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To the Graduate Council:

I am submitting herewith a thesis written by Martha Morrison LaLance entitled "An Exploratory Study of the Influence of Flavor and Color on the Dessert Preferences of Nursery School Children." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Child Development.

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AN EXPLORATORY STUDY OF THE INFLUENCE OF FLAVOR AND COLOR ON THE DESSERT PREFERENCES OF NURSERY SCHOOL CHILDREN

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Martha Morrison LaLance

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M. M. L.

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TABLE OF CONTENTS

CHAPTER		PAGE
I.	THE PROBLEM	1
	Introduction	1
	Statement of the Problem	3
	Hypotheses	4
	Limitations of the Study	4
	Assumptions	5
	Importance of the Study	5
II.	REVIEW OF LITERATURE	7
	Food Preference	8
	Color Preference	22
III.	METHODOLOGY	28
	Subjects	28
	Procedure	29
	Sources of Data	33
	Analysis	34
IV.	RESULTS	35
	Analysis of the Flavor Data	35
	Analysis of the Color Data	36
	Analysis of Group and Sex Differences	38
	Tabulations	38
V.	DISCUSSION	45
VI.	SUMMARY AND CONCLUSIONS	50

CHAPTER PAGE

BIBLIOGRAPHY 52

APPENDIX 56

LIST OF TABLES

TABLE		PAGE
I.	Characteristics of the Subjects	30
II.	Consistency of Flavor Preference	37
III.	Consistency of Color Preference	39
IV.	Comparison of the Mother's Prediction of the Child's Choice at Home and His Choice in the Nursery School	41
V.	Tabulation of the Mother's Prediction of the Father's Choice and Her Own Choice	42
VI.	Tabulation of Previous Experiences With Pudding at Home	43
VII.	Tabulation of Favorite Flavors Excluding Vanilla, Lemon, and Strawberry	44

CHAPTER I

THE PROBLEM

I. INTRODUCTION

No aspect of the child's life seems to concern the parent, especially the mother, more persistently than that of feeding. The feeding problem appears with unfailing frequency in the home and at nursery school. A child's growth rate slows down after infancy and most children tend to eat less. The midday meal in a nursery school provides a favorable environment for a study of the eating behavior of young children. Often children act differently away from home than when at home; however the school environment after the first few weeks, becomes a fairly stable situation for the individual child.

Children vary from day to day in their attitudes toward food. Food likes appear one day only to disappear the next day. Uncontrollable circumstances in the playroom at nursery school or at home will influence the child's behavior during lunch time.

Eating behavior is an important aspect of preschool education because, in the total development of a human being, that which comes first influences all later development. Eating behavior is particularly important because it looms so large as a factor in the lives of preschool children (11, p. 399).

Eating behavior is significant to an individual because it is his behavior. In a child's own experiences, accepting or rejecting food, overstuffing or refusing food gives food a special role. In as much as food selection and ingestion is a dynamic behaviorial relation between organism and environment, the essential facts from which any analysis of appetite must start are physical in nature. For example, human beings eat rapidly or slowly; accept one food and reject another; prefer sweet taste rather than sour; take the accustomed food or perhaps turn to the unfamiliar one; eat more rapidly in the presence of competitors than when alone; or are inhibited by some characteristic of the food and may stop eating when a certain quantity has been ingested. These and similar processes are aspects of eating behavior. The mechanisms of taste, smell, and sight exercise the first control in the selection and rejection of foods.

The preschool child has learned to like a wide variety of foods by the time he reaches nursery school age. He has learned to regard eating as a satisfactory or an unsatisfactory experience. Food eaten in pleasant surroundings becomes a symbol of those surroundings.

A child's feelings about food may also contribute to the quality of his relationship with his parents and other adults in eating situations. Food attitudes may be an overt expression of covert feelings about self or about interpersonal relationships. Food and eating behavior reflects tradition and culture in a given society (4, p. 704).

A mother's influence on a child's food habits during his infancy is very important. By the time a child reaches the preschool stage his behavior patterns in regard to eating are already set. Tastes for new foods can be developed, but tastes for flavors are formed slowly. Adults who set a good example do much to aid the development of good eating behavior in the young child.

Teachers are relatively important in helping a child develop positive attitudes toward food. Their attitudes support the efforts of parents. Young children, in their striving for recognition and status in school, tend to follow the guidance of their teachers (31, p. 806).

Little is known about the way appetite and food preferences of individuals develop. Attitudes of both children and adults toward food influence their food selection and intake. Thus, an understanding of the dynamics of children's food preferences and prejudices is of value to those who plan and supervise the feeding of children.

II. STATEMENT OF THE PROBLEM

The purpose of this study was threefold: first, to gain information concerning the influence of color and flavor in the dessert preferences of preschool children in a nursery school lunch situation; second, to compare the factors of age and sex with the color and flavor preferences of preschool children; and third, to compare the differences or similarities in the mother's

opinion of the preferences of her child as expressed in the home with the flavor preferences exhibited by the child in the nursery school lunch situation.

III. HYPOTHESES

It was hypothesized that (1) the subjects would not reveal consistent preferences for a flavor or a color in their choice of desserts at nursery school; (2) there would not be sex and age differences in flavor or color preference of preschool children for desserts; and (3) there would be no apparent relationship between the subjects' flavor preferences as observed in the test situation and the flavor preferences of the child as checked by the mothers on the questionnaires.

IV. LIMITATIONS OF THE STUDY

This study was limited to a selected group of nursery school children. Most of the subjects were from the upper-middle socio-economic class and the remaining ones from the middle class. This information is based on nursery school records.

A mother is most likely to be familiar with the flavor preferences of her husband and her children. The mother was asked to record her flavor preference as well as the flavor preference of her husband and her nursery school child or children. The accuracy of the mothers' perceptions could be questioned and would be a limitation of this study.

Another limitation of this study was that children's attitudes probably fluctuate from day to day and from meal to meal. It was impossible to control all of the possible influencing variables; for example, the amount of previous experience the children had had with the flavors of pudding, the amount of breakfast the child had eaten, the possible influences of the group, impending illnesses, the differences in preparation of the same food at home and at school, and upsetting circumstances during the early morning such as an injury. Records were not kept of the amount of dessert eaten by each subject only of the choice made by the subject.

V. ASSUMPTIONS

It was assumed that those subjects expressing a consistent choice of a specific flavor would exhibit a definite preference for that specific flavor. It was also assumed that those subjects expressing a consistent choice of a specific color would exhibit a preference for that specific color.

VI. IMPORTANCE OF THE STUDY

Parents as well as teachers who have an opportunity to plan and supervise the feeding of small children have many problems in connection with the eating behavior of these children. In reviewing the literature it was evident that little was known about the factors which influence a young child's choice of food. This

study will contribute some knowledge of the influence of flavor and color in childrens' dessert preferences as well as differences in age and sex with respect to the preferences of preschool children in relation to choices of a specific type of dessert. Increased knowledge in the area of children's flavor and color preferences can be of value in evaluating the present policies during mealtime in nursery schools and to those who are interested in promoting sound food habits and nutrition education.

CHAPTER II

REVIEW OF LITERATURE

During the preschool years certain patterns of behavior are formulated and a foundation of personality is laid. Eating is an important aspect of preschool behavior because it consumes a large proportion of the time, attention, and interest of young children. Feeding problems appear with unfailing frequency in the home and in the nursery school. Children vary from day to day in their behavior in regard to food. Idiosyncrasies appear one day only to disappear the next day.

Uncontrollable circumstances in the playroom or at home influence the day's behavior in the dining room for children as well as adults. Variables of this nature are almost impossible to control in any study concerning eating behavior of young children. Little effort is made on the part of the experimenters to control these types of influences on the eating behavior of children.

Very little research has been done concerning the eating behavior of preschool children particularly with emphasis on food color and flavor preference. Research of those studies available in the whole area of eating behavior and food preference has been based on observational records of children's behavior in the home or in a nursery school situation. Past research has revealed that

few of the studies have controlled reliability and validity, very little effort was made to control for contamination. Studies dealing with children in a natural setting make it very difficult to formulate and carry out investigations which control or hold constant many important variables.

Most of the research concerning children's color choices has been centered around the child's actual use of the colors as well as their verbal expressions of color preference. In most cases the findings in a study of children's color preferences have been based on observations of the actual use of color in a nursery school situation.

Several factors must be considered in connection with any research on children in the nursery school. The children attending nursery schools from which research has been reported were from the middle and upper-middle socio-economic class. In many of the studies the sample was not a random one. In view of the limitations of the available research in this area, the findings must be examined carefully to determine their value.

I. FOOD PREFERENCE

Laird and Breen (19) reported that research prior to 1939 has revealed that in early childhood taste buds are present on the inside of the cheeks and in the throat in addition to the tongue. During adolescence these disappear and chiefly those on the tongue remain. These basic changes explain that alterations

in food enjoyment take place as the individual passes from childhood into maturity. Foods which the child did not enjoy become palatable in maturity because his rich supply of taste buds very possibly brought out taste characteristics which the adult mouth does not sense.

Sex differences in the number and funcioning of taste buds have not been well established. Youthful disappearance of taste buds is completed by the age of twelve years, according to the reports of Laird and Breen.

Laird and Breen studied the preferences for sweets at different age levels by having subjects taste pineapple juice in five degrees of sweetness. They found that preferences for sweets declined with age. Older people preferred a sour taste. Women at all ages, in comparison with men, had more preferences for the tart taste and less for the sweet taste.

Renner (29) reported that at low and at high temperatures no sensations of sweetness or bitterness can be experienced at all. This fact has been ascertained concerning temperatures below freezing point and above 122° F. Between these limits of perception the curve of sensitiveness differs with each sweet or bitter substance. The experiments can be carried out only by exposing a single bud of taste on the surface of the exposed tongue to the fluid of the solution to be tasted. It has been found advisable in experiments to limit the temperatures from 63° F. to 108° F. Below and above this level another sense, the

sense of pain, arises and might interfere with the observations.

Renner (29) studied the effects of temperature on sweet taste, using an artificial sweetner, dulein, in a liquid solution heated to different temperatures. It was found that with rising temperatures between the fixed limits a quick rise in perceptibility occurred. When the temperature was raised from 63° F. to about 95° F., the sweetness of the same solution rose five and a half times. When the temperature was raised further, the sensitiveness of the buds of taste decreased rapidly and finally disappeared, at about 122° F.

That organisms prefer one thing to another is a common observation. We have little knowledge of the psychological dynamics behind preferential choices. Preference is shown by the quality of choice and by the consistency of selection.

Young (39) in his observations of rats chose to observe the quality of the choice rather than the quantity of food eaten. He found that rats reveal a consistent preference throughout a long series of trials, or they show no preference at all. Failure to manifest a preference is just as significant as preference in an organism, for it indicates approximate equality of demand for the foods offered.

Festinger (12) studied the effect of previous experience on the preference of rats for a given food. He found that if an animal is given more of one food than another, an animal will eventually come to prefer that food on which it has experienced

relative deprivation. He also studied effect of the amount of food on the choice behavior of rats. A group of rats was run in a single discrimination point apparatus. The choice involved was between a ten-second feeding on one food and a one-minute feeding on a different food. The appetites for the two foods used appeared to be equal at the start of the experiment. After 24 days, the animals ran only slightly more than 50 per cent of the time to the greater amount of food. A control group showed that if only one food was involved, the animals would learn to run to the greater amount of food nearly 100 per cent of the time.

Young (34) in explaining the preference of rats for foods stated that the primary basis of the rat's discrimination among foodstuffs is the sense of taste. On a preference test a rat invariably tasted both foods before a preference appeared for one food or the other. The preference often developed after a small number of trials, but it never appeared without a preliminary sampling which provided sensory experience of both foods.

Occasionally the rat may be seen to sniff first one test food and then the other, before selecting either one. Smelling is secondary to tasting for rats in making a preferential discrimination between foods.

In considering an individual's reaction to the food he eats, the factor of culture must be taken into account. What will whet the appetite, what will bring a feeling of satiety, what is tasty depends on the particular culture of the individual in question.

Davis (8) has enthusiastically endorsed the self-selection method of feeding infants and children, but at the same time she has warned against exaggerated claims, noting that there are limits to trustworthiness of appetite as a guide in eating. For instance, appetite does not protect us against the ingestion of unfamiliar poisonous plants and animals. The Davis study made it clear that appetite is not an infallible guide in the selection of foodstuffs. The bulk of evidence indicated that when an infant is offered a variety of foods from which to choose, he can to an amazingly high degree select a diet which is balanced, adequate in calories, and one which leads to normal growth and health.

Little is known about the way in which appetite or food preferences of individuals develop. The attitudes toward food of both children and adults influence to a large extent their food intake. Children have preferences for certain foods, but those preferences in many cases are distinctly individual.

Dudley, Sunderlin, and Moore (9) studied the vegetable preferences of 53 nursery school children. The home backgrounds of these children were different in regard to eating experiences as indicated by the questionnaires completed by the mothers. The previous experiences with food undoubtedly influenced the behavior of the children during this study. Each of four vegetables was prepared in four different ways and was served four different times. Green beans, asparagus, carrots and rutabagas were used in this study. Each child was offered a choice each day and a record was

kept of the amounts of each vegetable that was eaten. The authors found that children had preferences for raw preparations of carrots and rutabagas. However, there was great variation between individuals in the choices they made and in the consistency of their choices.

The study of Dudley, Sunderlin, and Moore has shown that although children seem to have food preferences there is great variation between individuals. Rats have shown preferences in their behavior in regard to food unlike the behavior found in children. Rats reveal consistent preferences, or they show no preference at all.

There is little doubt among those dealing with small children that the pleasing appearance of food itself exerts a tremendous influence on their preference of foods. The presence of color and the attractiveness of service seem important.

Sweeny (35) observed nursery school children over a 400 day period. During a specific ninety day period of this study the children mentioned color in 95 per cent of their references to the food served. Sweeny also reported that there were age differences in the kinds of foods preferred by the children. Children one and one-half to three years of age preferred different food combinations from children three to five years old. These differences were not specifically reported.

McCarthy (23) investigated the food preferences and aversions of a group of young children to determine their relationships to the food aversions among members of their families. The subjects were forty-eight children enrolled in the nursery school at University of Georgia. Some of the subjects had previously attended the nursery school or were siblings of children who were currently enrolled in the nursery school. Fourteen were considered eating problems by their mothers or the nursery school staff, and thirty-four were judged to have eating problems.

The data for this study were obtained through interviews with the mothers. The mothers gave the children's reaction to seventy-two foods. Information concerning the reactions to these foods was obtained for other members of the family.

Correlations with age indicate a growing indifference to food and a tendency away from strong likes and strong aversions with increase in age. Food aversions on the part of the family members are associated with about 35 per cent of children's food aversions. There was a much higher percentage of identical food aversions among siblings than between children and parents. A dislike for a certain food by some member of a family was a rather frequent reason for its not being offered to the child.

In the feeding problem group, 47 per cent of foods disliked or refused by some member of the family were also disliked or refused by the subject. Evidence from this study indicated that children who had been served chocolate milk were less satisfied

with plain milk.

An investigation of the father's influence on young children's food preferences was made by Bryan and Lowenberg (5). They had as a purpose to appraise the relationship between the food preferences of the father and those of his preschool children. Thirty-six foods were selected as ones with which the sixty-one preschool children and their fathers would be familiar. The fathers indicated on a check list whether they liked, accepted, or refused the listed foods. The mothers answered for the child. A mother's ability to indicate the food acceptance or refusal of the child must not be considered to be completely reliable.

There seemed to be a relationship between the child's preference for vegetables and the father's preference for vegetables; however, this association was not statistically significant. A high like rating was found between father and child for milk and milk products.

Blatz (2) studied the eating habits of young children who attended St. George's School. Daily observations were made on children from two to six years old. Six observers kept a record of the food eaten and the eating habits of the children. The data showed that there was no significant difference in the amount of food eaten and the eating habits of the children in regard to the different days of the week. When the performance on the total scale by the different age groups was compared Blatz found an increasing difference of one point between each of the groups.

Two-year-olds had an average score of nearly 3.0, three-year-olds about 4.0, and four-year-olds about 5.0 points. Although group differences with age were found, the total average score reflected wide individual differences.

Mirone, Torrance and Roughton (26) studied the food intake of children at noon who attended the University of Georgia Nursery School. Records were made for fifteen days over a period of five weeks on the amounts of food served and consumed of twenty-two subjects, twelve girls and nine boys. With exception of Irish and sweet potatoes, vegetables were consumed in the least amounts. Desserts were consumed in the largest amounts. There was no statistically significant sex difference in the amount of vanilla custard consumed by boys and girls. In agreement with Blatz (2) it was found that sex, day of the week, and week order had no significant effect on the quantity of food ingested during the noon meal.

A study of factors affecting the amount and kind of food eaten by nursery school children was conducted by Dunshee (10). The subjects were thirty-seven children enrolled in the nursery school at the University of Minnesota. Forty-seven students made a total of 3,005 daily records of the food eaten and the routine habits of the children at lunch hour between January and July in 1927. The amount of food eaten was expressed in calories. The foods were divided into groups, milk, protein foods, vegetables, carbohydrates and desserts. It was found that there was no sex

difference in the amount of food eaten or the type of food eaten by these children. This finding agrees with the findings of Blatz (2), Mirone, Torrance, and Roughton (26). In agreement with Blatz a significant age difference in food intake and habits was found only between the youngest group of children and the oldest group of children. Dunshee also noted that children who tend to stay at the table the longest time eat less food. In agreement with Bryan and Lowenberg (5), Dunshee found that the refusals of milk were the least frequent.

The reliability of the records could be questioned as they were made by a large number (forty-seven) of students. No check was made on the reliability of the recordings.

A similar study was conducted by Lamb and Ling (20). Five boys and three girls were randomly selected from nursery school applications. The eight subjects were healthy, middle class children ranging in age from two years, three months, to three years seven months. Daily records of food consumed and of reactions to these foods were kept for one week at three month intervals by the mothers and teachers at the nursery school. Very pleasant, neutral, unpleasant, and very unpleasant were the categories used for reaction to the food.

Vegetables were the least preferred of all the food groups. Lamb and Ling (20) were in agreement with McCarthy's (23) finding that flavored milk was unanimously preferred. In the major food

division of custards, puddings, and gelatin desserts, the most popular dessert was puddings. The obvious limitation of this study was the small number of subjects.

Breckenridge (4) studied the food attitudes of five to twelve year old children at the Merrill-Palmer Summer Camp. The subjects were fifty-one children from upper-middle class homes. The mean age of these children was 8.3 years. Each subject replied to a questionnaire of twenty-five items. The items were foods commonly included in the diets of these children. The answers were obtained from counselors at the beginning of camp and five weeks later the children were asked whether they liked, were indifferent, or disliked the food items. The parents filled out the same questionnaire at home while the children were in camp. Breckenridge agreed with Lamb and Ling (20) in finding that vegetables were the least liked of the food items. No sex differences were found in food likes and dislikes, which agrees with studies done by Blatz (2), Dunshee (10), and Mirone (26). Ice cream and milk were high in popularity, which agrees with the findings of McCarthy (23) and Lamb and Ling (20). No specific group change in food preference occurred during the five week period; however, individual changes occurred. Scores for food dislikes between parents and children were similar.

A study of the food choices of Nebraska children was conducted by Leverton and Coggs (22). A check list of 45 different

foods was completed by 1,882 boys and girls with an average age of thirteen years and six months. The girls in this study stated that they were more willing to eat a variety of foods than were the boys. The children from towns had tasted more of the listed foods. Blatz (2), Dunshee (10), and Mirone (26) found no significant sex differences in food intake and food habits. Differences on this point by Leverton and Coggs may be due to differences in food items included on the check lists, and great differences in the age group studied.

Wallen (28) studied sex differences in food aversions. The subjects were 308 female college students and 237 male college students between eighteen and twenty-five years of age. Each subject completed a check list of 143 food items. Comparisons were made between the sexes. Wallen found considerable uniformity between the sexes in the extent to which various foods are disliked. For a small proportion of the items, differences existed in the extent to which males and females reported aversions. In partial agreement with Leverton and Coggs (22), Wallen found that in most cases where the sex differences occurred, a larger proportion of females than of males disliked the food. Wallen believed that the differences could be accounted for by assuming social pressures exist which permit females to retain habits of rejection.

Hall and Hall (14) also did a similar study which included 693 university students. The subjects were asked to answer a check list which included 150 food items. Hall and Hall found

sex differences with food aversions and sex differences with familiarity. Women had more food aversions than men. Flavor was the most often given reason for disliking a food. Foods that ranked high in being disliked also ranked high in being unfamiliar to the subjects. The findings of Hall and Hall in sex differences in food aversion and habits agree with the similar findings of Wallen (38).

A summary of the studies including sex differences in food choices and refusals shows that with an increase in age more sex differences become apparent. Preschool children do not seem to show statistically significant sex differences in food choices and food refusals.

At Fels Institute, Baldwin (1) studied the feeding behavior of a group of seventy-two normal children from Ohio. Seventy-two mothers of preschool children were interviewed by a nutritionist for information about the feeding behavior of children. The topics included by the interviewer included appetite, finicalness, and behavior at the table. The interviewer rated each of the three variables.

From the analysis of the data obtained, Baldwin concluded that children tended to be either good eaters or poor eaters with very few inbetweens. The only pair of variables which were clearly related were appetite and table behavior. The children with poor appetites tended to be less well developed physically according to measures of height and weight, but not significantly so.

Good appetite and good table behavior tended to appear in homes which were restrictive and coercive in their discipline but where the child still received approval. A lack of finicalness appeared to be related to patterns of parental approval, interest, and protectiveness.

Baldwin (1) had a moderately large sample of subjects for this study. No check was made on the reliability of the ratings. Not checking for reliability is a weakness of many of the studies conducted with eating behavior and children. Many of the ratings for this study were very subjective in nature and could have been contaminated by the rater's opinions.

According to Baltz (2), Dunshee (10), Lamb and Ling (20), and Mirone (26), statistically significant sex differences in food intake, food preferences, and food behavior were not found during the preschool years. Leverton and Coggs (22), Wallen (38), and Hall and Hall (14) found sex differences in food intake and food preferences in preadolescent children and adults. Basic changes in number of taste buds explain alterations in food enjoyment as an individual passes into adulthood. Sex differences in the number and functioning of taste buds have not been established. Laird and Breen (19) found that preferences for sweets decline with age for both sexes. Renner (29) found that it is advisable to limit the temperature of food taste experiments to very moderate degrees of warmth and coolness.

Young (39) in observing the food preferences of rats found that rats reveal a consistent preference for a food for a long period of trials, or they show no preference at all. The primary basis of the rats discrimination among foodstuffs is the sense of taste.

Dudley, Sunderlin, and Moore (9) found that children do have preferences for certain foods; however, their preferences are distinctly individual in many cases and not consistent for a period of many trials. Sweeny (35) in observing nursery school children found that over a particular ninety day period children mentioned color in 95 per cent of their references to the food served. McCarthy (23) found that food aversions on the part of the family members are associated with about 35 per cent of children's food aversions.

II. COLOR PREFERENCE

Staples and Conley (34) observed the use of color in the fingerpaintings of three- and four-year-old children. The subjects were twenty nursery school children and twenty institutionalized children. Red, yellow, green, blue, and black were the available colors for use in the finger painting setup. The paints were put in random positions on the table each day. Observations of the color choice of each child were made, and each painting was rated.

An analysis of the chi-square values of the ratings for each painting indicated that for twenty-seven children the differences in color selection were not statistically significant. It was evident that the paintings were characterized by an interest in all colors rather than a distinct and continued preference for any one color. The investigators found that for four of the children differences seemed to be related to the use of a single color in a particular painting or by a color jag. Seven of the children followed the order in which the colors were placed on the table. Ten of the subjects did show a slight preference for the same color in two paintings. No subject preferred one particular color as his initial choice in all of his paintings. No statistically significant color preferences were evident for either of the two groups of children.

Staples (33) studied the responses of fifty preschool and grade school children to color. Observations of their responses to a two-color preference situation were made.

In no case of a color pair was the difference between the responses of the sexes pronounced. There was a tendency for an earlier drop in interest in yellow on the part of the girls. The girls had a greater percentage of responses for blue at each age level. The interest became stronger in the girls with an increase in age.

Yellow was the least liked color of the preschool children, while blue was the best liked by the grade school children. In

the case of the preschool children, red, green, and blue were preferred in this order, but the percentage differences between these colors were small. The preschool boys rated green a little higher than the girls, while the preschool girls rated yellow lower than the boys. A distinct and continued preference or dislike for any one color was not found in either the preschool children or the grade school children.

Katz and Breed (18) studied the color preferences of kindergarten, elementary, high school, and college students. A group of 2,500 subjects were asked to choose one of six colors which they liked best. White cards on which were pasted red, orange, yellow, green, blue and violet colored papers were presented to the subjects.

In examining 125 kindergarten children Katz and Breed found that these children were unfamiliar with the names of the colors. The kindergarten children were allowed to point to their favorite color. The data were handled by correlating the subjects' color choices with their age and sex.

At every age from five to fifteen years old, blue was most frequently preferred. Forty-seven per cent of the 2,500 subjects found blue the most pleasing. In general, there was a distinct rise in the preference value of green and blue, and a corresponding decline in the values of red and yellow as children advanced in age and grade. This finding agrees with the findings of Staples

(33) in that blue was the best liked color of the grade school boys, red was a favorite at this age level, and yellow was rated lower. No striking differences between the color preferences of the sexes were observed in either of these two studies.

A study of color preference according to age was conducted by Michaels (25). There were 535 male subjects ranging in age from six to fifteen years of age. The purpose was to test boys' ability to perceive colors and to get the preferences for single colors. The subjects from eight to fifteen years of age looked at a color chart and listed their color preferences in first, second, and third order. The younger children individually pointed to the colors that they liked best. Michaels found that children six years of age did not show consistency of color choice. Michaels made a broad statement by saying that children in choosing what they always like chose what their emotional state of mind stimulated them to do at the particular moment. Differences in the preferences for any particular color were small for the whole group. Yellow and red were ranked at the top, while green, violet, blue and orange followed in that order. These findings disagree with the findings of Staples (33) and Katz and Breed (18). Staples had a different age group of subjects. Staples included both male and female subjects; Michaels did not. Also Staples studied the actual use of colors in a painting situation, whereas Michael's subjects verbalized their color preferences. Katz and

Breed had a much larger age range in their sample which included both male and female subjects. Sex and age differences in sampling may have made the difference in the findings of these studies.

Group differences in color choice and rejection were studied by Pasto and Kinisto (27) who had 240 male and female adult subjects. The subjects were tested as to color preference on Rorschach card X and a color chart. The subjects were grouped into the following categories: (1) male and female, (2) normal, (3) psychotics, and (4) mental defectives.

Blue and red were the most popular choices among all of the groups. Gray and brown were the colors most rejected. Normal women shifted their color preferences more than normal men. The psychotics were characterized by a greater range of color choice and rejection. The mental defectives rejected yellow more than the other groups.

Michaels (25), Staples and Conley (34), and Staples (33) agree that preschool children have an interest in all colors and fail to show a distinct preference for any one color. Staples (33), and Katz and Breed (18) found that there was no statistically significant difference between the sexes in color preference. A high preference of preschool children for red and blue was found by Staples (33), and Katz and Breed (18).

The research on eating behavior of preschool children and children's color preferences gave evidence to indicate that age and sex differences in food preferences and color preferences were

not found during the preschool years. The writer hypothesized that there would not be sex and age differences in flavor and color preferences of preschool children for dessert.

Dudley, Sunderlin, and Moore (9) found that children's food preferences are distinctly individual and that these preferences are not consistent over a period of many trials. The writer hypothesized that the subjects for this study would not reveal consistent preferences for flavor or color in their choice of desserts. From the evidence given by McCarthy (24) the writer also hypothesized that there would be no apparent relationship between the subjects' flavor preferences as recorded in the nursery school and the flavor preferences of the mothers and fathers as recorded by the mothers on the questionnaire.

Renner (30) found that it is advisable to control the temperature in food taste experiments. It was for this reason that the puddings for the test situations were served at room temperature.

CHAPTER III

METHODOLOGY

The purpose of this study was threefold: first, to gain knowledge concerning the influence of color and flavor in the dessert preferences of preschool children in a nursery school lunch situation; second, to compare the factors of age and sex of the subjects with the color and flavor preferences of these children and; third, to compare the differences or similarities in the mother's opinion of the preferences of her child expressed in the home with the flavor preferences exhibited by the child in the nursery school lunch situation.

I. SUBJECTS

The subjects of this study were thirty-one preschool children and their mothers and fathers. The children were enrolled in the senior and junior groups during the spring quarter at The University of Tennessee nursery school. None of the subjects was allergic to vanilla, lemon, or strawberry pudding. Only eight of the senior group and ten of the junior group were present for all of the test situations plus the trial test. All of the subjects had completed at least five of the seven tests. The senior group consisted of nine boys and six girls with an age range from four years, four months to six years with a mean age of four years, nine

months on April 1, 1963. Most of the senior group had been enrolled in The University of Tennessee nursery school for their second year. The junior group consisted of seven girls and nine boys with an age range from three years, five months to four years, seven months with a mean age of three years, nine months on April 1, 1963. For most of the junior group, the present school year was their first nursery school attendance. The mean age of the total group was four years, three months. The mean age of the girls was four years, two months. The mean age of the boys was four years, four months.

Most of the parents of the subjects were professional people with college degrees and additional professional training or advanced degrees. See Table I, page 30 for characteristics of the subjects.

II. PROCEDURE

During the winter quarter of 1963 the subjects were served vanilla, lemon, and strawberry pudding as dessert along with the regular noon meal at the nursery school. Each flavor of pudding was served at least two times. The pudding was not served on any specific day. This served to acquaint the subjects with those three flavors of pudding. Instant puddings (Jello brand) were used throughout the trial and testing periods. The pudding was prepared as directed on the package and served at room temperature.

TABLE I

CHARACTERISTICS OF THE SUBJECTS

Item	Junior N16	Senior N15	Total N31
Years of age			
3	10	0	10
4	6	12	18
5	0	2	2
6	0	1	1
Sex			
Male - Boys	9	9	18
Female - Girls	7	6	13
Length of School Attendance			
1 academic quarter	2	0	2
2 academic quarters	10	0	10
3 academic quarters	3	1	4
4 academic quarters	0	1	1
5 academic quarters	0	4	4
6 academic quarters	0	0	0
7 academic quarters	1	8	9
11 academic quarters	0	1	1
Father's occupation			
College professor	3	4	7
Engineer	0	1	1
Architect	0	1	1
Physician	2	2	4
Dentist	0	2	2
Attorney	3	1	4
Deceased	1	0	1
Education, sales, other miscellaneous	7	4	11

The same procedure was followed in the trial test and each of the seven test situations. In each of the first six tests the subject had a choice of one of the two puddings offered after lunch on a particular day of the week. The same two flavors of pudding were offered on the same day of the week. In six test situations the subjects had a chance to taste both flavors or colors of pudding offered before making a selection. In the seventh test situation the subjects were offered all three flavors of pudding. See Appendix for a copy of the instructions to the subjects at the serving table. Each subject went to the serving table in the center of the dining room to select one of the two products of pudding offered. The same person sat at the serving table during the trial test and during each of the testing experiences. After making the choice the subject took his selection back to his own table to eat. Prior to the test period the student teachers were advised not to make reference to the selected pudding of the subject before or after his selection. See Appendix for a copy of the instructions to the student teachers.

There were seven recorded test situations and one recorded trial test over a five-week period. During the trial test the subjects had a choice between lemon and strawberry flavors of pudding. The trial test served to acquaint the subjects with the choice procedure which was new to them.

The basic structure of the test design is reported first. The specific variables of flavor and color in regard to each test

situation are discussed in the following paragraphs.

In the first and third tests the subjects had a choice between vanilla and lemon puddings. These tests were completed on two successive Mondays. The same menu was served on each of the Mondays when vanilla and lemon flavors of pudding were offered. See Appendix for a copy of the Monday menus.

During the second and fourth tests the subjects had a choice between vanilla and strawberry flavors of pudding. These tests were completed on two successive Wednesdays when vanilla and strawberry flavors of pudding were offered. See Appendix for a copy of the Wednesday menus.

Tests five and six included only vanilla pudding, but with food coloring added. Test five was on Monday with the same menu as used in tests one and three. Test six was completed on a Wednesday when the same menu was served as in test two and four.

Test seven was completed on a Monday and included the three flavors of vanilla, lemon, and strawberry pudding. This was the only test in which all three flavors of pudding were offered at the same time. The same lunch menu was used as in test one, three, and five.

During the first and second test periods the variables of both color and flavor entered into the subjects' choice of pudding. The lemon pudding was yellow, the strawberry pudding was pink, and the vanilla pudding was creamy white. In the third and fourth trials

the variable of color was kept constant and only the flavor entered into the selection of the pudding. This was accomplished by adding yellow food coloring to the vanilla pudding in test three and pink food coloring to the vanilla pudding in test four. A panel of three staff members served as judges to control for visible differences in color of the puddings. In test three the color of the vanilla and lemon pudding was identical. In test four the vanilla pudding was the same color as the strawberry pudding.

For tests five and six the variable of flavor was held constant. This was accomplished by adding yellow and pink food coloring to the vanilla pudding. In test five the subjects had a choice between yellow vanilla pudding and creamy white vanilla pudding. In test six the subjects had a choice between pink vanilla pudding and creamy white vanilla pudding.

For test seven the variables of both flavor and color entered into the subjects' choice of pudding. Since all three flavors of pudding there offered at the same time this test served to establish a preference for one or more of the three puddings offered for each subject.

III. SOURCES OF DATA

Data were obtained from two sources. The first source was a questionnaire concerning the flavor preferences of the child, the father, and the mother. The questionnaire was completed by

the mothers. The questionnaire and a letter of explanation were mailed to the mothers of the subjects on March 22, 1963. The mothers were asked to return the questionnaire as soon as possible. See Appendix for a copy of the questionnaire and the accompanying letter.

The second source of data was an observational record of the subjects' preferences in the seven test situations. The records were kept by the experimenter and a member of the staff of the nursery school. See Appendix for a copy of the form for recording data used in the testing experiences.

IV. ANALYSIS

Tabulations were made from the observational records to study the degree of consistency or inconsistency of the color and flavor preferences of the subjects. The subjects were classified in categories and a table was made. The age and sex differences in flavor and color preferences were determined by comparing the junior group with the senior group and the male subjects with the female subjects in the flavor and color preference consistency. Also tabulations were made to compare the mother's predictions of the child's flavor choice with the child's actual choice. Percentages were figured to show the accuracy of the mothers' predictions. Tabulations were made of the mother's, father's, and child's favorite flavor excluding vanilla, lemon, and strawberry flavoring which were used for this experiment.

CHAPTER IV

RESULTS

The purpose of this study was threefold: first, to gain information concerning the influence of color and flavor in the dessert preferences of preschool children in a nursery school lunch situation; second, to compare the factors of age and sex with the color and flavor preferences of preschool children; and third, to compare the differences or similarities in the mother's opinion of the preferences of her child as expressed in the home with the flavor preferences exhibited by the child in a nursery school lunch situation.

I. ANALYSIS OF THE FLAVOR DATA

Tabulations were made for the total group to study the degree of consistency or inconsistency of the color and flavor preferences of the subjects as recorded on the dessert preference records for each of the tests. All of the subjects had completed at least five of the seven tests. The consistency of the flavor preferences was tabulated by comparing the flavor choices in tests one, two, three, four, and seven. The following categories were used: (1) consistently vanilla; (2) consistently strawberry; (3) consistently lemon; (4) consistently all flavors; (5) consistently refusing dessert; and (6) completely inconsistent in flavor preference.

The following criteria were used to classify the subjects in these six categories: (1) subjects selected vanilla flavor in at least four of the five tests; (2) subjects selected strawberry in tests two, four, and seven; (3) subjects selected lemon in test one, three, and seven; (4) subjects selected at the same test each of the flavors offered in that particular test for all five of the tests; (5) subjects refused to select a flavor in all five of the flavor test situations; (6) subjects failed to reveal a consistent flavor preference for all five of the flavor tests. Subjects classified in categories one, two, and three were considered to have expressed a specific flavor preference. Subjects classified in categories four and six were considered not to have expressed a definite flavor preference. Subjects listed in category five exhibited a definite dislike of the particular dessert used for this study (Table II, page 37).

II. ANALYSIS OF THE COLOR DATA

Tabulations were made for the total group to study the degree of consistency of the color preferences of the subjects. The data from tests one, two, five, six, and seven were used to analyze the degree of consistency of flavor preference. The following six categories were used: (1) consistently white--subjects selected white in four of the five tests; (2) consistently pink--subjects selected pink in tests two, six, and seven; (3) consistently yellow--subjects selected yellow in tests one, five, and

TABLE II

CONSISTENCY OF FLAVOR PREFERENCE

	Category	Junior Male N9	Junior Female N7	Senior Male N9	Senior Female N6	Total Male N18	Total Female N13	Total N31
I.	Consistently vanilla	0	2	2	1	2	3	5
II.	Consistently strawberry	1	0	1	1	2	1	3
III.	Consistently lemon	0	0	0	1	0	1	1
IV.	Consistently all flavors	2	0	0	2	2	2	4
V.	Consistently refusing	1	1	0	0	1	1	2
VI.	Completely inconsistent	5	4	6	1	11	5	16

seven; (4) consistently all colors--subjects selected at the same test each of the colors offered for five of the tests; (5) consistently refusing--subjects refused to select a flavor of dessert in any of the five tests; (6) completely inconsistent--subjects who failed to reveal a consistent color preference for the five color tests. Subjects classified in categories one, two, and three were considered to have expressed a definite color preference. Subjects classified in categories four and six were considered not to have expressed a definite color preference. Subjects listed in category five expressed a dislike of the particular type dessert used for this study (Table III, page 39).

III. ANALYSIS OF GROUP AND SEX DIFFERENCES

The age differences in flavor and color preferences were determined by comparing the junior and senior groups in flavor and color preference consistency. The sex differences in the flavor and color preferences were determined by comparing the flavor and color preference consistency of the total group of girls with the total group of boys (see Tables II and III, pages 37 and 39).

IV. TABULATIONS

Tabulations were made to compare the mother's predictions of the child's flavor choice with the child's actual choice in the first and second test situations. The mother's predictions

TABLE III

CONSISTENCY OF COLOR PREFERENCE

	Category	Junior Male N9	Junior Female N7	Senior Male N9	Senior Female N6	Total Male N18	Total Female N13	Total N31
I.	Consistently white	0	1	0	0	0	1	1
II.	Consistently pink	1	1	0	1	1	2	3
III.	Consistently yellow	0	0	0	1	0	1	1
IV.	Consistently all flavors	2	0	0	2	2	2	4
V.	Consistently refusing	1	1	0	0	1	1	2
VI.	Completely inconsistent	5	4	8	3	13	7	20

were taken from questions two and three of the questionnaire. The mother's answer for the child in question two was compared with the child's choice in test one. The mother's answer for the child in question three was compared with the child's choice in test two. Percentages were figured to show the accuracy of the mothers' predictions (Table IV, page 41).

Tabulations of the mother's predictions of the father's choice and of her own choice were made. The mother's predictions of the father's choice were made from questions two and three of the questionnaire. The mother's choices were also taken from questions two and three of the questionnaire. No attempt was made to compare the mother's choice and the father's choice with the child's actual choice since only two of the families had previously tasted or eaten strawberry pudding (Table V, page 42). See Table VI, page 43, for a tabulation of the family's previous experience with the three flavors of pudding at home.

Each of the mothers was asked to list her favorite flavor, her husband's favorite flavor, and her child's favorite flavor excluding vanilla, strawberry, and lemon flavoring which were used for the experiment. See Table VII, page 44, for a tabulation of the listed favorite flavors.

TABLE IV

COMPARISON OF THE MOTHER'S PREDICTION OF THE CHILD'S CHOICE AT HOME AND HIS CHOICE IN THE NURSERY SCHOOL

Prediction	Number			Choice			Per Cent Correct
	Junior	Senior	Total	Junior	Senior	Total	
Question II							
Vanilla	7	9	16	3	5	8	50
Lemon	2	4	6	1	2	3	50
Don't know	4	1	5	-	-	-	-
Neither one	3	1	4	2	0	2	50
Question III							
Vanilla	7	10	17	1	3	4	23.5
Strawberry	2	2	4	2	1	3	75
Don't know	3	3	6	-	-	-	-
Neither one	4	0	4	2	0	2	50

TABLE V

TABULATION OF THE MOTHER'S PREDICTION OF THE FATHER'S CHOICE AND HER OWN CHOICE

Prediction	Father's Choice			Mother's Choice		
	Junior	Senior	Total	Junior	Senior	Total
Question II						
Vanilla	9	3	12	4	6	10
Lemon	5	5	10	11	6	17
Don't know	0	0	0	0	1	1
Neither one	2	7	9	1	2	3
Question III						
Vanilla	12	7	19	9	10	19
Strawberry	2	3	5	2	4	6
Don't know	1	1	2	2	0	2
Neither one	1	4	5	3	1	4

TABLE VI

TABULATION OF PREVIOUS EXPERIENCES WITH PUDDING AT HOME

Flavor	Child		Father		Mother	
	Junior	Senior	Junior	Senior	Junior	Senior
Vanilla	13	12	15	12	13	12
Lemon	5	7	11	8	11	8
Strawberry	0	2	0	1	0	0
None	3	2	1	2	3	2
All	0	1	0	1	0	0

TABLE VII

TABULATION OF FAVORITE FLAVORS EXCLUDING VANILLA, LEMON, AND STRAWBERRY

Flavor	Child	Father	Mother
Chocolate	20	17	20
Butterscotch	0	4	1
Peppermint	0	0	2
None listed	11	10	8

CHAPTER V

DISCUSSION

This chapter includes a discussion of the results presented in the previous chapter and possible reasons for the specific findings are given. Also, comparisons are made between the results and findings of previous studies.

The subjects did not reveal consistent preferences for a flavor or a color in their choice of desserts at nursery school. Therefore, on the basis of these findings the first hypothesis is tenable. This was the case for both the junior and the senior groups. Only nine of the thirty-one subjects expressed a definite consistency of flavor preference. Twenty of the children were completely inconsistent in their flavor choices. This agrees with the findings of Dudley, Sunderlin, and Moore (9) who found that preschool children do have preferences for certain foods, but that their preferences are not consistent over a period of many trials.

Only five of the thirty-one subjects expressed a definite consistency of color preference, whereas twenty-four of the subjects failed to express a color preference. This result agrees with the findings of Staples and Conley (34), Staples (33), and Michaels (25) who found that preschool children did not exhibit a statistically significant color preference, but that these children

showed an interest in all colors. These findings also support the first hypothesis that the subjects would not reveal consistent preferences for a flavor or a color in their choice of desserts at nursery school. It appeared that, in general for this group, the consistency of flavor preference appeared more often than the consistency of color preference. For most of the subjects who revealed inconsistencies it appeared that there was an interest in all of the three flavors and colors of pudding.

It appeared that the difference in the mean ages of the two groups was not a factor in terms of the consistency of flavor preferences or of the consistency of color preferences. On the basis of the data there does not appear to be a sex difference in terms of the consistency of flavor or color preference. These data support the second hypothesis that there would not be sex and age differences in flavor or color preference of preschool children. This agrees with the findings of Blatz (2), Dunshee (10), and Mirone (26) who found that there was no significant sex differences in the food intake and the food habits of preschool children. This finding also agrees with the findings of Katz and Breed (18) and Staples (33) who found that there was no striking differences between the color preferences of the sexes for preschool children.

The hypothesis that there would be no apparent relationship between the subjects' flavor preferences as observed in the nursery

school test situation and the flavor preferences of the child as checked by the mothers on the questionnaires remained tenable for these subjects. It appeared that the mothers were able to predict accurately only 50 per cent of the time. The sex of the child seemed to make no difference in the mother's ability to predict the choice of her child. Also, it appeared that the difference in the mean age of the two groups had no effect on the mother's ability to predict the flavor choice of her child in a given situation. One factor which may have been responsible for the inaccuracy in the mothers' ability to predict the flavor preference of the subjects in a given situation was that only two of the thirty-one children had tasted or eaten strawberry pudding at home. The two mothers that had served strawberry pudding at home did not predict accurately for their children for question three. The mothers of the children who had tasted or eaten lemon pudding were not able to predict more accurately than the mothers of the children who had not tasted or eaten lemon pudding at home. Twenty of the mothers reported on the questionnaires that their child's favorite flavor was chocolate. Chocolate flavoring was not used in this study.

For the trial test it appeared that the children were not familiar with the instant puddings that were used for this study. Much of the pudding came back in the dish uneaten even though the child tasted and selected a pudding freely to take back to his

table. For the trial test and the second test the strawberry flavor of pudding came back in the bowls uneaten more often than the vanilla or lemon flavors of pudding. As the subjects became more familiar with the pudding it was better accepted. For the last four test situations more of the subjects came back to the serving table for second and third servings of pudding. By the end of the testing period the subjects appeared to have accepted the pudding.

For tests five and six in which the flavor was kept constant and the color was different, the subjects made no verbal comment on the fact that these two different colors of pudding tasted the same. It was for these two test situations that more of the second servings given them were of a different color from the first serving. However, for the whole group more of the second servings given during the five final test situations were of a different flavor or color from the first serving given to the subject. It appeared that there was an increasing interest in all of the flavors and colors of pudding as the experiment progressed.

The subjects were able to follow the directions for the test. The experimenter had gained rapport with both of the groups before the trial test. The subjects appeared eager to taste and select a flavor or color of pudding. The two subjects that consistently refused to taste the dessert also refused to select dessert during the test periods. All of the other subjects tasted the pudding before making a choice. Most of the subjects did not

taste the pudding again before selecting a second serving of pudding. Only one subject refused to taste the dessert before making his selection. He did not refuse again after the first test.

The writer did not observe any evidences of the influence of the teachers or other children on the choices of the subject. The one subject that selected both flavors or colors of pudding for his bowl at the same time did this consistently throughout the testing period. One female subject consistently desired a verbal explanation of what flavor of pudding was in the bowl before she tasted the pudding. She was given this information.

The choices made by the children of both groups indicated that these particular children did not reveal consistent preferences for a flavor or a color of pudding. The difference in the sex and age of the subjects did not appear to be factors in the consistency or inconsistency of flavor and color preferences of these two groups of nursery school children. On the basis of the findings of this study and other research in flavor and color preference consistency, it appears that children of nursery school age are unpredictable in color and flavor choices.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this study was threefold: first, to gain knowledge concerning the influence of color and flavor in the dessert preferences of preschool children in a nursery school lunch situation; second, to compare the factors of age and sex with the color and flavor preferences of preschool children; and third, to compare the differences or similarities in the mother's opinion of the preferences of her child as expressed in the home with the flavor preferences exhibited by the child in the nursery school lunch situation.

It was hypothesized that (1) the subjects would not reveal consistent preferences for a flavor or a color in their choice of desserts at nursery school; (2) there would not be sex and age differences in flavor or color preference of preschool children for desserts; and (3) there would be no apparent relationship between the subjects' flavor preferences as observed in the test situation and the flavor preferences of the child as checked by the mothers on the questionnaires.

The subjects of this study were thirty-one children enrolled in The University of Tennessee nursery school and their parents. The senior group consisted of nine boys and six girls with a mean age of four years, nine months. Nine boys and seven girls were

members of the junior group with a mean age of three years, nine months. The subjects were a select group with regard to socio-economic class in that a large number of them were from the upper-middle socio-economic class. The subjects were limited to those who had completed more than four of the seven test experiences.

Data were obtained from two sources. The first was a questionnaire completed by the mothers concerning the flavor preferences of the child, the father, and the mother. The second source was an observational record of the subjects' preferences in the seven test situations.

On the basis of the results of this study none of the three hypotheses can be rejected. For most of the group the flavor and color preferences were not consistent over a period of many trials. There seemed to be an interest in all three of the flavors and colors of pudding used for this study. Sex and age differences in flavor or color preference were not found for this age group. The mothers were accurate in their predictions for this study only 50 per cent of the time.

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APPENDIX

INSTRUCTIONS TO THE SUBJECTS

Prior to making each selection of dessert the subjects were instructed by the experimenter at the serving table in the following way:

> I have two bowls of pudding. This is going to be a game for you. I want you to taste some of this pudding (pudding in the bowl on the experimenter's right), and I want you to taste some of this pudding (pudding in the bowl on the experimenter's left). Now point to the one that you want to take back to your table and I will give you some for your dessert. You do not have to take pudding if you do not want to.

INSTRUCTIONS TO THE STUDENT TEACHERS

Prior to the beginning of the test period the student teachers were given information concerning the experiments which were to be conducted during the lunch period at the Nursery School. This information was given at a bi-weekly seminar that met as a part of the nursery school practicum. The investigator said:

> As a part of my graduate program I am doing research concerning the influence of flavor and color on the dessert preferences of preschool children. On Mondays and Wednesdays of the next four weeks the children will be offered a choice of two different puddings at the serving table. I will sit at the serving table during each of the testing periods. I will instruct the children in the procedure for making a selection of desserts when they come to the serving table. Your instructions are to let only one child at a time from your table go to the serving table. See that each child at your table comes to the serving table for dessert before he leaves the dining room whether or not he desires dessert. Do not at any time make a reference to what dessert he is going to choose before he goes to the serving table, and do not make a reference to his choice when he returns to your table with his dessert. Keep all discussion about the dessert to a minimum until all of the children at your table have made their selection of dessert. The children may come back for seconds if they desire. Are there any questions?

NURSERY SCHOOL MENUS

Mondays

Beef Patties
Baked Potato Green Beans
Toast Strips
Milk

Wednesdays

Creamed Chicken on Rice
Raw Carrots
Toast Strips
Milk

Test 1
Vanilla or Lemon Pudding

Test 2
Vanilla or Strawberry Pudding

Test 3
Vanilla or Lemon Pudding
(yellow)

Test 4
Vanilla or Strawberry Pudding
(pink)

Test 5
Vanilla Pudding
(yellow or creamy white)

Test 6
Vanilla Pudding
(pink or creamy white)

Test 7
Vanilla Pudding
Lemon Pudding
Strawberry Pudding

FLAVOR PREFERENCE QUESTIONNAIRE
(To be completed by mothers)

Child's name_____

Child's age ____year _____month Child's group_____

1. Have you, your husband, and your child tasted or eaten any or all of the following flavors of pudding at home? (check answers)

Child			Father			Mother		
Yes	No		Yes	No		Yes	No	
___	__	vanilla	___	__	vanilla	___	__	vanilla
___	__	lemon	___	__	lemon	___	__	lemon
___	__	strawberry	___	__	strawberry	___	__	strawberry

2. If you, your husband, and your child could have only one dish of pudding each, and were asked to choose from the following listed flavors of pudding, which flavor would be chosen? (check answers)

Child		Father		Mother	
___	vanilla	___	vanilla	___	vanilla
___	lemon	___	lemon	___	lemon
___	don't know	___	don't know	___	don't know
___	neither one	___	neither one	___	neither one

3. If you, your husband, and your child could have only one dish of pudding each, and were asked to choose from the following listed flavors of pudding, which flavor would be chosen?

Child		Father		Mother	
___	vanilla	___	vanilla	___	vanilla
___	strawberry	___	strawberry	___	strawberry
___	don't know	___	don't know	___	don't know
___	neither one	___	neither one	___	neither one

4. Do you, your husband, and your child have a definite flavor preference for a flavor other than vanilla, lemon, and strawberry? If so, list flavor.

_____Child _____Father _____Mother

5. Is your child allergic or has your child ever been allergic to these listed flavors? (check answers)

Yes	No	
___	___	Vanilla
___	___	Strawberry
___	___	Lemon

LETTER TO THE PARENTS

March 22, 1963

Dear Mrs. _____

As a part of my research project for a Master's degree in Child Development I am studying the flavor and color preferences of preschool children. In order to carry out this research study I need your cooperation. Will you please complete the enclosed questionnaire, place it in the stamped self-addressed envelope and return it to me as soon as possible.

When this study has been completed I will be glad to give you information about the findings. If you are interested in such information, please contact me at the Nursery School office.

Thank you for your help and cooperation.

Sincerely yours,

Martha Lou LaLance
Graduate Assistant in
Child Development

MLL:jas

Enclosures

FORM FOR RECORDING DATA

Dessert Preference Record

_____ Group

Name of Child	Test	Test	Comments	Comments