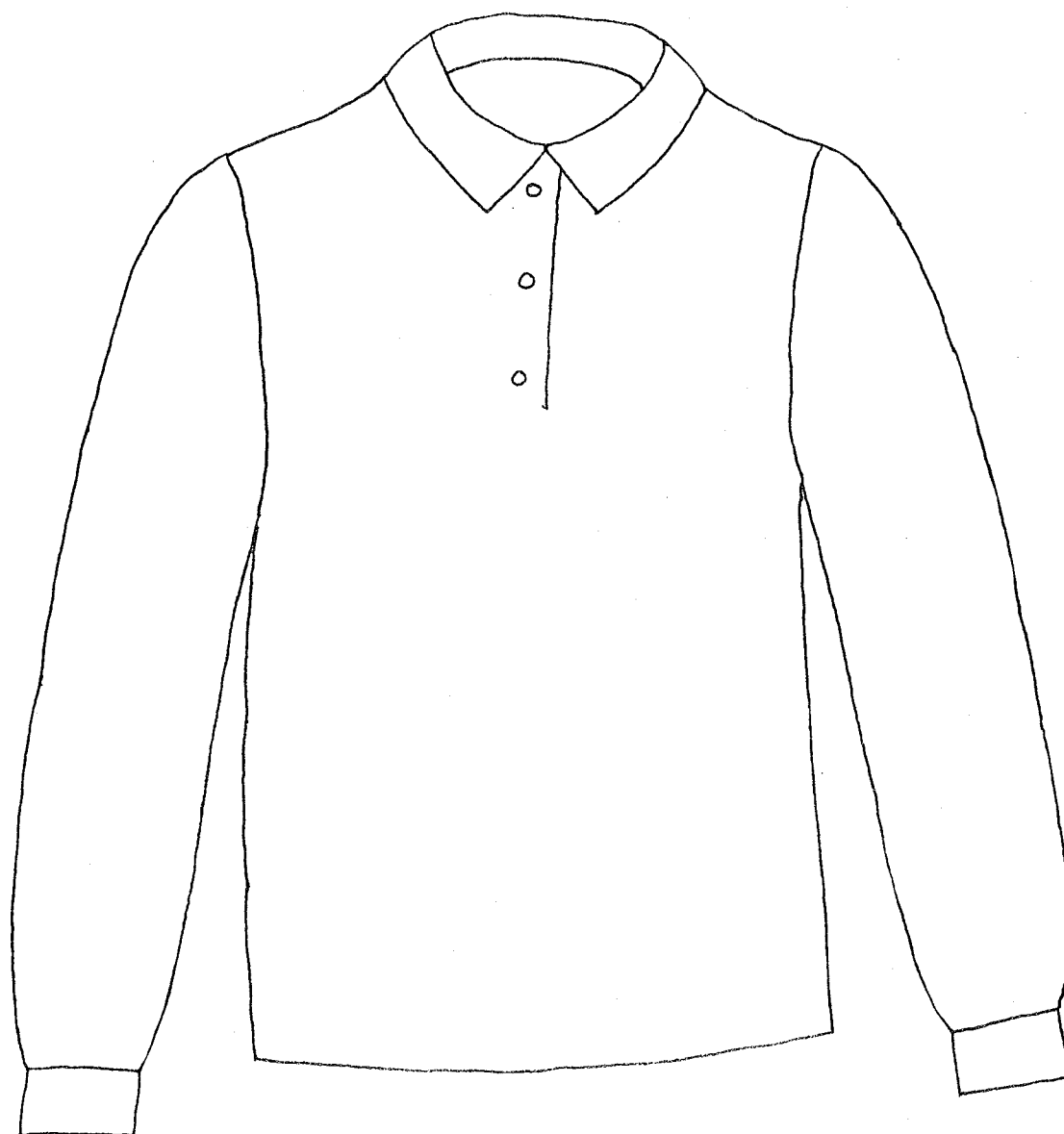


Figure 11: CREW NECK STYLE

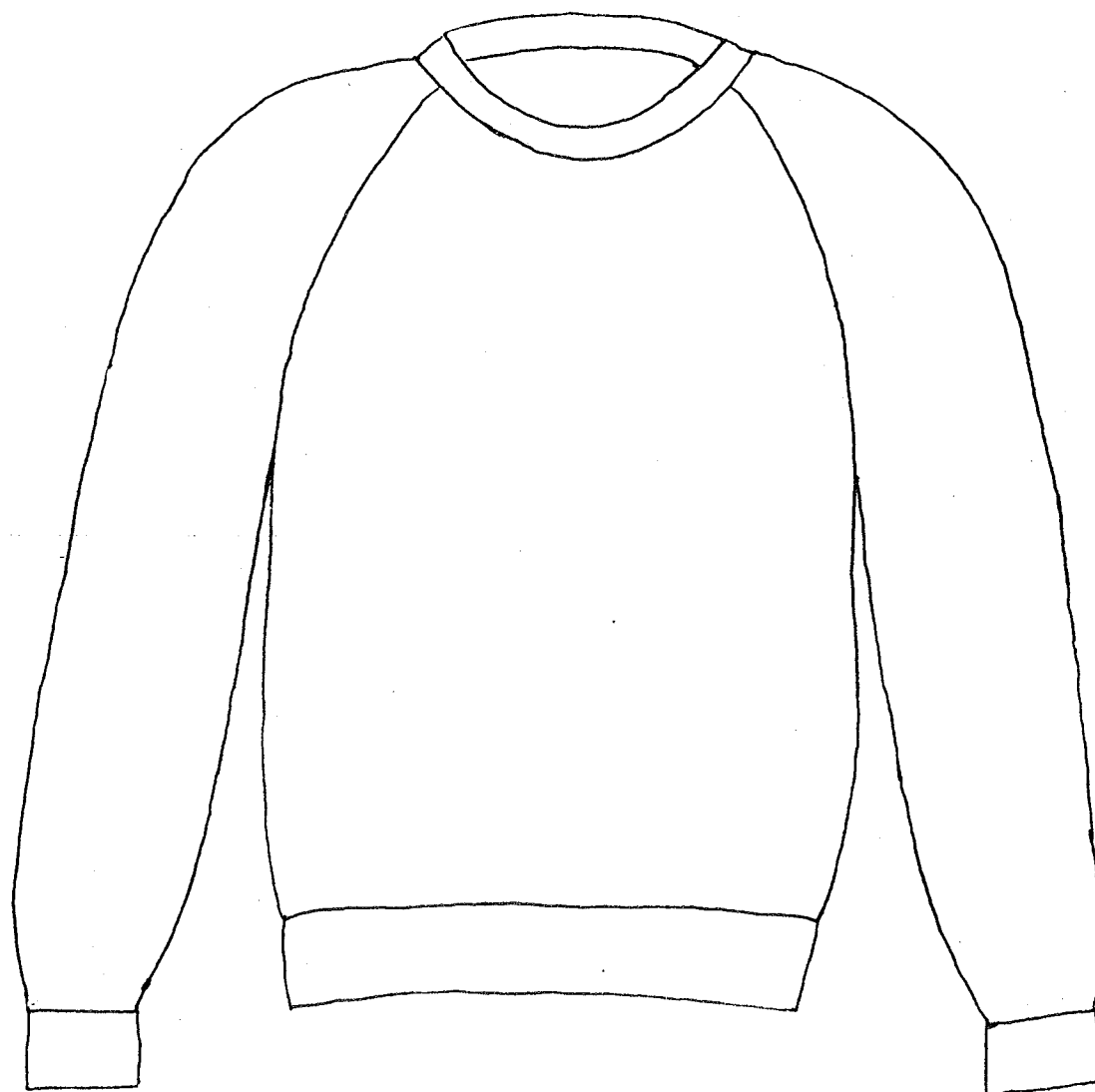


Figure 12: STAND-UP COLLAR STYLE

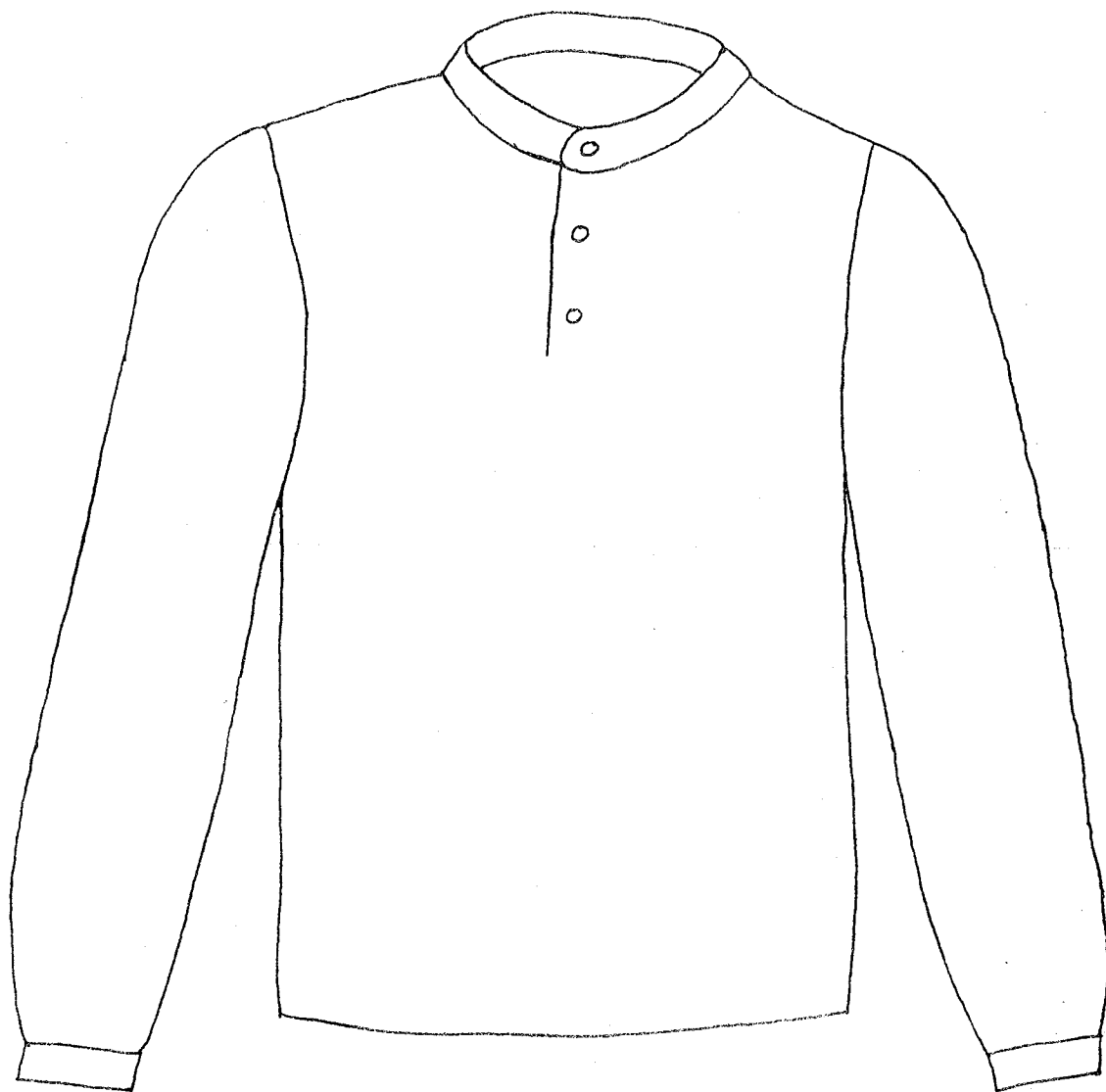
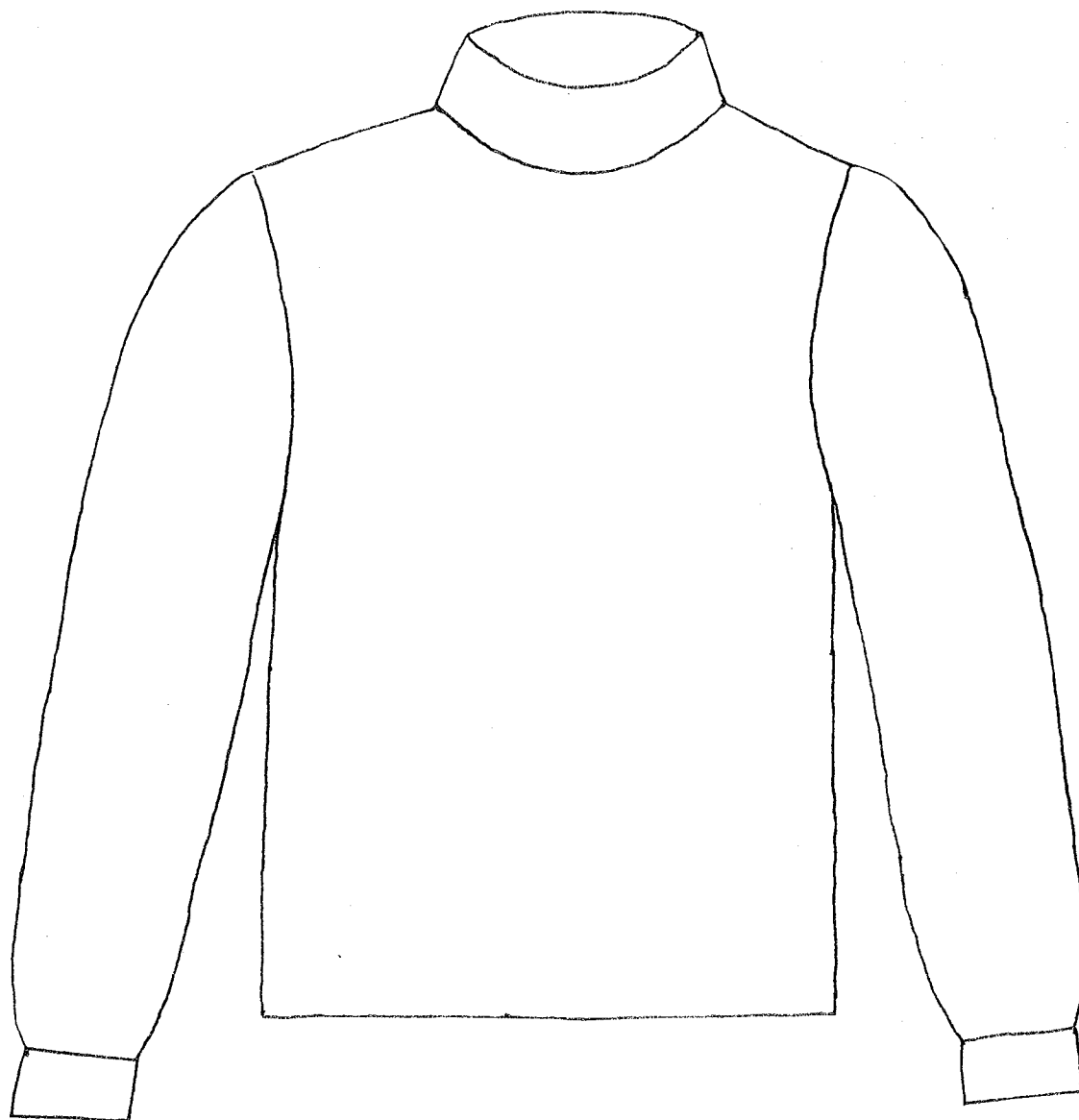


Figure 13: TURTLENECK STYLE



Appendix C
COLOR SAMPLES

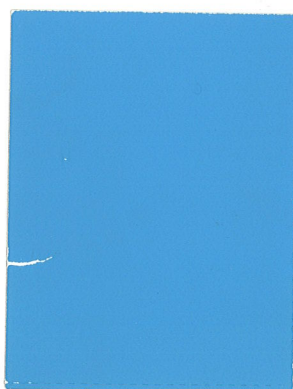
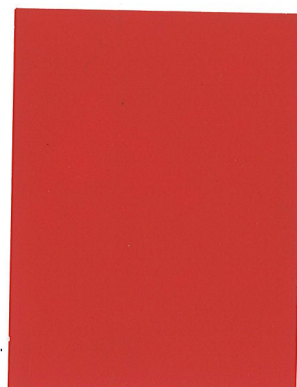
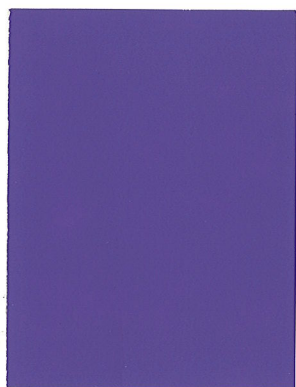
NOTICE/AVIS

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Figure 14: COLOR SAMPLES



Appendix D
SAMPLE DATA SHEET

DATA SHEET - PRESCHOOLERS' CLOTHING PREFERENCES

SUBJECT #	1	NAME					
DAY CARE						DATE	CODING
ORDER DESIGNS PRESENTED						SEX	F
TRIAL #	CHOICES (CIRCLE)						
1	GP	RV	YS	PT	BC	CHOICE 1	YS
2	BV	GS	YC	RT	PP	CHOICE 2	PP
3	GV	YT	BP	PC	RS	CHOICE 3	BP
4	GT	PV	YP	RC	BS	CHOICE 4	BS
5	GC	YV	PS	BT	RP	CHOICE 5	BT
FAVORITE COLOR					R	Y	B G P Y
FAVORITE STYLE					V	T	P C S
NUMBER OF COLORS SELECTED							3
NUMBER OF STYLES SELECTED							3
COMMENTS							

Appendix E

DESIGN, FAVORITE COLOR AND FAVORITE STYLE
CHOICES

TABLE 44

CHILD #	DESIGNS SELECTED IN TRIALS 1-5					SEX	FAVORITE COLOR	FAVORITE STYLE
	1	2	3	4	5			
1	YS	PP	BP	BS	BT	FEMALE	YELLOW	STAND
2	RS	PV	BV	PT	YV	MALE	BLUE	TURTLE
3	GV	GT	YC	BC	GC	MALE	PURPLE	V-NECK
4	YP	RT	GC	BP	GP	MALE	YELLOW	STAND
5	PT	PC	PP	PV	PS	MALE	PURPLE	CREW
6	RV	RP	BV	GV	PV	MALE	RED	TURTLE
7	RP	BP	GS	GP	BS	MALE	RED	STAND
8	BT	YC	RC	GP	PC	FEMALE	BLUE	TURTLE
9	PT	RS	YP	GC	BV	FEMALE	PURPLE	STAND
10	GT	PT	BT	RT	YT	FEMALE	BLUE	CREW
11	PP	RV	GC	YP	BP	FEMALE	PURPLE	TURTLE
12	YC	RV	PC	BS	RP	MALE	YELLOW	V-NECK
13	PT	PV	PC	PP	GC	MALE	PURPLE	TURTLE
14	PP	RC	GC	YT	RV	FEMALE	PURPLE	STAND
15	PC	YP	GC	BC	GS	FEMALE	YELLOW	STAND
16	PT	PC	GS	BS	YV	FEMALE	GREEN	POLO
17	YT	BS	PS	RV	RT	MALE	PURPLE	TURTLE
18	RS	YS	GC	YP	PP	MALE	BLUE	CREW
19	RS	RP	PT	PP	PV	MALE	PURPLE	V-NECK
20	RP	BV	GT	PC	YS	MALE	RED	STAND
21	GT	PT	YV	GS	RS	FEMALE	PURPLE	TURTLE
22	RP	PT	BS	GS	YT	FEMALE	RED	CREW
23	RV	BT	YP	GS	PC	MALE	PURPLE	CREW
24	GT	PP	RP	BP	YS	MALE	GREEN	TURTLE
25	PS	GS	RS	GT	YS	FEMALE	GREEN	V-NECK
26	PV	BT	YS	GV	BV	MALE	YELLOW	V-NECK
27	PT	GS	BP	RC	YV	MALE	RED	V-NECK
28	BS	PP	GC	RS	YS	MALE	RED	TURTLE
29	RC	PC	BV	YS	GC	MALE	BLUE	CREW
30	RT	GC	YS	BS	PC	FEMALE	GREEN	STAND
31	RS	PV	GC	YS	RT	MALE	RED	V-NECK
32	PS	GP	YC	BS	RS	MALE	YELLOW	TURTLE
33	RC	PP	GV	YV	BC	FEMALE	PURPLE	V-NECK
34	PS	BC	PC	PP	RC	MALE	PURPLE	POLO
35	GP	PP	GC	GT	YT	MALE	RED	POLO
36	PS	RT	YS	RC	BP	FEMALE	GREEN	STAND
37	PC	RV	BV	GT	YV	FEMALE	YELLOW	STAND
38	RT	YP	PS	RV	BP	MALE	BLUE	V-NECK
39	BT	PT	YC	RC	RS	MALE	RED	POLO

TABLE 44 (CONT'D)

CHILD #	DESIGNS SELECTED IN TRIALS 1-5					DATA	FAVORITE	FAVORITE
	1	2	3	4	5	SEX	COLOR	STYLE
40	PP	BP	RP	PT	PV	FEMALE	PURPLE	POLO
41	RT	PS	YP	RV	PC	FEMALE	PURPLE	CREW
42	RT	PV	GC	YS	YT	FEMALE	PURPLE	TURTLE
43	BS	YC	GP	PS	RS	FEMALE	GREEN	STAND
44	BP	PT	GC	YC	PV	FEMALE	GREEN	STAND
45	RC	GV	PS	BC	YC	MALE	PURPLE	V-NECK
46	PS	PV	PP	PT	PC	FEMALE	PURPLE	POLO
47	RV	PP	BT	RS	RC	FEMALE	RED	CREW
48	YT	GP	RT	BT	PV	MALE	YELLOW	STAND
49	YT	GS	PV	BT	YS	MALE	PURPLE	POLO
50	RV	YC	GC	YT	YP	MALE	YELLOW	V-NECK
51	RT	PS	PC	RC	PT	MALE	YELLOW	V-NECK
52	RS	YS	RT	GT	BT	FEMALE	BLUE	V-NECK
53	RT	RS	GP	RC	YV	FEMALE	RED	CREW
54	YV	BV	GP	RS	PV	FEMALE	PURPLE	V-NECK
55	BV	RP	BS	BP	RV	MALE	PURPLE	V-NECK
56	PV	PS	YS	PP	RS	MALE	BLUE	STAND
57	YC	YT	YS	YV	YP	FEMALE	BLUE	CREW
58	PS	YC	RC	GP	YT	MALE	YELLOW	V-NECK
59	PT	BV	PS	YP	PC	MALE	PURPLE	V-NECK
60	BP	RT	GC	YP	PT	MALE	BLUE	STAND
61	RS	PS	YC	BS	PT	FEMALE	RED	TURTLE
62	YV	RS	BC	GS	PV	MALE	RED	V-NECK
63	PS	RV	BV	GT	PC	FEMALE	PURPLE	STAND
64	PS	GS	BC	YP	GV	MALE	BLUE	V-NECK
65	GT	RS	BV	GP	PS	MALE	RED	POLO
66	GP	PP	YT	GC	BS	MALE	RED	STAND
67	RP	PC	GP	YP	BV	MALE	RED	POLO
68	GS	PC	RC	YV	PT	FEMALE	YELLOW	CREW
69	RT	YV	RS	GP	YP	MALE	PURPLE	STAND
70	RS	PT	BS	GC	YC	MALE	PURPLE	TURTLE
71	GC	GT	GP	GV	GS	MALE	GREEN	STAND
72	GS	BC	GV	BT	YP	MALE	BLUE	TURTLE
73	RT	YP	YS	GV	YV	MALE	GREEN	POLO
74	PS	GS	YS	BS	RS	FEMALE	PURPLE	V-NECK
75	PV	GP	YV	BP	RT	FEMALE	RED	V-NECK
76	PT	PS	PP	PC	PV	MALE	YELLOW	CREW
77	GP	BS	RS	PS	YC	MALE	BLUE	POLO
78	RT	YV	PC	BC	GT	MALE	YELLOW	CREW

TABLE 44 (CONT'D)

CHILD #	DESIGNS SELECTED IN TRIALS 1-5					SEX	FAVORITE COLOR	FAVORITE STYLE
	1	2	3	4	5			
79	GP	YC	PC	BT	RC	MALE	GREEN	STAND
80	RP	YC	PV	GV	GP	FEMALE	PURPLE	V-NECK
81	YC	YP	YT	YS	YV	FEMALE	YELLOW	CREW
82	RP	YC	BS	GV	YS	MALE	PURPLE	TURTLE
83	RT	RS	RC	RV	RP	MALE	RED	TURTLE
84	GS	YT	RP	PT	BS	MALE	YELLOW	CREW
85	PV	PP	PS	PT	PC	MALE	PURPLE	V-NECK
86	GS	BP	PV	RV	BT	MALE	BLUE	CREW
87	GC	PP	YS	RS	GT	FEMALE	GREEN	V-NECK
88	PV	YC	RV	GC	PC	FEMALE	BLUE	TURTLE
89	BV	RC	PT	GV	YV	FEMALE	PURPLE	POLO
90	RS	YV	PT	BS	GS	FEMALE	YELLOW	V-NECK
91	YV	BV	RS	PT	GT	MALE	YELLOW	TURTLE
92	RS	RC	RV	RT	RP	FEMALE	RED	STAND
93	RS	BT	YP	GS	YS	FEMALE	RED	POLO
94	BT	RT	GT	RS	PT	MALE	BLUE	TURTLE
95	GP	YT	PP	RC	GC	MALE	PURPLE	STAND
96	BS	RT	PS	GV	YS	MALE	BLUE	TURTLE
97	YC	PS	PV	YS	BP	FEMALE	RED	POLO
98	YC	BT	GP	PC	BS	FEMALE	YELLOW	CREW
99	BC	PC	RC	PP	GC	MALE	RED	CREW
100	BP	YS	GC	BV	RC	MALE	YELLOW	CREW
101	BV	PC	YP	GP	RP	FEMALE	RED	STAND
102	PT	GT	RP	BP	YC	MALE	PURPLE	STAND
103	PT	GV	RT	BS	YV	FEMALE	BLUE	POLO
104	PS	GT	BC	YC	RS	MALE	GREEN	STAND
105	PP	GP	BP	BT	YP	FEMALE	PURPLE	V-NECK
106	PT	PS	RT	YT	GT	FEMALE	PURPLE	TURTLE
107	PT	PC	YC	RC	GC	FEMALE	PURPLE	CREW
108	BC	PP	GC	YP	RS	MALE	BLUE	POLO
109	PC	PS	PT	YC	BS	MALE	PURPLE	V-NECK
110	PS	RS	PV	YS	PP	MALE	RED	POLO
111	PT	GV	YC	RP	YP	MALE	YELLOW	STAND
112	RT	PV	GP	GV	RP	MALE	GREEN	TURTLE
113	PT	BT	GS	YT	RC	FEMALE	PURPLE	V-NECK
114	PP	PT	PC	BT	PV	FEMALE	PURPLE	STAND
115	PT	YC	RC	GC	BP	MALE	GREEN	POLO
116	YP	RS	BT	PT	BV	MALE	YELLOW	STAND
117	YP	BP	PT	GS	RP	FEMALE	GREEN	TURTLE

TABLE 44 (CONT'D)

CHILD #	DESIGNS SELECTED IN TRIALS 1-5					DATA SEX	FAVORITE COLOR	FAVORITE STYLE
	1	2	3	4	5			
118	BP	YC	PS	RC	RV	MALE	BLUE	STAND
119	RV	BP	PV	YV	BV	MALE	PURPLE	CREW
120	PV	RS	GS	BT	YS	MALE	PURPLE	STAND
121	RV	RP	RS	GS	YP	MALE	RED	V-NECK
122	RT	BS	GV	BC	BT	MALE	BLUE	V-NECK
123	PS	PC	PV	RV	PP	FEMALE	PURPLE	STAND
124	YS	RS	BV	RC	BT	FEMALE	RED	STAND
125	GV	PT	RC	YV	BV	MALE	RED	STAND

* DESIGNS HAVE BEEN DESCRIBED USING A TWO LETTER COLOR-STYLE CODE WITH THE FIRST LETTER REPRESENTING THE COLOR (B=BLUE, G=GREEN, P=PURPLE, R=RED, AND Y=YELLOW) AND THE SECOND LETTER REPRESENTING THE STYLE (C=CREW, P=POLO, S=STAND-UP, T=TURTLENECK, AND V=V-NECK). FOR EXAMPLE, YT STANDS FOR THE YELLOW TURTLENECK DESIGN.

Appendix F

FAVORITE COLOR BY COLORS OF DESIGNS SELECTED IN
EACH TRIAL

TABLE 45

FAVORITE COLOR BY COLOR OF DESIGN OF DESIGN SELECTED IN TRIAL 1

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY	ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
BLUE		6 28.57	4 19.05	4 19.05	6 28.57	1 4.76	21
GREEN		2 13.33	4 26.67	5 33.33	3 20.00	1 6.67	15
PURPLE		2 5.00	3 7.50	21 52.50	11 27.50	3 7.50	40
RED		4 14.81	4 14.81	3 11.11	13 48.15	3 11.11	27
YELLOW		1 4.55	2 9.09	7 31.82	4 18.18	8 36.36	22
TOTAL		15	17	40	37	16	125

TABLE 46

FAVORITE COLOR BY COLOR OF DESIGN OF DESIGN SELECTED IN TRIAL 2

FAVORITE COLOR	COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
BLUE	4 19.05	2 9.52	5 23.81	3 14.29	7 33.33	21
GREEN	1 6.67	4 26.67	5 33.33	1 6.67	4 26.67	15
PURPLE	8 20.00	6 15.00	14 35.00	8 20.00	4 10.00	40
RED	3 11.11	2 7.41	13 48.15	9 33.33	0 0.00	27
YELLOW	3 13.64	3 13.64	4 18.18	4 18.18	8 36.36	22
TOTAL	19	17	41	25	23	125

TABLE 47

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 3

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	4 19.05	6 28.57	4 19.05	5 23.81	2 9.52	21	
GREEN	1 6.67	5 33.33	2 13.33	3 20.00	4 26.67	15	
PURPLE	5 12.50	7 17.50	17 42.50	4 10.00	7 17.50	40	
RED	7 25.93	7 25.93	2 7.41	5 18.52	6 22.22	27	
YELLOW	3 13.64	5 22.73	5 22.73	5 22.73	4 18.18	22	
TOTAL	20	30	30	22	23	125	

TABLE 48

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 4

FAVORITE COLOR	COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
BLUE	3 14.29	4 19.05	3 14.29	5 23.81	6 28.57	21
GREEN	4 26.67	6 40.00	1 6.67	2 13.33	2 13.33	15
PURPLE	9 22.50	9 22.50	7 17.50	6 15.00	9 22.50	40
RED	2 7.41	10 37.04	2 7.41	8 29.63	5 18.52	27
YELLOW	9 40.91	3 13.64	5 22.73	2 9.09	3 13.64	22
TOTAL	27	32	18	23	25	125

TABLE 49

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 5

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY	ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
BLUE		4 19.05	2 9.52	5 23.81	3 14.29	7 33.33	21
GREEN		2 13.33	2 13.33	2 13.33	5 33.33	4 26.67	15
PURPLE		5 12.50	6 15.00	12 30.00	7 17.50	10 25.00	40
RED		6 22.22	1 3.70	5 18.52	7 25.93	8 29.63	27
YELLOW		5 22.73	5 22.73	4 18.18	3 13.64	5 22.73	22
TOTAL		22	16	28	25	34	125

Appendix G

FAVORITE COLOR BY COLORS OF DESIGNS SELECTED IN
TRIALS BY SEX

TABLE 50

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 1 BY SEX
SEX=FEMALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	1 16.67	1 16.67	2 33.33	1 16.67	1 16.67	6	
GREEN	2 25.00	1 12.50	3 37.50	1 12.50	1 12.50	8	
PURPLE	1 5.00	1 5.00	13 65.00	4 20.00	1 5.00	20	
RED	1 10.00	0 0.00	1 10.00	6 60.00	2 20.00	10	
YELLOW	0 0.00	1 14.29	2 28.57	1 14.29	3 42.86	7	
TOTAL	5	4	21	13	8	51	

TABLE 51

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 1 BY SEX
SEX=MALE

FAVORITE COLOR	COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
BLUE	5 33.33	3 20.00	2 13.33	5 33.33	0 0.00	15
GREEN	0 0.00	3 42.86	2 28.57	2 28.57	0 0.00	7
PURPLE	1 5.00	2 10.00	8 40.00	7 35.00	2 10.00	20
RED	3 17.65	4 23.53	2 11.76	7 41.18	1 5.88	17
YELLOW	1 6.67	1 6.67	5 33.33	3 20.00	5 33.33	15
TOTAL	10	13	19	24	8	74

TABLE 52

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 2 BY SEX
SEX=FEMALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	0 0.00	1 16.67	1 16.67	0 0.00	4 66.67	6	
GREEN	1 12.50	2 25.00	3 37.50	1 12.50	1 12.50	8	
PURPLE	3 15.00	2 10.00	9 45.00	5 25.00	1 5.00	20	
RED	1 10.00	1 10.00	5 50.00	3 30.00	0 0.00	10	
YELLOW	1 14.29	0 0.00	2 28.57	1 14.29	3 42.86	7	
TOTAL	6	6	20	10	9	51	

TABLE 53

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 2 BY SEX
SEX=MALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	4 26.67	1 6.67	4 26.67	3 20.00	3 20.00	15	
GREEN	0 0.00	2 28.57	2 28.57	0 0.00	3 42.86	7	
PURPLE	5 25.00	4 20.00	5 25.00	3 15.00	3 15.00	20	
RED	2 11.76	1 5.88	8 47.06	6 35.29	0 0.00	17	
YELLOW	2 13.33	3 20.00	2 13.33	3 20.00	5 33.33	15	
TOTAL	13	11	21	15	14	74	

TABLE 54

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 3 BY SEX
SEX=FEMALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	1 16.67	0 0.00	0 0.00	4 66.67	1 16.67	6	
GREEN	0 0.00	3 37.50	1 12.50	1 12.50	3 37.50	8	
PURPLE	2 10.00	6 30.00	5 25.00	2 10.00	5 25.00	20	
RED	3 30.00	1 10.00	1 10.00	1 10.00	4 40.00	10	
YELLOW	2 28.57	2 28.57	1 14.29	1 14.29	1 14.29	7	
TOTAL	8	12	8	9	14	51	

TABLE 55

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 3 BY SEX
SEX=MALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY	ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL
BLUE		3 20.00	6 40.00	4 26.67	1 6.67	1 6.67	15
GREEN		1 14.29	2 28.57	1 14.29	2 28.57	1 14.29	7
PURPLE		3 15.00	1 5.00	12 60.00	2 10.00	2 10.00	20
RED		4 23.53	6 35.29	1 5.88	4 23.53	2 11.76	17
YELLOW		1 6.67	3 20.00	4 26.67	4 26.67	3 20.00	15
TOTAL		12	18	22	13	9	74

TABLE 56

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 4 BY SEX
SEX=FEMALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	1 16.67	3 50.00	0 0.00	1 16.67	1 16.67	6	
GREEN	2 25.00	2 25.00	1 12.50	2 25.00	1 12.50	8	
PURPLE	3 15.00	5 25.00	2 10.00	4 20.00	6 30.00	20	
RED	2 20.00	3 30.00	0 0.00	4 40.00	1 10.00	10	
YELLOW	3 42.86	1 14.29	1 14.29	0 0.00	2 28.57	7	
TOTAL	11	14	4	11	11	51	

TABLE 57

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 4 BY SEX
SEX=MALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	2 13.33	1 6.67	3 20.00	4 26.67	5 33.33	15	
GREEN	2 28.57	4 57.14	0 0.00	0 0.00	1 14.29	7	
PURPLE	6 30.00	4 20.00	5 25.00	2 10.00	3 15.00	20	
RED	0 0.00	7 41.18	2 11.76	4 23.53	4 23.53	17	
YELLOW	6 40.00	2 13.33	4 26.67	2 13.33	1 6.67	15	
TOTAL	16	18	14	12	14	74	

TABLE 58

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 5 BY SEX
SEX=FEMALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	1 16.67	0 0.00	2 33.33	0 0.00	3 50.00	6	
GREEN	1 12.50	1 12.50	2 25.00	2 25.00	2 25.00	8	
PURPLE	3 15.00	3 15.00	7 35.00	4 20.00	3 15.00	20	
RED	2 20.00	0 0.00	1 10.00	4 40.00	3 30.00	10	
YELLOW	2 28.57	2 28.57	1 14.29	0 0.00	2 28.57	7	
TOTAL	9	6	13	10	13	51	

TABLE 59

FAVORITE COLOR BY COLOR OF DESIGN SELECTED IN TRIAL 5 BY SEX
SEX=MALE

FAVORITE COLOR		COLOR SELECTED					
FREQUENCY ROW PCT	BLUE	GREEN	PURPLE	RED	YELLOW	TOTAL	
BLUE	3 20.00	2 13.33	3 20.00	3 20.00	4 26.67	15	
GREEN	1 14.29	1 14.29	0 0.00	3 42.86	2 28.57	7	
PURPLE	2 10.00	3 15.00	5 25.00	3 15.00	7 35.00	20	
RED	4 23.53	1 5.88	4 23.53	3 17.65	5 29.41	17	
YELLOW	3 20.00	3 20.00	3 20.00	3 20.00	3 20.00	15	
TOTAL	13	10	15	15	21	74	

Appendix H

FAVORITE STYLE BY STYLES OF DESIGNS SELECTED IN
EACH TRIAL

TABLE 60

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 1

FAVORITE STYLE		STYLE SELECTED				
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	5 23.81	2 9.52	4 19.05	7 33.33	3 14.29	21
POLO	2 11.11	4 22.22	4 22.22	7 38.89	1 5.56	18
STAND-UP	3 9.09	12 36.36	8 24.24	6 18.18	4 12.12	33
TURTLENECK	0 0.00	3 13.04	7 30.43	10 43.48	3 13.04	23
V-NECK	5 16.67	2 6.67	8 26.67	6 20.00	9 30.00	30
TOTAL	15	23	31	36	20	125

TABLE 61

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 2

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	5 23.81	4 19.05	5 23.81	6 28.57	1 4.76	21
POLO	5 27.78	4 22.22	5 27.78	2 11.11	2 11.11	18
STAND-UP	8 24.24	5 15.15	5 15.15	10 30.30	5 15.15	33
TURTLENECK	4 17.39	5 21.74	4 17.39	4 17.39	6 26.09	23
V-NECK	3 10.00	9 30.00	9 30.00	3 10.00	6 20.00	30
TOTAL	25	27	28	25	20	125

TABLE 62

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 3

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	6 28.57	7 33.33	2 9.52	3 14.29	3 14.29	21
POLO	5 27.78	4 22.22	3 16.67	2 11.11	4 22.22	18
STAND-UP	10 30.30	7 21.21	7 21.21	4 12.12	5 15.15	33
TURTLENECK	8 34.78	2 8.70	5 21.74	3 13.04	5 21.74	23
V-NECK	8 26.67	3 10.00	11 36.67	4 13.33	4 13.33	30
TOTAL	37	23	28	16	21	125

TABLE 63

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 4

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	5 23.81	2 9.52	5 23.81	2 9.52	7 33.33	21
POLO	2 11.11	4 22.22	6 33.33	4 22.22	2 11.11	18
STAND-UP	10 30.30	8 24.24	3 9.09	9 27.27	3 9.09	33
TURTLENECK	2 8.70	4 17.39	7 30.43	4 17.39	6 26.09	23
V-NECK	6 20.00	6 20.00	8 26.67	6 20.00	4 13.33	30
TOTAL	25	24	29	25	22	125

TABLE 64

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 5

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	7 33.33	2 9.52	3 14.29	5 23.81	4 19.05	21
POLO	3 16.67	3 16.67	5 27.78	1 5.56	6 33.33	18
STAND-UP	5 15.15	7 21.21	9 27.27	3 9.09	9 27.27	33
TURTLENECK	4 17.39	5 21.74	6 26.09	6 26.09	2 8.70	23
V-NECK	6 20.00	6 20.00	4 13.33	7 23.33	7 23.33	30
TOTAL	25	23	27	22	28	125

Appendix I

FAVORITE STYLE BY STYLES OF DESIGNS SELECTED IN
TRIALS BY SEX

TABLE 65

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 1 BY SEX
SEX=FEMALE

FAVORITE STYLE		STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL	
CREW	3 30.00	1 10.00	1 10.00	4 40.00	1 10.00	10	
POLO	1 14.29	1 14.29	2 28.57	2 28.57	1 14.29	7	
STAND-UP	2 13.33	3 20.00	7 46.67	2 13.33	1 6.67	15	
TURTLENECK	0 0.00	2 25.00	1 12.50	4 50.00	1 12.50	8	
V-NECK	2 18.18	2 18.18	4 36.36	1 9.09	2 18.18	11	
TOTAL	8	9	15	13	6	51	

TABLE 66

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 1 BY SEX
SEX=MALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	2 18.18	1 9.09	3 27.27	3 27.27	2 18.18	11
POLO	1 9.09	3 27.27	2 18.18	5 45.45	0 0.00	11
STAND-UP	1 5.56	9 50.00	1 5.56	4 22.22	3 16.67	18
TURTLENECK	0 0.00	1 6.67	6 40.00	6 40.00	2 13.33	15
V-NECK	3 15.79	0 0.00	4 21.05	5 26.32	7 36.84	19
TOTAL	7	14	16	23	14	74

TABLE 67

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 2 BY SEX
SEX=FEMALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	2 20.00	2 20.00	2 20.00	4 40.00	0 0.00	10
POLO	2 28.57	1 14.29	1 14.29	1 14.29	2 28.57	7
STAND-UP	6 40.00	2 13.33	2 13.33	3 20.00	2 13.33	15
TURTLENECK	2 25.00	1 12.50	2 25.00	1 12.50	2 25.00	8
V-NECK	1 9.09	4 36.36	3 27.27	1 9.09	2 18.18	11
TOTAL	13	10	10	10	8	51

TABLE 68

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 2 BY SEX
SEX=MALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	3 27.27	2 18.18	3 27.27	2 18.18	1 9.09	11
POLO	3 27.27	3 27.27	4 36.36	1 9.09	0 0.00	11
STAND-UP	2 11.11	3 16.67	3 16.67	7 38.89	3 16.67	18
TURTLENECK	2 13.33	4 26.67	2 13.33	3 20.00	4 26.67	15
V-NECK	2 10.53	5 26.32	6 31.58	2 10.53	4 21.05	19
TOTAL	12	17	18	15	12	74

TABLE 69

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 3 BY SEX
SEX=FEMALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	2 20.00	3 30.00	2 20.00	3 30.00	0 0.00	10
POLO	0 0.00	3 42.86	1 14.29	2 28.57	1 14.29	7
STAND-UP	4 26.67	4 26.67	2 13.33	0 0.00	5 33.33	15
TURTLENECK	4 50.00	0 0.00	0 0.00	2 25.00	2 25.00	8
V-NECK	0 0.00	2 18.18	4 36.36	2 18.18	3 27.27	11
TOTAL	10	12	9	9	11	51

TABLE 70

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 3 BY SEX
SEX=MALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	4 36.36	4 36.36	0 0.00	0 0.00	3 27.27	11
POLO	5 45.45	1 9.09	2 18.18	0 0.00	3 27.27	11
STAND-UP	6 33.33	3 16.67	5 27.78	4 22.22	0 0.00	18
TURTLENECK	4 26.67	2 13.33	5 33.33	1 6.67	3 20.00	15
V-NECK	8 42.11	1 5.26	7 36.84	2 10.53	1 5.26	19
TOTAL	27	11	19	7	10	74

TABLE 71

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 4 BY SEX
SEX=FEMALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	3 30.00	0 0.00	3 30.00	1 10.00	3 30.00	10
POLO	0 0.00	0 0.00	4 57.14	2 28.57	1 14.29	7
STAND-UP	5 33.33	1 6.67	3 20.00	5 33.33	1 6.67	15
TURTLENECK	1 12.50	2 25.00	4 50.00	1 12.50	0 0.00	8
V-NECK	0 0.00	1 9.09	4 36.36	4 36.36	2 18.18	11
TOTAL	9	4	18	13	7	51

TABLE 72

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 4 BY SEX
SEX=MALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	2 18.18	2 18.18	2 18.18	1 9.09	4 36.36	11
POLO	2 18.18	4 36.36	2 18.18	2 18.18	1 9.09	11
STAND-UP	5 27.78	7 38.89	0 0.00	4 22.22	2 11.11	18
TURTLENECK	1 6.67	2 13.33	3 20.00	3 20.00	6 40.00	15
V-NECK	6 31.58	5 26.32	4 21.05	2 10.53	2 10.53	19
TOTAL	16	20	11	12	15	74

TABLE 73

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 5 BY SEX
SEX=FEMALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	3 30.00	1 10.00	1 10.00	3 30.00	2 20.00	10
POLO	1 14.29	1 14.29	1 14.29	0 0.00	4 57.14	7
STAND-UP	2 13.33	4 26.67	2 13.33	2 13.33	5 33.33	15
TURTLENECK	2 25.00	2 25.00	1 12.50	3 37.50	0 0.00	8
V-NECK	2 18.18	2 18.18	3 27.27	3 27.27	1 9.09	11
TOTAL	10	10	8	11	12	51

TABLE 74

FAVORITE STYLE BY STYLE OF DESIGN SELECTED IN TRIAL 5 BY SEX
SEX=MALE

FAVORITE STYLE	STYLE SELECTED					
FREQUENCY ROW PCT	CREW	POLO	STAND-UP	TURTLE	V-NECK	TOTAL
CREW	4 36.36	1 9.09	2 18.18	2 18.18	2 18.18	11
POLO	2 18.18	2 18.18	4 36.36	1 9.09	2 18.18	11
STAND-UP	3 16.67	3 16.67	7 38.89	1 5.56	4 22.22	18
TURTLENECK	2 13.33	3 20.00	5 33.33	3 20.00	2 13.33	15
V-NECK	4 21.05	4 21.05	1 5.26	4 21.05	6 31.58	19
TOTAL	15	13	19	11	16	74