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ACKNOWLEDGMENTS

NAVAJO STUDENT FOOD PREFERENCES

by

Kathlyn L. Coffman

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family and Child Development

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Kathlyn L. Coffman

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CHAPTER I
INTRODUCTION TO THE PROBLEM

Definition of terms

Adapt -- "to make suitable to requirements; adjust or modify fittingly."¹

Adaptability is a trait which has been attributed to Navajo² Indians by anthropologists, educators, novelists, psychologists, artists³ -- in fact, by almost everyone who has had dealings with them over a period of time. Yet, to identify specific examples of their adaptability and the attempt to measure the effect upon interpersonal relations of evidences of adaptation has proved to be no easy task.

An additional definition serves to make clearer the meaning of this term as it is used in this thesis: "Adaptation. Sensitivity change after continued stimulation."⁴ There is a slight by important

¹Clarence L. Barnhart (ed.), The American College Encyclopedic Dictionary, Vol. I (Chicago: Spencer Press, Inc., 1959), p. 13.

²This spelling of "Navajo" is found in the "Treaty with the Navajo of 1868" and is the one authorized by the United States Court of Indian Claims. Much of the material published during the 1940's and 50's used the Anglicized spelling--"Navaho."

"'Navaho' is not their own word for themselves. In their own language they are dine, 'The People.'" Clyde Kluckhohn and Dorothea Leighton, The Navaho, (Cambridge: Harvard Univ. Press, 1956), p. xv.

³Note: Novelist Alberta Hannum, Spin a Silver Dollar (New York: The Viking Press, 1945), p. 15, and artist, Laura Adams Armer, In Navajo Land (New York: David McKay Co., Inc., 1962), p. 43.

⁴Julian Hochberg, William W. Lambert, and T. A. Ryan, Vocabulary for Psychology (Flushing, N. Y.: Data-Guide, Inc., 1959).

difference in the meaning of "Adjustment. Behavior patterns which meet demands of social, physical and internal environment."⁵

This study probes the question of what kinds of changes occur within individuals when they attempt to live successfully in two or more differing cultures simultaneously. It can even be questioned if such a thing is possible; perhaps the attempt is completely unrealistic.

When a Navajo student undertakes the process of becoming educated at an off-reservation boarding school such as Intermountain School at Brigham City, Utah, he is inevitably faced with a cultural clash. Sociologists have identified some ways of handling contacts between differing cultures as: accommodation, acculturation, and assimilation. These may be defined as follows:

Accommodation. Mutual adjustment between groups which keep their own identity and goals, usually through truce, compromise, arbitration, or toleration.

Acculturation. Acquisition by one culture of the culture traits or social patterns of another.

Assimilation. Nearly complete absorption of one culture by another. Usually both take on some characteristics of the other and descendants of either become nearly undistinguishable from one another with respect to cultural origin and their social patterns.⁶

Obviously, accommodation is not an answer available to the Navajo student because he comes from a tribe numbering less than 100,000,⁷ and many times that number of people in the dominant culture know nothing about his culture and have no reason to adjust to the Navajo way.

⁵Julian Hochberg, William W. Lambert, and T. A. Ryan, ibid.

⁶William J. Goode, Vocabulary for Sociology (Flushing, N.Y.: Data Guide, Inc., 1959).

⁷"Population Notes," Office of Vital Statistics, Navajo Agency, Window Rock, Ariz., Oct. 8, 1965, mimeographed sheet, p. 1 gives 91,350 as the estimated total population.

The Navajo student has no real choice about acculturation either. He must acquire some of the social patterns of the dominant culture if he is to succeed on a job and thereby gain the means to improve his economic lot. And the need to improve economically underlies present Indian problems to an alarming extent.

The matter of assimilation into the dominant culture, however, is quite another thing. It is the author's conviction that the fear of being "swallowed up" and losing his identity as a Navajo constitutes a big block to educational achievement for many a Navajo student at Inter-mountain School.

At this point a definition of "culture" seems to be in order since it is widely used in the discussion: "complex of rituals, beliefs, customs, laws, knowledge passed to succeeding generations."⁸

Mead refers to "culture" as "the systematic body of learned behavior which is transmitted from parents to children."⁹ Speaking of Ruth Benedict, Mead continues:

. . . she developed her own special contribution, her view of human cultures as "personality writ large", . . . as having selected from the great arc of human potentialities certain characteristics and then having elaborated them with greater strength and intensity than any single individual could ever do in one lifetime.¹⁰

In the following passages, Mead interprets Benedict's view of the value of understanding and studying culture similarly to the author's intended application of "adaptability:"

She was committed to a picture of developing human cultures for which no limit could be set because the possible combinations were so many and so varied as to be inexhaustable. But,

⁸Goode, loc. cit.

⁹Margaret Mead, In a new preface to Ruth Benedict, Patterns of Culture (New York: Mentor Books, 1959), p. v.

¹⁰Ibid.

as her knowledge of different cultures grew, so her initial sense that the individual was the creature of culture . . . changed to a detailed consideration of where and in what ways men could shape their culture closer to their highest vision. The belief that this was possible was to grow.¹¹

The preceding statement seems to lend support to the notion that individuals may be able to honestly adapt culture to meet individual needs as well as adapt to cultural patterns required for acceptance by other members of the two or more cultures to which he aims to belong.

The importance of food

Food is important in many ways to people everywhere. Because food preferences is a subject on which most people have definite likes and dislikes, and because it is also a topic which can be discussed easily without embarrassment, this was selected as the means for approaching the evaluation of Navajo student adaptability. The first step of this evaluation is to discover what foods are available in the home environment and what changes do occur in food preferences after living for an extended period of time in the school environment.

The Navajo student at Intermountain School comes to school with a rather limited background of familiar foods. Fried bread, mutton, corn, squash, coffee, and canned goods comprise the basic diet on the Navajo Reservation. The way of life, distance from stores, and lack of refrigeration limit the use of perishable foods. This by no means limits his enjoyment of fruits or other perishable foods when the opportunity presents itself.

¹¹Ibid., p. vi.

An Intermountain School senior student discusses food arrangements at her reservation home:

For our livelihood we depend largely on the livestock and farming--which we can't always depend on due to poor crops for lack of water. There's no such thing as irrigation where I live. Either the crop fails or you have to think of some way to save it.

Usually my mother buys her groceries about twice a month by trading or, occasionally, with money. That's the time when we have bacon, eggs, vegetables, and the other foods that we usually don't have. It's hard to preserve food for there's no refrigerator in our house. But we make the food last longer by dehydrating it by the method of drying. We eat very simply. Meals are usually composed of biscuits, stew, some canned vegetables or fruit, and coffee or tea. When we are out of food, we usually have fried bread and meat and coffee for meals. Fortunately, this does not happen most of the time.¹²

Establishing good food habits, acquaintance with a variety of foods, and development of good table manners were among the goals for all students during the early days after Intermountain School opened its doors in 1950. Boyce tells how the dining room was utilized in the education process during Special Navajo Program days.

The academic teacher and the dormitory attendant collaborate in such learnings as how to make a bed, how to keep one's locker neat, customs in the dining room, and the like. In short, the child's entire new environment is to be exploited consciously in the educational process.

Under this concept, the school dining operation becomes much more than mere feeding of hungry bodies. A monotonous menu, just because it is "most economical" cannot be viewed as "good enough." Rather, going to the dining hall becomes a pleasurable experience to which the student can look forward. He finds some of his traditional foods, such as mutton and corn and squash. Also, there is a friendly teacher or dormitory attendant to assist him until he becomes accustomed to the new table manners expected. They encourage him to try servings of new foods. Both before and after, he gets help in learning the pertinent English and acquiring the social customs which make him feel at home. Before he graduates, the student gets an

¹²Pita Ashike (Term paper, Literature Class, March 25, 1966).

experience in ordering from a menu and in dining "family style" in small groups.¹³

In the interval since then, policy has changed so that adults do not eat in the student dining room except on very rare occasions.

On October 25, 1965, National Youth Corps funds from the Office of Economic Opportunity made possible the hiring of students to serve and handle the food and clean-up activities in the student dining room. Prior to this time, students were detailed to take care of these chores; they were scheduled from specific dormitories and classrooms on a rotating basis. According to the steward, the paid workers have added considerably to the efficiency and quality of serving and handling food.¹⁴

A number of projects have been undertaken to ensure a pleasant atmosphere in the student dining room. During the fall of 1963 acoustical tile was installed, and the metal army trays which had previously been used were replaced with plastic divided trays. For some meals FM radio music is piped in. New formica-topped tables in varied shapes and sizes and colorful molded plastic chairs were purchased in 1965.

The students themselves show a great deal of interest in food, what is served, behavior in the dining room, and related matters. Matters relating to food have frequently been included in student council business meetings and in editorials and letters in the high school's weekly newspaper, Eagle Views (which began publication in August 1965).

Thompson emphasized the need for social training related to food.

A few years ago an Indian high school girl accompanied me to a national meeting. Her training had been good. She was

¹³George A. Boyce, Answers to Questions on Indian Education and the Special Navaho Program (mimeographed paper, January, 1958), p. 4.

¹⁴Conversation with Intermountain School Steward, George Francis, April 4, 1966.

neatly and attractively dressed. Her English was above average. In other words, she was just as sophisticated as the other youth from all parts of the country attending this particular meeting except for one thing--her table etiquette. It reflected the habits acquired in her home and crowded boarding school dining room. Although it did not seriously affect her relationships with the youth in this particular meeting, it did set her apart. Sometimes it is supposedly less significant things that assume importance in acceptance of people. Successful adjustment to newer ways of living requires new learnings in many areas of living. This places special and additional responsibility on schools instructing Indian youth. The importance of academic and vocational skills is recognized by the school and not overlooked. However, the development of social skills is pretty generally regarded as a responsibility of the home.

Indian schools that take this position and do not include in their instruction of Indian children the social skills they will need to adjust to newer ways of living fail these children. Therefore, experiences and learnings in this area must be supplied by the school. Most Indian schools are conscious of their responsibility in this area, and they are doing something about it. Are we all doing as much as we can?¹⁵

A new girls' vocation, Quantity Foods, was initiated in the fall of 1963. For their training, these girls prepare and serve food to small groups in their special dining room. Opportunities remain limited for many of the students to meet the social need noted by Thompson.

Food is important on a national level because it does affect physical fitness. One of many campaigns to interest youth in developing better food habits is cited:

We are particularly concerned about our adolescents, who hold the future in their hands. With the abundance that surrounds us, we should have the strongest, happiest, best-nourished teenagers in the world. But study after study indicates this is not true. Nor is it a matter of economics; if anything, children of wealthy parents are less likely to be well-fed than those of parents with modest means.

There is more to the family meal, of course, than an adequate diet. It can be the best time of the day to nurture a child's emotional development, as well as his physical growth.

¹⁵Hildegard Thompson, "Meeting a Social Need," Indian Education, 295 (March 1, 1957).

We have also tried, in this issue, to depict the road to emotional maturity as it appears in capsule form around the family dinner table.

Love and nutrients, consideration and vitamins, happiness and leafy green vegetables--all are essential in building a stronger America for tomorrow.¹⁶

At Intermountain School the nutrients, vitamins, and leafy green vegetables have been carefully supplied. This can be observed in the Master Menus included in the appendix. Two Master Menus are included: one for the year preceding the giving of questionnaires for this study, and one for the year following. Although these menus generally include the same foods, the 1963-64 Master Menu reflects somewhat a change in personnel and the willingness of students to accept new foods. Fish patties were added to the later menus--along with salmon and tuna which had been included in the 1961-62 Master Menu. At an earlier time fish--as well as a number of other foods--was considered taboo by the Navajo. Ladd discusses some food taboos:

There are many prohibitions with regard to eating birds, fishes, and various kinds of animals . . . The most widespread of these food taboos is probably that applying to fish. "Never eat fish" because "anyone who ate them would fill up with water (dropsy) and die." My principal informant attributed his sickness to having eaten a "great big fish."

Other foods that have been reported dangerous to eat are turkey, pig, dogs, wolves, coyotes, foxes, rats, snakes, lizards, hornfrogs, ants, birds, etc. Perhaps the danger is explained by the fact that eating these animals violates the taboo against killing them. The resulting sickness is often described as the acquisition of undesirable characteristics of the animals eaten.¹⁷

Navajo students do not readily discuss taboos of any kind, so it would be difficult to generalize concerning how persistent these taboos

¹⁶"Mealtime is Family Time," an editorial, Everywoman's Family Circle, (January, 1960).

¹⁷John Ladd, The Structure of a Moral Code (Cambridge: Harvard University Press, 1957), p. 231.

are with the younger generation. Francis reported that he first ordered very small fish patties because he had been warned that students might consider them unacceptable. He also reported taking the precaution of serving catsup and mayonnaise (formerly accepted) along with the fish.¹⁸ The student reaction was favorable. Another indication that the old taboo about fish has broken down is that the Navajo Tribe has developed recreational facilities in tribal parks which include stocked lakes for fishing.

Little emphasis has been placed on kinds of table service or the use of china and table linens. Table conversation in the Intermountain School dining room has generally been limited to the peer group. There has been very little exploitation of the use of food in symbolism as sharing as Mead discusses it.

The family meal is the high point of shared family relationship. Nowhere else can the old and the young, the talkative and the quiet, the patient and the impatient meet in such a degree of shared and intimate enjoyment.

Sleep divides people; even the baby sleeps alone, in crib or cradle, sometimes the most elaborate possession a family has.

Work divides people, as the father goes off to hunt or fish, to work in factory or office, to trade or to govern, while the mother remains at home. And, increasingly all over the world, the children go to school.

Leisure divides people, as the old sit in the sun or beside the hearth, while the young and strong climb mountains or drive cars through heavy traffic to lake or seashore. Interests and moods divide people. The father may be bursting with news from the office, but the children wriggle impatiently; the mother may have a long list of complaints about everything that has gone wrong at home, to which neither father nor children want to listen.

To keep such a diverse group of people together, in understanding and relative peacefulness, would be difficult without the food they share. But when they gather around a table spread with food, where each one has a place, this complicated group of people can become one, at least for the length of the meal.

¹⁸Conversation with George Francis, loc. cit.

The importance of eating together is something that human beings learned very long ago, at a time when the men hunted for food and brought it home for the women to prepare. This meal, eaten around a fire that kept wild animals at bay and drew in those who had risked all sorts of dangers during the day, later became a symbol of many kinds of important human relationships. "To break bread together" means to be friends, and sharing another man's salt became, in many parts of the world, a sign that you were now safe from any attack from him, because he had given you food. The first meal eaten by a bride and groom, the special feast served for the initiation of boys or girls, the meal eaten by mourners, the food that was offered by men to God, or by God to men, have all been ways in which the universality of shared food and drink has been used to bind human beings together with ties that are strong and durable.¹⁹

Perhaps food experiences are lacking in variety, but acquaintance with and enjoyment of varied foods have been acquired by many Intermountain School students. Marsh notes excessive fat and carbohydrate consumption for Indians in the acculturation process.

Today's high food costs and a growing preference for the white man's processed foods are resulting in an excessive consumption of fats and carbohydrates. Acculturation is not an unmixed blessing for these Indians.²⁰

This does not seem to be true of Intermountain School students. (Note food acceptance and rejection listings, pp. 48-69.) Perhaps the variety of foods served in the Intermountain School dining room provides the Navajo students with a broader range of food preferences than would operate at other places. (Note samples of the Intermountain School Master Menus in the Appendix.) Certainly, they are not consuming as much fat and carbohydrates as in the native diet.

¹⁹Margaret Mead, "Mealtime: A Tradition of Family Sharing," Every-Woman's Family Circle, (January, 1960), pp. 19, 66.

²⁰Lucille J. Marsh, "Health Services for Indian Mothers and Children," Children, (November-December, 1957), reprint unpagged, as quoted in, Miles V. Zintz, Director, Indian Research Study, Final Report, Section I, 1957-60, (College of Education, Univ. of New Mexico, Albuquerque, mimeographed report), p. 67.

Food is important to the Intermountain School student. He has made many changes in his food habits and preferences. Food preference was chosen as the factor to be recorded and statistically analyzed in this study because:

1. There were likely to be recognizable changes in preferences between age groups.
2. People usually have definite likes and dislikes where food is concerned.
3. There is no connotation of "goodness or badness" involved in food preferences. (Exception: some foods may be considered taboo by traditional unacculturated Navajos.)
4. There is no embarrassment about discussing food preferences on the part of the Navajo student.
5. A knowledge of student food preferences would be of practical value to the dining room staff.

Statement of the problem

Does the Navajo student at Intermountain School possess adaptability as a personality trait? Can his adaptability be gauged in terms of observable and measurable factors? In other words, can a level of adaptability for the Navajo student be empirically ascertained?

This is an exploratory study. It is aimed at identifying factors which indicate the extent to which adaptability exists as a personality trait of these Navajo Indian students.

Data were gathered by administering two questionnaires to 230 students (only 200 were used in the final study as participants who were absent at the time one of the questionnaires was filled out or who failed

to answer key questions were dropped) in the 5th, 8th, and 11th grades at Intermountain School during the 1962-63 school year.

Using a breakdown of kinds of personality traits given by Bronfenbrenner and Ricciuti,²¹ the author arrived at the plan of testing a motivational personality trait (adaptability) by applying statistical tests to a readily observed and discussed response tendency (acceptance or rejection of 141 foods), and to a stimulus characteristic personality trait (popularity with his peers).

The null hypothesis to be tested is: There are no differences in the true proportions of acceptance of each food.

The author would assume that if the hypothesis must be rejected in all, or most, of the food groups, that this would be evidence that an adaptability factor does exist.

Therefore, the purpose of this study is to identify what percentage of Intermountain School students accept and reject 141 selected foods which are available to them in the student dining room, local restaurants, home economics classes, and local grocery stores. Not all the foods are equally accessible to students. Fish and seafoods are generally understood as taboo to the unacculturated Navajo. They are included partly as an indicator of willingness to accept these particular taboos as outmoded superstition rather than as something dangerous to the modern Navajo.

Two corollary hypotheses are explored, but no attempt is made in

²¹Urie Bronfenbrenner and Henry N. Ricciuti, "The Appraisal of Personality Characteristics in Children," In Paul H. Mussen, Handbook of Research Methods in Child Development (New York: John Wiley and Sons, Inc., 1960), pp. 771-773.

this study to either prove or disprove them. These two hypotheses--stated in the null form are:

1. There is no relationship between a Navajo student's food preference and his popularity with his peers.
2. The degree of adaptability is not related to a student's percentages of foods rejected.

Importance of the problem

There seems to have been an assumption in a number of studies that the prime problem to be solved by the Navajo student is adjustment to the dominant culture. Christiansen²² studied opinions of employers toward Navajo employees on summer jobs in the Intermountain West. Baker²³ studied vocational success. Fish²⁴ concluded that failure to adjust to the dominant culture caused up to 90 percent of job failures on the part of 714 Intermountain School graduates.

All these studies concerned rating of Navajo students on the third type of personality trait, stimulus characteristics, as gauged by members of the dominant culture in work situations. This is, of course, essential information for helping students attain economic success. But the matter of a happy and useful personal life is also important, and information which shows the Navajo student's self-evaluation of his

²²William V. Christiansen, "The Employers' Opinions on Navajo Student Employees during the Summer of 1954" (unpublished Master's thesis, 1955, Utah State Agricultural College, Logan, Utah).

²³Joe E. Baker, "Problems of Navajo Male Graduates of Intermountain School during their First Year of Employment" (unpublished Master's thesis, 1959, Utah State University, Logan, Utah).

²⁴Lewis J. Fish, "A Study of the Reasons for Failure on the Job of some Graduates of Intermountain School" (unpublished Master's thesis, Utah State University, 1960).

likes should be useful to the educator.

It is the author's conviction that Navajo students are reluctant to just become part of "White Man's Society" and that they are striving--however intermittently and painfully--to be successful in both the dominant culture and as members of the Navajo Tribe and as Indian Americans.

In order to maintain his status as a Navajo, he has to keep his language and he needs to know the important elements of his traditional Navajo culture. This is a difficult task considering that Intermountain students spend nine months out of the year at boarding school and that many parents²⁵ do not speak or write English, which puts a real burden on communicating through letters--particularly since Navajo has not until recently been a written language.

If this view is valid, the approval--or ridicule--of his Navajo peers toward his academic achievement and his taking on some of "White Man's Ways" may well be of far greater importance than given credit for generally.

Also, if adaptability is a motivational personality trait of the Navajo student, his feelings and his understanding of a situation--or lack of understanding--matter more than do objective, external facts in determining his actions.

Perhaps one of the simplest and most effective means of helping the student develop the self-confidence needed when he sets out to chart his own way is to encourage pride in his own cultural heritage--

²⁵George A. Boyce, "Answers to Questions on Indian Education and the Special Navajo Program," (mimeographed paper, January, 1958), p. 9. "Of 511 new students enrolled in Sept., 1957, 262 of the parents or guardians were non-English speaking to the point of having to sign the application blank by thumbprint in the presence of a government interpreter."

on its own merits; not via the route of running down the dominant culture or any other. Victor referred to this need for appreciating his own cultural heritage.

Recognition is now being given to the importance of using cultural information in providing training for young people of another culture. The individual must acquire a knowledge of cultural contributions and an appreciation of his cultural heritage before he can gain a feeling of self-respect or identify himself with a specific segment of history. This lack of identification is the basis for much of the aimless effort, the feeling of futility, the lack of endeavor, and the absence of motivation and goals which we, as educators, struggle with today.²⁶

Zintz noted another pitfall in Indian education--that teachers sometimes lack knowledge and understanding of the child's culture: "Too many teachers are inadequately prepared to understand or accept the dissimilar cultural values. The values of most teachers are middle-class."²⁷ The fact that the teacher is in authority gives a strong implication for the unwary that his ways are, therefore, superior since he is in charge in the classroom. Zintz warns:

The Indian child comes to the classroom with a set of values and a background of experience radically different from those of the average Anglo child. To teach the Indian child successfully, the teacher must be cognizant of these differences and must above all else seek to understand, without disparagement, these ideas, values, and practices different from his own.²⁸

Actually, neither teacher nor pupil can be blamed for not fully comprehending and utilizing the Indian cultural inheritance. Anyone

²⁶Wilma L. Victor, "Indian Culture Contributions to American Society," (Speech given at the annual meeting of the National Society of the Daughters of the American Revolution in Washington, D.C., April 21, 1965), mimeographed reprint, p. 8.

²⁷Miles V. Zintz, Director, Indian Research Study, Final Report Section I, 1957-60, (College of Education, University of New Mexico, Albuquerque, Mimeographed report), p. 56.

²⁸Ibid.

who has found himself in the educational whirl knows that good intentions in studying these matters seldom come to pass when they must compete with what seem to be more pressing and practical problems. Perhaps administrative policy should place emphasis here for inservice training because

. . . while the cultural difference has been identified, labeled, and given considerable credence, it has not been sufficiently explored by educators. Teachers generally have not been oriented sufficiently so that they could adequately bridge the gap in their own interaction with Indian children.²⁹

This study and many more on different subjects are needed to substantiate or repudiate generally held opinions. Boyce emphasizes why this study and others like it are important.

There is need for considerable, organized research in the social sciences as applied to Indian educational needs. There will be a continuing need for better Indian schools and better Indian educational programs, based on continuous research of the highest professional competence for an indefinite future period. Perhaps the most wholesome thing that could happen on Indian problems would be a full and frank confession of the fact that we don't have the answers. We just don't have the essential data on the basic human needs of the Indian.³⁰

As has been pointed out earlier in this paper, this is an exploratory study. A wealth of data has been gathered. This is an area of inquiry where one is wise to tread cautiously, but where the stakes are high and it is imperative to proceed! Boyce is in full concurrence on this point.

To get at the core of the Indian problem, we must look deeper into the inner man--if not for the cause, at least for the cure. This poses a real difficulty, for it is in this very realm of human relations--social, psychological, cultural, and personal--that we know the least. As in the

²⁹Ibid., p. 17.

³⁰Boyce, op. cit., p. 34.

case of other sciences, many of the answers cannot be forthcoming, either as to cause or cure, without considerable organized research. The past record yields little on which to build with certainty. Rather, Indian history is replete with things to avoid continuing or repeating.

At the same time, our national need for productive, income-earning, taxpaying citizens grows critically. In this sense it would appear that Indian education faces an urgency comparable to that of the nation as a whole in updating plant, program and methods to the fullest possible.³¹

Actually the curriculum at Intermountain School has always been aimed at selecting and using the best of both cultures: the traditional Navajo culture and the dominant American culture. This is shown clearly in the Intermountain High School Philosophy, adopted in 1963 prior to accreditation of the high school, which states:

Philosophy

Intermountain High School is a Federal school dedicated to the task of educating Navajo youth.

This school's purpose is to enable each student to realize his full potential emotionally, socially, aesthetically, spiritually, physically, intellectually, and vocationally in order that he may become a contributing member of our everchanging democratic society. The school aims to aid the student in preserving his own cultural heritage and in establishing a new set of personal values acceptable to himself and to the society in which he lives.

The program is designed to respect the worth and dignity of each individual and to provide each with the curriculum suited to his needs, abilities, and aspirations.³²

The Navajo student may well set his goal at not only adjusting to the dominant culture and maintaining his Indian status, but at making a unique contribution to his nation and the world.

Victor noted in addressing the National Society of the Daughters of the American Revolution: "It is not an easy task to project the

³¹Ibid., p. 32.

³²Intermountain School Catalog (in use during the 1964-65 school year), p. 1.

that the American Indian has already contributed much and can continue to play an important role in building foundations for understanding minority peoples around the world."³³ Perhaps the task of projecting and carrying out that idea belongs to the Indian himself!

Limitations of the problem

This study has been structured to show indications of a motivational personality trait (adaptability) by applying statistical tests to a response tendency (acceptance and rejection of 141 foods by 200 students of Intermountain School, Brigham City, Utah) and by comparing this to a stimulus characteristic (popularity with his peers). The null hypothesis: "There are no differences in the true proportion of acceptance of each [of the 141 foods included in the questionnaire in the appendix] food" is to be tested by using the χ^2 test of significant differences. Corollary hypotheses concerning indications of adaptability and comparisons with student popularity are only covered descriptively.

Background for the study

Intermountain School. Much could be said about this institution, but for the purpose of identifying the setting of the study, a few brief quotations from school publications will suffice.

Intermountain School in Brigham City is a coeducational boarding school for Indian students with an enrollment of over 2,000. It is operated by the U. S. Department of the Interior. The students are Navajo Indian boys and girls whose cultural background and needs are somewhat different from most public school children. Students come voluntarily from the Navajo reservation 600 miles south of Brigham City,

³³Victor, op. cit., p. 2.

many from one-room, mud, and log hogans in isolated areas.³⁴

A few further comments from the 1965-66 High School Handbook are of interest in acquainting the reader with the establishment of Intermountain School.

It was originally a U.S. Army Hospital built during World War II and was known as Bushnell Hospital. As many as 6,000 wounded soldiers were hospitalized at one time. Shortly after the war, it was closed and remained idle for several years.

In 1949 the United States Government decided it would be a good place to have an Indian School. The first 500 students arrived in the middle of the winter in January, 1950. In 1954, twenty-four boys and girls received their diplomas and became Intermountain's first graduating class.

Since that time our school, with approximately 2,000 students, has grown to be the largest boarding school for Indian children in the world. It has more buildings, a larger campus, more students and more teachers than any other Indian school. The school plant is composed of 203 buildings of which most are connected by ramps.

There are 375 staff members employed at Intermountain to help students get an education. These include the Administrative staff, the Teachers, Guidance, Placement, and Maintenance personnel.³⁵

There are two academic departments: elementary and high school, with considerable flexibility in grade placement resulting from the unique needs of students. The elementary program is presently ungraded. The high school has the four usual grades--freshman, sophomore, junior, and senior--though these classifications merely indicate how far from graduation or completion of a program the student is. Students are ability-grouped for some classes according to standardized test scores. Reading scores range from below 4.0 to over 13.0. Most students train in a trade.

The students included in the study. The sample included 200 students

³⁴Intermountain School, undated mimeographed enclosure: "To Teacher Applicants," in use in 1965, p. 1.

³⁵Intermountain High School Student Handbook, 1965-66, pp. 3-4.

who were in the fifth, eighth, and eleventh grades at Intermountain School during the 1962-63 school year.

The Navajo: America's largest Indian tribe during a period of rapid cultural change. The Navajo Reservation covers roughly 25,000 square miles in the Four Corners Area where Arizona, New Mexico, Colorado, and Utah meet. The greatest area lies in Arizona. The Reservation is bounded on the north and west by the San Juan and Little Colorado Rivers.³⁶

Fifty years ago it looked as if the American Indian would soon be only a memory--a vanished American. Not the Navajo! They grew from an estimated population of 8,000 at the time of the Treaty of 1868 to about 85,000 in 1957.³⁷

The latest population estimates available list 86,600 Navajos living within the reservation and 4,750 adjacent to the reservation.³⁸ The Navajo tribe has an annual increase of 2 1/2 percent. The growth rate of the Navajo is not part of the "baby boom" which swept the United States during and after World War II. It is rather the result of improvement of health facilities and other factors discussed in "Population Notes" from Window Rock, Arizona, The Navajo Tribal "Capitol."

For the past two decades, there has been considerable discussion of the so-called "population explosion" in the United States. Demographers, social scientists, economists, and many others have had a hand in explaining the causes and effects of the development--but few, if any, have a valid explanation. On

³⁶LeRoy Condie, The Effect of Cultural Differences in the Education of Navajo Indians, Prepared for the Univ. of New Mexico Research Study: The Adjustment of Indian and Non-Indian Children in the Public Schools of New Mex., Sept. 1958, pp. 1-3.

³⁷Robert W. Young (ed.), The Navajo Yearbook (Washington: Government Printing Office, 1957), p. 281.

³⁸"Population Notes," op. cit.

the Navajo, it is doubtful that one could find the evidence of this "baby boom" for there appears to have been little change in the birth rate for some time. This is generally true in a population not seriously affected by a dollar economy or by wars. However, advances in the broad fields of personal and public health have materially reduced the death rate in every age group--resulting in a marked increase in the Indian life span. This then tends to increase the population at a higher rate for Indians than for other racial groups. At the same time, the expanding educational and employment opportunities away from the reservation have tended to slow down the reservation area population growth rate.³⁹

There is much that could be said about the Navajo as an ethnic group--they are certainly a colorful and distinct group, but it is not the purpose of this study to dwell on the past. The author would particularly recommend two books by Kluckhohn and Leighton, The Navaho and Children of the People,⁴⁰ to readers interested in exploring the subject in depth.

A few general remarks can set the stage for today's period of cultural transition. About 1000 A.D. (or earlier or later), the first Navajos arrived in the American Southwest. Language links the Navajo with Athapascan groups: the Apache groups in Canada and Alaska, and at an earlier date, his ancestors may have lived in Asia. After the Navajos arrived in the Southwest, contacts with Pueblo and other Indian tribes and with the Spanish resulted in acquisition of sheep, corn, weaving, silversmithing, and use of the horse.⁴¹ Condie sums up the Navajo's life in the Southwest prior to the impact of Western European culture:

³⁹Ibid.

⁴⁰Kluckhohn and Leighton, op. cit.; and Dorothea Leighton and Clyde Kluckhohn, Children of the People (Cambridge: Harvard Univ. Press, 1948).

⁴¹Condie, op. cit., pp. 6-26.

What kind of accommodation pattern would have eventually come out of the feudal triangle--the Navajo, Spanish, and Pueblo? The question remains unanswered because a fourth figure appeared on the field. This was the Anglo, who was destined to have more far-reaching effects upon Navajo life than any culture The People had previously encountered.⁴²

Some of the meaningful dates concerning the Navajo and the Federal Government of the United States may be reviewed: in 1848, under the Treaty of Guadalupe Hidalgo, the U. S. acquired a large territory which included Navajoland; in 1852 Fort Defiance, then the most remote military outpost in the United States, was established in Navajo Country; in 1863 Col. Kit Carson, under orders from Washington, rounded up the Navajos in retaliation for raiding American settlements and relocated them near Fort Sumner on the Pecos River. After five unsuccessful years of trying to make farmers of the Navajo, the Treaty of 1868 was drawn up and the Navajo returned to Navajoland. Agent Dodd at Fort Wingate formally assumed charge of 7,111 Navajo Indians on November 1, 1868.⁴³

From 1868 to the early 1930's, Navajoland was undisturbed by outsiders. Traders, missionaries, employees of the Bureau of Indian Affairs, and occasional travelers did penetrate Navajo Country, but they were welcome.

A Stock Reduction Program undertaken by the Bureau of Indian Affairs in 1933 was brought on by increases in sheep, goats, and horses to the point that the rangeland was deteriorating at an alarming rate. The program was widely misunderstood and resulted in considerable bitterness.⁴⁴

⁴²Ibid., p. 27.

⁴³Ibid., pp. 28-32.

⁴⁴Ibid., pp. 34-36.

During the 1930's, a good many day schools were manned by teachers who, during the Great Depression, finding other jobs unavailable, brought an increase in quality to the limited educational opportunities available to the Navajo. But the Second World War was the turning point for the Navajo. From then on, the Navajos themselves have increasingly wanted and demanded greater economic and educational opportunities.

It was soon after the end of World War II that the educational innovation known as the Special Navajo Program came into being. Boyce, one of the formulators, discusses the background for this venture:

The ideas underlying the Special Navajo Program were formulated during World War II. Broad social-economic studies had established, in considerable detail, the magnitude of the Navaho plight--extreme poverty, malnutrition, sickness and high mortality. Illiteracy was nearly universal. Lack of acculturation to modern living was indescribable. It was a vicious circle. With an estimated 24,000 children of school age (6 to 18), no schools were available for nearly three-fourths of the Navaho children. The relatively limited school capacity was only partially filled and irregularly attended, partly due to lack of roads and to cultural practices of mobility of the people, as well as mistrust of the Government and no great desire or tradition for education on the part of the bulk of the Navahos.

Steps were taken, through community discussions, through the launching of a Navaho language newspaper, an adult literacy program in Navaho, presentations to the tribal council and in various other ways to help the Navaho people themselves become aware of their crucial problems. During the war, other developments moved in the same direction. The People began to make sacrifices to prevent closing of their relatively few schools. Schools and education suddenly took on new meaning. Many Navaho adults moved into war occupations and became exposed to observations of modern living. Young Navaho men traveled the world in performing military service, often writing back to urge their people to greater support of education, found lacking in their off-reservation experiences.⁴⁵

Cultural change has proceeded at amazing speed where the Navajo is concerned. Paved highways crisscross the reservation where there were

⁴⁵Boyce, op. cit., p. 1.

ruted dirt roads only two or six or ten years ago. The tribe has increased in wealth and power and in self determination; progress exacts its toll from those who do not or cannot change fast enough.

Here the story stops because it is here, at the present time, that the relevance of this study must be made known: Is the Navajo student, now standing in the gale force of the winds of change, sufficiently adaptable to meet the challenge he faces?

It was during our American Revolutionary War that Thomas Paine wrote, "These are the times that try men's souls," but those words could also apply to our time.

Earlier in this chapter, Victor was quoted as saying that ". . . the American Indian has already contributed much and can continue to play an important role in building foundations for understanding minority peoples around the world."⁴⁶

As a model for understanding other minority people, let us note that the Navajo is in the vanguard of those societies which are radically changing their way of life at their own wish. Goode introduces us to the world view of rapid social change:

We are now in the midst of a world revolution. This is a unique event: for the first time in world history, a common set of forces is changing radically the quality of living among the three billion people who inhabit this planet.

The driving force of the radical transformation is this: for the first time the peoples of the world have become afflicted with a disturbing wish to change and improve their economic position; to become industrialized.

The still deeper wish, the root and wellspring from which the transmuting force comes, is a vision, expectation, and demand that freedom of choice be no longer denied. This

⁴⁶Victor, loc. cit.

is the real revolution. . . . People prefer to work for wages, since money permits them to make their own purchase choices. . . . This revolutionary doctrine claims that a man may rise if he wishes.⁴⁷

All this can be said of the Navajo student's goals. It is not an easy time in which to live, but the Navajo is in tune with the times.

⁴⁷William J. Goode, The Family as an Element in the World Revolution, a speech given at the Institute of Life Insurance Annual Meeting on Dec. 11, 1962 (sent out in pamphlet form), pp. 10-11.

CHAPTER II
REVIEW OF RELATED LITERATURE

Anthropological insights into cultural change

The Navajo student attending Intermountain School has already met and dealt with some conflicts between the culture into which he was born and his prospects for living upon graduation from the school. He and his teachers would do well to learn how to better deal with these conflicts. Anthropologists have contributed to the layman's understanding of culture by formulating the shared symbolic determinants of behavior. The symbolic or cognitive systems presumed to influence customary behavior of the members of any society and the elements (cultural units, shared habits, or customs) which comprise them are:

1. Technology:techniques;
2. Ethnoscience:beliefs; and
3. Ethics:values.¹

Further discussion of each of these units will be helpful.

Techniques. A technique is a recipe for action; it does not imply moral compunction. A technique should be distinguished from a skill [which is] on the behavioral rather than on the cognitive level. A technique is something that is or can be stated in the language of the society in which it exists; a deviation from a technique would be recognized immediately. Recognition and definition of techniques and their transmission to the next generation is one of the most important aspects of the process of socialization.²

¹John W. M. Whiting and Beatrice B. Whiting, "Contributions of Anthropology to the Methods of Studying Child Rearing," In Paul H. Mussen, Handbook of Research Methods in Child Development (New York: John Wiley and Sons, Inc., 1960) p. 918.

²Ibid.

Since techniques do not involve the issue of "goodness or badness," it follows they are a unit which can be readily accepted and adopted from another culture.

Beliefs. Belief, the second major type of custom, may be defined as a statement of the relationship between events. [For example] greenheaded flies bite, the east wind brings rain, sinners will suffer in hell. . . . Whether or not they are true is irrelevant. This set of beliefs is the second major aspect of the culture that must be transmitted to the children of the new generation.

Values. A value may be defined as a statement that attributes goodness or badness to any event. All of the values held by the members of a given society . . . comprise the ethical system of that culture. Transmission of values to children is generally held to be one of the most important duties of a parent and the one most difficult to accomplish.³

It is generally believed that techniques, since their results are obvious, may be readily abandoned if found unsuccessful, but beliefs and values which are further removed from objective fact and are often un-
verbalized are more persistent and resist change. To sum up: "Culture thus provides a cognitive map or blueprint, which governs the action of the members of every society, and the transmission of the blueprint [to the] child [is necessary if he is] to be an adult who can operate effectively in his society."⁴

Goode may be cited, though the analogy is not exactly parallel, to show that people are sometimes misled by believing that techniques are the bulwark of a culture and they, therefore, fail in attempts at change which seemed deceptively simple.

³Ibid.

⁴Ibid.

Indeed, as a sociologist, I would point out the tragic irony of the undeveloped nations has been that their leaders believe our secret lies in our machines and money, whereas in fact, it is in our social institutions. It is easy to see the machines; the institutions are more subtle, and are difficult to observe and to copy. They believe that if they can have the machines, they can achieve the freedom they seek without additional guidance or knowledge. Unfortunately, very likely the facts are exactly opposite. It was the ideas and the social system of the West, and more particularly of the Puritans, that made possible our great wealth.⁵

Implications of the "Marginal Man Concept" for acculturation and adaptability of Navajo students

Lorimer provides a good introduction to the topic of marginality. Some authorities indicate that it is normal and good for change to take place over a period of several generations; some express the opinion that making the change quickly lessens the stress.

A different problem is presented by "marginal" groups who find themselves torn between two cultural worlds. These part-Indians constitute a majority of the human beings whose lives are shaped by the influence of Indian heritage and repercussions of European civilization on this heritage. To insist on extending special patronage to them, in order to expiate the guilt of our conquering forebearers, may in some cases, merely result in further injury. We must learn to meet the real needs of these groups without either conventional insistence that they be modern Americans or a romantic insistence that they be authentic Indians.⁶

Moore defines a marginal group as one "in which there has been considerable mixture of different cultures, so that attitudes and values and resultant behavior patterns are characteristic of neither; the group

⁵William J. Goode, The Family as an Element in the World Revolution, a speech given at the Institute of Life Insurance annual meeting on Dec. 11, 1962 (sent out in pamphlet form), p. 12.

⁶Frank Lorimer, "Observations on the Trend of Indian Population in the United States," In Oliver LaFarge (ed.), The Changing Indian (Norman: University of Oklahoma Press, 1942), p. 17.

occupying a sort of social no-man's land."⁷ Moore continues: "Most marginal persons are marginal to two or more groups, as is true of partially assimilated immigrants."⁸ Antonovsky has analyzed the factors (a shortened list is included here) present in producing marginality.

1. Two cultures, or sub-cultures, are in lasting contact.
2. One is dominant in terms of power and reward potential. Of the two, this is the non-marginal culture. Its members are not particularly attracted to, or influenced by, the marginal culture.
3. The boundaries between the two are sufficiently permeable for the members of the marginal culture to internalize the patterns of the dominant culture as well as their own.
4. The patterns of values between the divergent cultures cannot, in their entirety, be easily harmonized.
5. Having acquired some of the goals of the dominant culture, members of the marginal group are pulled by the promise of greater rewards offered.
6. The barriers between the two tend to be hardened by discrimination from the one side, and by pressure against "betrayal" from the other side.
7. Marginality acquires particular intensity when the clash persists through more than one generation.⁹

Actually, the Navajo must acculturate in this day and age if he is to survive economically. It has become impossible to continue living in isolation and furthermore, many Navajos have "become afflicted with a wish to change,"¹⁰ as Goode has said. There remain those who reject

⁷Harry Estill Moore (ed.), Dictionary of Sociology, Henry Pratt Fairchild, (Ames, Iowa: Littlefield, Adams, and Co., 1957), p. 134, as quoted in Miles V. Zintz, Director, Indian Research Study, Final Report, Section I, 1957-60, (College of Education, Univ. of New Mexico, Albuquerque, mimeographed report), p. 69.

⁸Ibid.

⁹Aaron Antonovsky, "Toward a Refinement of the Marginal Man Concept," Social Forces, 35 (October, 1956), 57-62, p. 57, as quoted in Zintz, loc. cit., p. 70.

¹⁰Goode, The Family as an Element in the World Revolution, loc. cit., p. 10.

the dominant culture either because they have had bad experiences with it or because they prefer the "old ways."

Zintz discusses four levels of acculturation which can be observed.

. . . Within each group one finds a few who are entirely bi-cultural and who live equally as acceptably in one culture as another; there are a few who have rejected their traditional culture and who attempt to live entirely as having accepted all Anglo values; there are those in transition who attempt to live confidently in the traditional culture but who are accepting many of the artifacts and the need for the money economy of the dominant culture; and there are those who continue to reject the intruding Anglo culture and retain the "old ways."¹¹

Spindler and Spindler report an example of successful adaptation on the part of Menominee Indians which has a bearing on this study.

The Spindlers did a study . . . of Menominee Indians with four distinct levels of acculturation. . . . The Menominee situation provided a group of Indians who had attained occupational and status positions equivalent to those of high status in the nearby white towns. This was due to the presence of a Menominee-owned and managed lumber industry. The modal psychological structure exhibited by a sample of the men in this elite group departed dramatically from that exhibited in native-oriented and culturally transitional levels. It constitutes a psychological transformation, a reformulation of personality in successful adaptation to the demands of status achievement, punctuality, and the linkage of work and success appropriate to the middle-class American value system. This suggests that significant changes do occur when the barriers to achievement on the white man's terms are broken down, and the new adaptation thereby becomes rewarding rather than punitive.¹²

In Chapter I, page 3, the author referred to Mead's discussion of the contributions of Ruth Benedict, "as her knowledge of different

¹¹Zintz, loc. cit., p. 60.

¹²George D. Spindler, and Louise S. Spindler, "American Indian Personality Types and their Socio-cultural Roots," The Annals of the American Academy of Political and Social Sciences, 311 (May, 1957).

cultures grew, so her initial sense that the individual was the creature of culture changed to a detailed consideration of where and in what ways men could shape their culture closer to their highest vision."¹³

In the United States, the path to full acculturation is confusing and frustrating, and an ultimate ceiling is still firmly clamped down by our persisting Anglo-American "racial" attitudes. Instead of proceeding generation by generation along a continuum to full acculturation, it is as if an American-Indian group must at some point leap across a spark gap to achieve a fully integrated position in white American society.¹⁴

Vogt seems to deplore the need for Indians to "leap the gap," but this is an individual's prerogative in shaping his own destiny. The literature seems to indicate that in these times of change the Navajo student has the choice of leaping the gap or becoming a "Marginal Man" but an Intermountain School student seemed to believe that a bridge spanned the gap and that it was only necessary to walk firmly on that bridge to either side:

Yesterday our life was a joyful one;
 We toiled happily among nature-created monoliths.
 Tomorrow we must bundle our possessions
 And go toward the sounds emerging from a land afar.
 My dream says this sound is coming
 From the monolithic cities.
 Today we go to school and gain knowledge.
 This knowledge is the bridge which joins the past and the future.¹⁵

--Samuel Walker,
 Class of 1964

¹³Margaret Mead, In a new preface to Ruth Benedict, *Patterns of Culture* (New York: Mentor Books, 1959), p. v.

¹⁴Evon Z. Vogt, "The Acculturation of American Indians," *The Annals of the American Academy of Political and Social Sciences*, 311 (May, 1957) p. 145.

¹⁵Samuel Walker, untitled poem on the end sheet of *The Sandpainter*, Intermountain School Annual, 1964.

CHAPTER III

METHODS AND PROCEDURE OF OBTAINING AND
EVALUATING THE DATAFramework for the study

This study provides a structural framework for appraising the personality characteristics of Navajo students. It does so by dividing personality traits into three categories and by selecting a specific example of each for observation and study. These are:

1. Response tendencies. These are represented by acceptance or rejection of 141 foods by Navajo students at Intermountain School during the school year of 1962-63.

This is the only index of adaptability being statistically analyzed in this thesis.

The data on acceptance and rejection of foods are further broken down to indicate differences between response tendencies of Navajo students in the fifth, eighth, and eleventh grades.

2. Motives. Adaptability has been isolated as a necessary trait for Navajo students to possess during a time of rapid cultural change. It is included here in order to show how food acceptance and rejection rates give one indication of the degree to which the trait of adaptability exists among Navajo students.

3. Stimulus characteristics. Popularity with his peers has been selected by the author as a fruitful area for study. Although many studies and numerous articles exist on the acceptance of Navajos by members or groups of the dominant American culture, the author is not aware of any which deal with this factor on the part of fellow Navajos. Because

this is unplowed ground, the author would caution against assuming too much from the limited data included in this study--in the form of scatter diagrams.

The chief value the author sees in including items two and three is that they do merit further attention.

The author's justification for selecting this framework may be substantiated by citing Bronfenbrenner and Ricciuti:

The conceptual framework we have employed for the analysis and classification of personality characteristics is by no means new; rather it is a synthesis gleaned from a variety of sources. . . . the term "personality characteristic" is used to refer to a wide range of properties of a person. These diverse uses have one feature in common; underlying all is some kind of dispositional construct . . . more precisely, a personality characteristic implies a tendency toward behavior associated with a particular person under a given set of conditions. Most commonly, this behavioral tendency refers to a disposition to act on the part of S, the person himself.¹

The above statement applies particularly to the first two types of personality traits. Bronfenbrenner and Ricciuti note a third type of personality characteristic--the tendency to evoke responses in others. "We also wish to consider as a personality characteristic any tendency of S to evoke a particular response in others under a given set of conditions."²

A further clarification of each type of personality trait is helpful since this study, and others which may result from it, is based on the premise that this structure will permit a very thorough classification of the personality characteristics of Navajo students.

¹Bronfenbrenner and Ricciuti, op. cit., p. 771.

²Ibid.

Response tendencies.

Here it is the specific behavior elicited that is relatively invariant. Every time the response tendency is activated, the person tends to do exactly the same thing. There is no modification of response in order to achieve a particular goal or end-state. . . . The crucial criterion for a response tendency, then, is not whether the behavior is adaptive or non-adaptive (it may be either), but whether the particular behavior evoked tends to be the same under similar stimulus conditions.³

The author places student acceptance or rejection of specific foods in the category of a response tendency. The present study is limited in scope to proving by the application of statistical tests that greater student acceptance of foods of various types exists than can possibly be attributed to chance. This study includes a detailed listing of foods individually and by groups, and, by using each of the 5th, 8th, and 11th grades as independent variables, aims to identify trends toward change at different levels of maturity.

Motives. The second type of personality characteristic to be considered would include adaptability. In this respect, this paper can serve only as a beginning study. Citing Bronfenbrenner and Ricciuti,

With motives, it is the goal or end-state that is invariant rather than a specific mode of response; the person may resort to a variety of actions to achieve the goal.

In the case of motives, then, the specific behavior manifested constitutes an instrumental act that may vary markedly from one situation to the next. A motive, therefore, cannot be inferred from a single piece of behavior, since both response tendencies and motives may lead to the same specific act. . . . When we begin to look at specific techniques, the readiness to assume motives where only response tendencies are actually present is particularly common.⁴

Stimulus characteristics. Not all authorities agree on this characteristic because it deals not with the subject's actions, but with

³Ibid., pp. 771-772.

⁴Ibid., p. 772.

his attributes which stimulate others to act. Bronfenbrenner and Ricciuti are rather insistent that stimulus characteristics be retained as a type of personality trait.

We nevertheless wish to retain the concept of stimulus characteristics in our analysis for three reasons. First, a number of widely used techniques of personality assessment measure primarily not attributes of S but the effect of these attributes on others (for example, sociometric indices of acceptability). Second, there is a theoretical argument: Much of human behavior, being social in character, implies reciprocal expectation and response. When, for example, we describe a child as influential or irritating, we are referring, not merely to characteristics of S, but also to the response that S is likely to evoke from others. The principal basis for wishing to maintain the distinction, however, is methodological, since the failure to differentiate between S's own behavioral tendencies and the responses that he elicits from others can contribute to ambiguity and error in present-day procedures for the appraisal of personality characteristics.⁵

Popularity is the stimulus characteristic being appraised in this study. This study identifies two facets of popularity: the strength of social response of his peers to him personally; and the value placed on his friendship by his peers. (Note tables A-F, pp. 39-44; questionnaires in the Appendix.)

The appraisal of popularity with his peers on the part of the Navajo student is included in this thesis only in an exploratory state. The data are included descriptively and in scatter diagrams. No attempt is made to analyze or evaluate these data statistically.

Gathering the data

Most of the data was gathered from two questionnaires given to 5th, 8th, and 11th grade students during the 1962-63 school year. These

⁵Ibid.

classes were chosen because the 5th grade included students early in their boarding school experience (minimum age for Intermountain School students is 12 because Brigham City is located approximately 600 miles from the reservation--too far away for the young child to visit home and parents). The 8th graders were about mid-way through their schooling, and the 11th graders were almost finished. Also, these groups represented the three regular academic departments: elementary; junior high; and senior high.

The department head of the elementary department⁶ selected one high, one middle, and one low class group to represent the ability spread for fifth grade. A total of 95 fifth-graders filled out questionnaires. Eighteen of the fifth-grade participants were rejected because items were left unanswered or because they were absent when one of the two questionnaires was given. Seventy-seven fifth graders are, therefore, included in the study.

The department head of the junior high department selected one high, one medium, and one low group in the eighth grade. A total of 79 eighth graders participated. Eight were rejected due to absence or failure to complete all items on the questionnaires. Seventy-one eighth graders are included in the study.

The eleventh grade class was quite small that year. Intermountain High School received accreditation by the Northwestern Association of Secondary and Higher Schools during the 1962-63 school year. The backlog of non-English speaking over-age youth who had utilized the terminal

⁶Note: During the 1962-63 school year, there were four academic departments at Intermountain School: three on the 6-3-3 school organization plan plus a special department for over-age students at elementary achievement levels. The 8-4 plan was adopted for the 1964-65 school year and continues in practice.

five, six, and eight-year Special Navajo Programs were just beginning to be replaced by students with more extensive academic training as a result of massive emergency educational efforts launched by Congress and the Bureau of Indian Affairs during the mid-fifties.⁷ The entire eleventh grade group of 56 filled out the questionnaires. Four participants were absent for one of the two questionnaires and were, therefore, rejected. Fifty-two eleventh graders are included in the study.

The study involved the filling out of two questionnaires.⁸ All student participants at one grade level came with their academic teachers to the Employees Recreation Building (Building 81) on the Intermountain School campus on October 12, 1962. The author administered and collected the first questionnaire. One hour was allowed for each group to complete the questionnaire. The second questionnaire was administered by the individual teachers in their academic classrooms during February, 1963. The total group, less rejects, included 200 Navajo students. A check of questionnaires and the student roster indicated that students representing all areas of the Navajo Reservation were included. The Intermountain School student roster was also utilized for checking some responses where objectivity was required. The student folders in the registrar's office were checked to find reading scores which were studied to be sure that a range in ability existed for each group.

⁷Cleo K. Sumter. "An Historical Study of the Special Program for Navajos at Intermountain School" (unpublished Master's thesis, State University of Kansas, 1960), pp. 6-61.

⁸See the appendix for samples of the questionnaires.

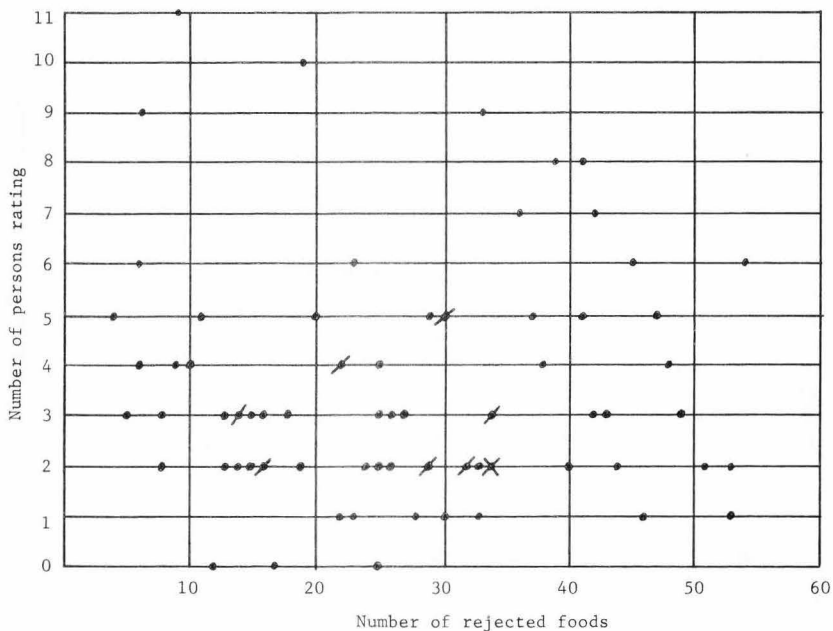
Limiting the data

The three personality characteristics: food preferences (response tendency), adaptability (a motivational personality trait), and popularity (a stimulus characteristic) were selected for the frame of reference to be used in evaluating the data for this study.

Food preferences were then selected to be studied in depth. Chapter IV will present the data and statistical analysis of it. Acceptance of a wide variety of the 141 foods to be rated will be considered as one indication of adaptability on the part of Navajo students.

The author originally intended to prepare a regression analysis comparing popularity with food preferences. As a preliminary measure, scatter diagrams were made using two factors of popularity: (1) the number of students rating the participant (each student could rate four students, but many did not write down the negative choices; and (2) mean sociometric score (each participant was given a score of "4" for "who would be your first choice as a friend?", a score of "3" for "who would be your second choice as a friend?", a score of "1" for "who would you definitely not want to be your friend?", and a score of "2" for "who would you next least want for a friend?" These scores were then added and the total was divided by the total number of students rating him.) Students received as many as 11 ratings and the full possible range of mean sociometric scores--from 1-4. No student rejected more than 60 of the 141 foods, so--since it involved working with smaller numbers--these two factors were compared with the number of foods rejected. The scatter diagrams follow. Tables A, B, and C compare strength of social response with the number of foods rejected; tables D, E, and F compare the mean sociometric score with the number of foods rejected.

Table A. Strength of social response compared to food rejection, 5th grade (77 students).



• shows the point where

/ two students with the same number of persons rating them and the same number of foods rejected.

X three students with the same rating and food rejection.

Table B. Strength of social response compared to food rejection, 8th grade (71 students)

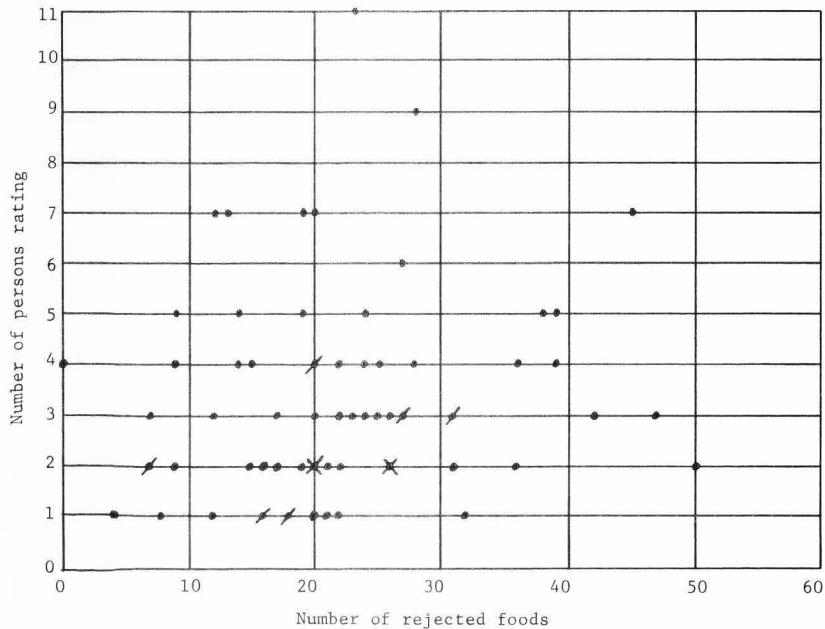


Table C. Strength of social response compared to food rejection, 11th grade (52 students)

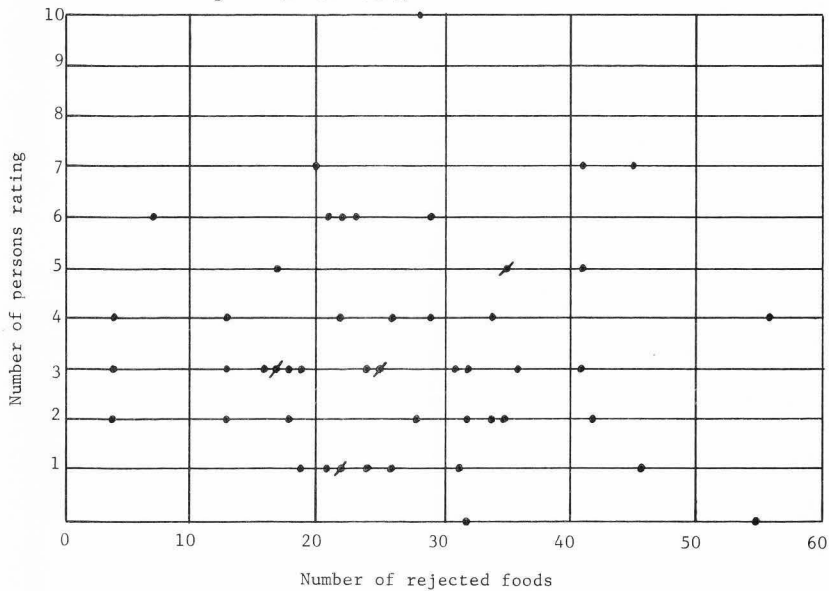


Table D. Mean sociometric score compared to food rejection, 5th grade
(77 students)

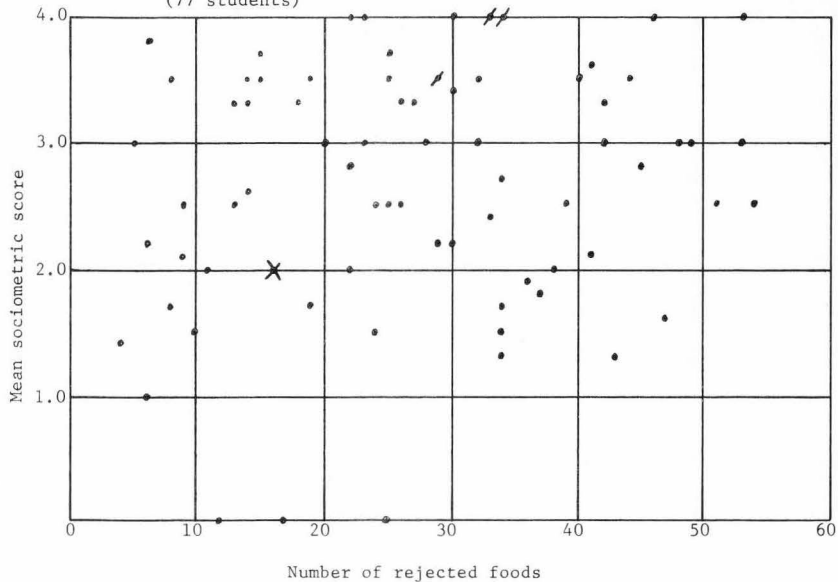


Table E. Mean sociometric score compared to food rejection, 8th grade
(71 students)

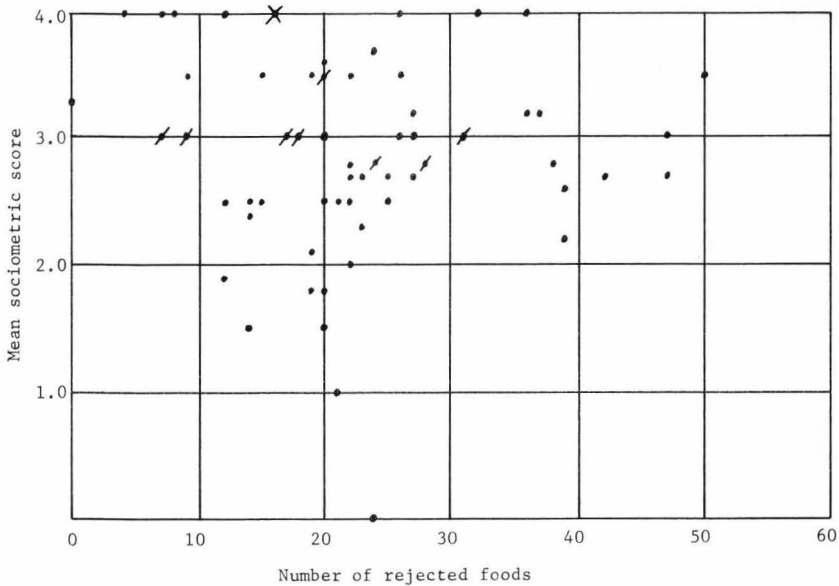
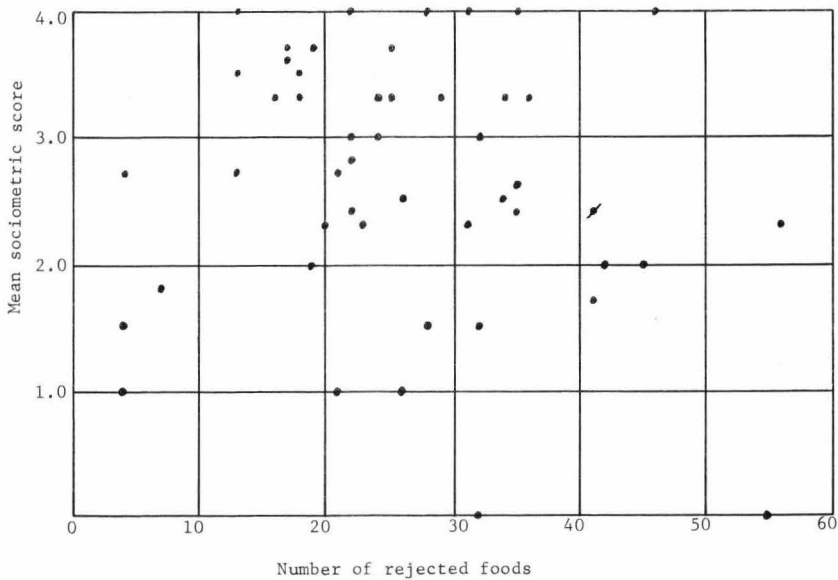


Table F. Mean sociometric score compared to food rejection, 11th grade (52 students)



Since the preliminary plotting of scatter diagrams indicated no apparent pattern or relationship, further tests on this material were abandoned. The scatter diagrams are included here as substantiation that a one-to-one direct relationship does not exist.

Procedures used in analyzing the data

The statistical evaluation of the data collected in this survey for this study will be considered in two respects. First, there will be an arrangement where a degree of food acceptance is considered. An outright acceptance of "fair," "very good," or "favorite" will comprise the "acceptance classification; all others ("don't like" or "don't know") will be considered as "rejection." These two classifications will form a 2 x t contingency table where χ^2 test is used to test the null hypothesis.

The null hypothesis for this study is: There are no differences in the true proportions of acceptance of each food.

Cochran and Cox discuss:

Statistical Analysis with Data Arranged in Two Classes. In many completely randomized experiments, the data are not measured on a continuous scale, but are merely classified into two classes, e.g., "success" or "failure" ["acceptance" or "rejection" in this study]. In this event the statistical analysis is carried out by the standard χ^2 tests for a 2 x t contingency table.⁹

This will be evaluated more expeditiously by the Brandt and Snedecor equivalent formula, which is

$$\chi^2 = \frac{\sum A_i P_i - \bar{p} \sum (A_i)}{p \bar{q}}$$

⁹William G. Cochran and Gertrude M. Cox, Experimental Design, 2nd ed. (New York: John Wiley and Sons, 1950, 1957), p. 103.

where A_i is the number of people rejecting the i th food; P_i is the proportion of people rejecting the i th food selection; \bar{p} is the overall proportion of people rejecting the food in all i categories; and \bar{q} is $1 - \bar{p}$.

Method of estimation

No basic assumptions can be put forth about the underlying distribution for this problem. The approach is one in which the minimum assumptions are made. In this respect, the sample survey size cannot be strictly based upon a refinement of a previous study whereby an approach to a more precise measure of the distribution functional parameters is desired. Therefore, it is necessary to borrow from Cochran:

The preference in sample survey theory has been to make limited assumptions about this frequency distribution (that it is very skew or rather symmetrical) and to leave its specific functional form out of the discussion. This attitude is a reasonable one for handling surveys in which the type of distribution may change from one item to another and we do not wish to stop and examine all of them before deciding how to make each estimate.¹⁰

¹⁰William G. Cochran, Sampling Techniques, 2nd ed. (New York and London: John Wiley and Sons, 1953, 1963), p. 154.

CHAPTER IV
ANALYSIS OF THE DATA

Introduction to the tables

First, the findings of the survey are reported in tables which list food acceptance and rejection for each food item by food groups according to grade level. The total food acceptance and rejection for each food item is then obtained. Then the gross data tabulations are analyzed to determine the proportion of foods (A_i in the tables) to determine if there are any differences in the food rejection within each category. The hypothesis tested in each case is: "There are no differences in the true proportion of foods rejected in the group."

Food rejection will be evaluated by the Brandt and Snedecor equivalent formula which is:

$$\chi^2 = \frac{\sum A_i P_i - \bar{p} \sum (A_i)}{\bar{p} \bar{q}}$$

d.f. = one less degree of freedom than the total number in each sample

$$R = 1/200 = .005$$

Normally, a 2 x t contingency table would be placed horizontally. Since this makes the i ths (food items) difficult to read, the tables have been prepared vertically for greater clarity and to prevent unnecessary coding.

Presentation of the tables

Acceptance includes "fair," "very good," or "favorite," as checked on the questionnaire (see appendix); rejection includes "don't like" and "don't know."

Set I, Table 1A: Beverages, listing of student acceptance and rejection of 11 beverages by 5th, 8th, and 11th graders, and totals

Food items:	1*	2√	3*	4√	5*	6*
	Cocoa	Coffee	Cola drink	Malt	Milk	Milk shake
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th grade (77)	71 6	49 28	73 4	54 23	73 4	66 11
8th grade (71)	66 5	57 14	71 0	43 28	70 1	68 3
11th grade (52)	47 5	48 4	48 4	47 5	52 0	52 0
TOTAL (200)	184 16	154 46	192 8	144 56	195 5	186 14

Food items:	7*	8√	9*	10√	11√
	Orange juice	Root beer	Soda pop	Tea	Tomato juice
	+ 0	+ 0	+ 0	+ 0	+ 0
5th grade (77)	76 1	69 8	71 6	68 9	48 29
8th grade (71)	70 1	64 7	70 1	62 9	51 20
11th grade (52)	51 1	43 9	49 3	43 9	36 16
TOTAL (200)	197 3	176 24	190 10	173 27	135 65

*6 out of 11 beverages receive more than 90% acceptance.

√5 out of 11 beverages receive more than 50% but less than 90% acceptance.

Set I, Table 1B. Beverages, χ^2 test of significance for total rejection of 11 beverages

Food items	Total	A_i	P_i	$A_i P_i$
1. Cocoa	200	16	.080	1.280
2. Coffee		48	.230	10.580
3. Cola drink		8	.040	.320
4. Malt		56	.280	15.680
5. Milk		5	.025	.125
6. Milk shake		14	.070	.980
7. Orange juice		3	.015	.045
8. Root beer		24	.120	2.880
9. Soda pop		10	.050	.500
10. Tea		27	.135	3.645
11. Tomato juice		65	.325	21.125
TOTALS	2200	274		57.160

$$H_0: P_1 = P_2 = \dots = P_{11}$$

$$\bar{p} = \frac{274}{2200} = .124545$$

$$\bar{q} = .875455$$

$$(\bar{p})(\bar{q}) = .109034$$

$$\chi^2 = \frac{57.160 - 34.125}{.109034} = \frac{23035}{.109034} = 211.264$$

$$d.f. = 10$$

$\chi^2_{.01;10} = 23.2$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 2A. Breads, listing of student acceptance and rejection of 13 breads by students in the 5th, 8th, and 11th grades, and totals

Food items:	1* Bakery bread	2* Biscuits	3* Buns	4√ Corn bread	5* Doughnuts	6* Fry bread	7√ Tortillas
5th (77)	+ 0 74 3	+ 0 72 5	+ 0 72 5	+ 0 59 18	+ 0 72 5	+ 0 76 1	+ 0 53 24
8th (71)	67 4	68 3	68 3	57 14	71 0	71 0	66 5
11th (52)	51 1	48 4	49 3	18 34	49 3	50 2	46 6
TOTAL (200)	192 8	188 12	189 11	134 66	192 8	197 3	165 35

Food items:	8* Pancakes	9* Rolls	10√ Soda crackers	11* Toast	12√ Waffles	13√ Wholewheat bread
5th (77)	+ 0 74 3	+ 0 68 9	+ 0 69 8	+ 0 75 2	+ 0 22 55	+ 0 62 15
8th (71)	71 0	67 4	61 10	70 1	50 21	62 9
11th (52)	51 1	51 1	45 7	52 0	52 2	41 11
TOTAL (200)	196 4	186 14	175 25	197 3	122 78	165 35

*8 items out of 13 breads receive more than 90% acceptance.

√5 items out of 13 breads receive more than 50% acceptance but less than 90% acceptance.

Set I, Table 2B. Breads, χ^2 test of significance for total rejection of 13 breads

Food items	Total	A_i	P_i	$A_i P_i$
1. Bakery bread	200	8	.040	.320
2. Biscuits		12	.060	.720
3. Buns		11	.055	.605
4. Corn bread		66	.330	21.780
5. Doughnuts		8	.040	.320
6. Fry bread		3	.015	.045
7. Tortillas		35	.175	6.125
8. Pancakes		4	.020	.080
9. Rolls		14	.070	.980
10. Soda crackers		25	.125	3.125
11. Toast		3	.015	.045
12. Waffles		78	.390	30.420
13. Whole wheat bread		<u>35</u>	.175	<u>6.125</u>
TOTALS	2600	302	70.690	

$$H_0: P_1 = P_2 = \dots = P_{13}$$

$$\bar{p} = \frac{302}{2600} = .11615$$

$$\bar{q} = .88385$$

$$(\bar{p})(\bar{q}) = .102659$$

$$\chi^2 = \frac{70.690 - 35.077}{.102659} = \frac{35.613}{.102659} = 346.906$$

$$d.f. = 12$$

$\chi^2_{.01;12} = 28.3$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 3A. Cereals, listing of student acceptance and rejection of 8 cereals by 5th, 8th, and 11th grades, and totals*

Food items:	1 Cold cereal	2 Corn meal mush	3 Farina	4 Macaroni	5 Noodles	6 Oatmeal	7 Pinto beans	8 Rice
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	69 8	52 25	53 24	52 25	44 33	66 11	51 26	67 10
8th (71)	64 7	52 19	44 27	55 16	56 15	64 7	55 16	61 10
11th (52)	45 7	35 17	27 25	37 15	44 8	31 21	23 29	31 21
TOTAL (200)	178 22	139 61	124 76	144 56	144 56	161 39	129 71	159 41

*All 8 cereals receive more than 50% acceptance but less than 90% acceptance.

Set I, Table 3B. Cereals, χ^2 test of significance for total rejection of 8 cereals

Food items	Total	A_i	P_i	$A_i P_i$
1. Cold cereal	200	22	.110	2.420
2. Corn meal mush		61	.305	18.605
3. Farina		76	.380	28.880
4. Macaroni		56	.280	15.680
5. Noodles		56	.280	15.680
6. Oatmeal		39	.195	7.605
7. Pinto beans		71	.355	25.205
8. Rice		41	.205	8.405
TOTALS	1600	422		122.480

$$H_0: P_1 = P_2 = \dots = P_8$$

$$\bar{p} = \frac{422}{1600} = .26375$$

$$(\bar{p})(\bar{q}) = .194186$$

$$\bar{q} = .73625$$

$$\chi^2 = \frac{122.480 - 111.302}{.194186} = \frac{11.178}{.194186} = 57.564$$

$$d.f. = 7$$

$\chi^2_{.01;7} = 18.5$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 4A. Fruits, listing of student acceptance and rejection of 19 fruits by 5th, 8th, and 11th grades, and totals

Food items:	1*	2*	3*	4*	5*	6 \checkmark	7*	8*	9*
	Apples	Apricots	Bananas	Cantaloupe	Cherries	Cran-berries	Grape-fruit	Grapes	Oranges
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	76 1	73 4	77 0	69 8	72 5	63 14	71 6	75 2	76 1
8th (71)	71 0	71 0	71 0	71 0	69 2	67 4	65 6	71 0	67 4
11th (52)	52 0	49 3	51 1	52 0	49 3	43 9	50 2	51 1	50 2
TOTAL (200)	199 1	193 7	199 1	192 8	190 10	173 27	186 14	197 3	193 7

Food items:	10*	11*	12*	13*	14 \checkmark	15 \checkmark	16*	17 \checkmark	18*	19*
	Peaches	Pears	Pineapple	Plums	Pomegr-nate	Prunes	Raisins	Rasp-berries	Straw-berries	Watermelon
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	77 0	76 1	76 1	69 8	59 18	54 23	70 7	66 11	77 0	77 0
8th (71)	71 0	70 1	69 2	69 2	57 14	58 13	65 6	61 10	68 3	71 0
11th (52)	51 1	50 2	50 2	45 7	40 12	39 13	49 3	43 9	45 7	51 1
TOTAL (200)	199 1	196 4	195 5	183 17	156 44	151 49	184 16	170 30	190 10	199 1

*15 items out of 19 fruits receive more than 90% acceptance.

\checkmark 4 items out of 19 fruits receive more than 50% but less than 90% acceptance.

Set I, Table 4B. Fruits, χ^2 test of significance for total rejection of 19 fruits

Food items	Total	A_i	P_i	$A_i P_i$
1. Apples	200	1	.005	.005
2. Apricots		7	.035	.245
3. Bananas		1	.005	.005
4. Canteloupe		8	.040	.320
5. Cherries		10	.050	.500
6. Cranberries		27	.135	3.645
7. Grapefruit		14	.070	.980
8. Grapes		3	.015	.045
9. Oranges		7	.035	.245
10. Peaches		1	.005	.005
11. Pears		4	.020	.080
12. Pineapple		5	.025	.125
13. Plums		17	.085	1.445
14. Pomegranates		44	.220	9.680
15. Prunes		49	.245	12.005
16. Raisins		16	.080	1.280
17. Raspberries		50	.150	4.500
18. Strawberries		10	.050	.500
19. Watermelon		1	.005	.005
TOTAL	3800	255		55.615

$$H_0: P_1 = P_2 = \dots = P_{19}$$

$$\bar{p} = \frac{255}{3800} = .067105$$

$$(\bar{p})(\bar{q}) = .062602$$

$$\bar{q} = .932895$$

$$\chi^2 = \frac{35.615 - 17.112}{.062602} = \frac{18.503}{.062602} = 295.566$$

$$d.f. = 18$$

$\chi^2_{.01;18} = 34.8$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 5A. Meats and main dishes, listing of student acceptance and rejection of 34 meats and main dishes by 5th, 8th, and 11th graders, and totals

Food items:	1*	2*	3*	4√	5√	6*	7*	8*	9√
	Bacon	Bologna	Beef roast	Broiled T-bone steak	Cheese	Chicken	Chicken fried steak	Chili con carne	Chop suey
5th (77)	+ 0 72 5	+ 0 74 3	+ 0 66 11	+ 0 56 21	+ 0 67 10	+ 0 73 4	+ 0 73 4	+ 0 67 10	+ 0 28 49
8th (71)	70 1	68 3	67 4	52 9	66 5	69 2	71 0	68 3	45 26
11th (52)	48 4	48 4	49 3	52 0	44 8	50 2	49 3	51 1	37 15
TOTAL (200)	190 10	190 10	182 18	170 30	177 23	192 8	193 7	186 14	110 90

Food items:	10†	11*	12√	13√	14*	15*	16*	17*	18†
	Crab	Eggs	Frank-furters	Gravy	Ham	Hamburger	Hot dogs	Lamb chops	Liver
5th (77)	+ 0 29 48	+ 0 76 1	+ 0 55 22	+ 0 67 10	+ 0 69 8	+ 0 76 1	+ 0 76 1	+ 0 61 16	+ 0 38 39
8th (71)	21 50	71 0	54 17	64 7	70 1	71 0	71 0	69 2	32 39
11th (52)	20 32	50 2	43 9	46 6	46 6	52 0	50 2	51 1	19 33
TOTAL (200)	70 130	197 3	152 48	177 23	185 15	199 1	197 3	181 19	89 111

Set I, Table 5A continued.

Food items:	19*	20*	21√	22+	23*	24√	25√	26√
	Lunchmeat	Meat loaf	Navajo stew	Oysters	Pork chops	Pizza	Roast mutton	Roast pork
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	74 3	64 13	77 0	25 52	75 2	23 54	59 18	60 17
8th (71)	70 1	71 0	71 0	17 54	70 1	42 29	68 3	68 3
11th (52)	49 3	45 7	21 31	16 36	50 2	41 11	50 2	49 3
TOTAL (200)	193 7	180 20	169 31	58 142	195 5	106 94	177 23	177 23

Food items:	27√	28+	29√	30√	31√	32√	33*	34*
	Salmon	Shrimp	Smothered steak	Tamales	Trout	Tuna	Turkey	Vienna sausage
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	48 29	35 42	54 23	54 23	38 39	64 31	76 1	74 3
8th (71)	41 30	21 50	57 14	67 4	37 34	46 25	70 1	69 2
11th (52)	33 19	27 25	49 3	47 5	30 22	35 17	49 3	44 8
TOTAL (200)	122 78	83 117	160 40	168 32	105 95	127 73	195 5	187 13

*16 items out of 34 meats and main dishes received 90% or more acceptance.

√14 items out of 34 meats and main dishes received more than 50% acceptance but less than 90% acceptance.

+4 items out of 34 meats and main dishes received less than 50% acceptance.

Set I, Table 5B. Meats and main dishes, χ^2 test of significance for total rejection of 34 meats and main dishes

Food items	Total	A_i	P_i	$A_i P_i$
1. Bacon	200	10	.050	.500
2. Bologna		10	.050	.500
3. Beef roast		18	.090	1.620
4. Broiled T-bone steak		30	.150	4.500
5. Cheese		23	.115	2.645
6. Chicken		8	.040	.320
7. Chicken fried steak		7	.035	.245
8. Chili con carne		14	.070	.980
9. Chop suey		90	.450	40.500
10. Crab		130	.650	84.500
11. Eggs		3	.015	.045
12. Frankfurters		48	.240	11.520
13. Gravy		23	.115	2.645
14. Ham		15	.075	1.125
15. Hamburger		1	.005	.005
16. Hot dogs		3	.015	.045
17. Lamb chops		19	.095	1.805
18. Liver		111	.555	61.605
19. Luncheon		7	.035	.245
20. Meat loaf		20	.100	2.000
21. Navajo stew		31	.155	4.805
22. Oysters		142	.710	100.820
23. Pork chops		5	.025	.125
24. Pizza		94	.470	44.180
25. Roast mutton		23	.115	2.645
26. Roast pork		23	.115	2.645
27. Salmon		78	.390	30.420
28. Shrimp		117	.585	68.445
29. Smothered steak		40	.200	8.000
30. Tamales		32	.160	5.120
31. Trout		95	.475	45.125
32. Tuna		73	.365	26.645
33. Turkey		5	.025	.125
34. Vienna sausage		13	.065	.845
TOTALS	6800	1361		557.295

$$H_0: P_1 = P_2 = \dots = P_{34}$$

$$\bar{p} = \frac{1361}{6800} = .200147$$

$$\bar{q} = .799853$$

$$(\bar{p})(\bar{q}) = .160088$$

$$\chi^2 = \frac{557.295 - 272.400}{.160088} = \frac{284.895}{.160088} = 1,779.615 \quad \text{d.f.} = 33$$

$\chi^2_{.01;33} = 54.8$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 6A. Spreads, listing of student acceptance and rejection of spreads by 5th, 8th, and 11th graders and totals

Food items:	1√ Butter	2* Honey	3* Jam	4* Jelly	5√ Marmalade	6√ Mayonnaise	7* Peanut butter	8* Sandwich spread
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	64 13	72 5	72 5	73 4	51 26	59 18	74 3	75 2
8th (71)	69 2	69 2	70 1	69 2	33 38	44 22	71 0	71 0
11th (52)	44 8	45 7	38 14	45 7	20 32	41 11	49 3	51 1
TOTAL (200)	117 23	186 14	180 20	187 13	104 96	149 51	194 6	197 3

*5 items out of 8 spreads received 90% or more acceptance

√3 items out of 8 spreads received more than 50% acceptance but less than 90% acceptance.

Set I, Table 6B. Spreads, χ^2 test of significance for total rejection of 8 spreads

Food items	Total	A_i	P_i	$A_i P_i$
1. Butter	200	23	.115	2.645
2. Honey		14	.070	.980
3. Jam		20	.100	2.000
4. Jelly		13	.065	.845
5. Marmalade		96	.480	46.080
6. Mayonnaise		51	.255	13.005
7. Peanut butter		6	.030	.180
8. Sandwich spread		3	.015	.045
TOTALS	1600	226		65.780

$$H_0: P_1 = P_2 = \dots = P_8$$

$$\bar{p} = \frac{226}{1600} = .14125$$

$$\bar{q} = .85875$$

$$(\bar{p})(\bar{q}) = .12130$$

$$\chi^2 = \frac{65.780 - 31.922}{.12130} = \frac{33.858}{.12130} = 279.126$$

$$d.f. = 7$$

$$\chi^2_{.01;7} = 18.5$$

The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 7A. Miscellaneous food items; others, listing of student acceptance and rejection of 8 miscellaneous food items (others) by 5th, 8th, and 11th grades, and totals

Food items:	1* Chewing gum	2√ Mushrooms	3* Peanuts	4√ Pickles	5√ Pimento	6* Pinon nuts	7√ Ripe olives	8√ Stuffed green olives
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	74 3	55 22	76 1	60 10	57 20	75 2	41 50	41 36
8th (71)	68 3	43 28	71 0	65 6	33 38	70 1	42 29	41 30
11th (52)	47 5	26 26	49 3	47 5	29 23	50 2	37 15	33 19
TOTAL (200)	189 11	124 76	196 4	178 21	119 81	195 5	126 74	115 85

*3 items out of 8 miscellaneous food items received more than 90% acceptance.

√5 items out of 8 miscellaneous food items received more than 50% acceptance but less than 90% acceptance.

Set I, Table 7B. Miscellaneous food items, others; χ^2 test of significance for total rejection of 8 miscellaneous food items (others)

Food items	Total	A_i	P_i	$A_i P_i$
1. Chewing gum	200	11	.055	.605
2. Mushrooms		76	.380	28.880
3. Peanuts		4	.020	.080
4. Pickles		21	.105	2.205
5. Pimento		81	.405	32.805
6. Pinon nuts		5	.025	.125
7. Ripe olives		74	.370	27.380
8. Stuffed green olives		85	.425	36.125
TOTALS	1600	357		128.205

$$H_0: P_1 = P_2 = \dots = P_8$$

$$\bar{p} = \frac{357}{1600} = .223125$$

$$(\bar{p})(\bar{q}) = .17334$$

$$\bar{q} = .776875$$

$$\chi^2 = \frac{128.205 - 79.656}{.17334} = \frac{48.549}{.17334} = 280.080$$

$$d.f. = 7$$

$\chi^2_{.01;7} = 18.5$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 8A. Sweets, listing of student acceptance and rejection of 18 desserts and confections (sweets) by 5th, 8th, and 11th grades, and totals

Food Items:	1*	2*	3*	4√	5*	6*	7*	8*	9*
	Candy bars	Caramels	Cherry chocolates	Cheese cake	Chocolate cake	Cookies	Fruit cake	Fruit pies	Ice cream
5th (77)	+ 0 73 4	+ 0 68 9	+ 0 74 3	+ 0 60 17	+ 0 76 1	+ 0 76 1	+ 0 73 4	+ 0 77 0	+ 0 77 0
8th (71)	71 0	67 4	67 4	53 18	70 1	71 0	71 0	71 0	71 0
11th (52)	49 3	47 5	43 9	31 21	51 1	49 3	50 2	50 2	50 2
TOTAL (200)	193 7	182 18	184 16	144 56	197 3	196 4	194 6	198 2	198 2

Food items:	10√	11*	12√	13*	14√	15√	16√	17√	18√
	Indian pudding	Jello with fruit	Lemon meringue pie	Pumpkin pie	Rice pudding	Spice cake	Taffy	Tapioca pudding	Yellow cake
5th (77)	+ 0 58 19	+ 0 65 12	+ 0 62 15	+ 0 73 4	+ 0 49 28	+ 0 61 16	+ 0 64 13	+ 0 57 20	+ 0 70 7
8th (71)	54 17	68 3	66 5	71 0	53 18	61 10	65 6	51 20	67 4
11th (52)	30 22	49 3	42 10	52 0	23 29	39 13	36 16	26 26	41 11
TOTAL (200)	142 58	182 18	170 30	196 4	125 75	161 39	165 35	134 66	178 22

*10 items out of 18 sweets received more than 90% acceptance.

√8 items out of 18 sweets received more than 50% acceptance but less than 90% acceptance.

Set I, Table 8B. Sweets, χ^2 test of significance for total rejection of 18 desserts and confections (sweets)

Food items	Total	A_i	P_i	$A_i P_i$
1. Candy bars	200	7	.035	.245
2. Caramels		18	.090	1.620
3. Cherry chocolates		16	.080	1.280
4. Cheese cake		56	.280	15.680
5. Chocolate cake		3	.015	.045
6. Cookies		4	.020	.080
7. Fruit cake		6	.030	.180
8. Fruit pies		2	.010	.020
9. Ice cream		2	.010	.020
10. Indian pudding		58	.290	16.820
11. Jello with fruit		18	.090	1.620
12. Lemon meringue pie		30	.150	4.500
13. Pumpkin pie		4	.020	.080
14. Rice pudding		75	.375	28.125
15. Spice cake		39	.195	7.605
16. Taffy		35	.175	6.125
17. Tapioca pudding		66	.330	21.780
18. Yellow cake		22	.110	2.420
TOTALS	3600	461		108.245

$$H_0: P_1 = P_2 = \dots = P_{18}$$

$$\bar{p} = \frac{461}{3600} = .128056$$

$$\bar{q} = .871944$$

$$(\bar{p})(\bar{q}) = .111658$$

$$\chi^2 = \frac{108.245 - 59.034}{.111658} = \frac{49.211}{.111658} = 440.730$$

$$d.f. = 17$$

$\chi^2_{.01;17} = 33.4$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set I, Table 9A. Vegetables, listing of student acceptance and rejection of 22 vegetables by 5th, 8th, and 11th grades, and totals

Food items:	1+ Asparagus	2+ Avacado	3/ Beets	4+ Broccoli	5/ Brussels sprouts	6/ Cabbage	7* Carrots
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	21 56	26 51	53 24	31 46	34 43	71 6	75 2
8th (71)	36 35	31 40	49 22	28 43	45 26	65 6	69 2
11th (52)	31 21	35 17	34 18	29 23	27 25	38 14	49 3
TOTAL (200)	88 112	92 108	136 64	88 112	106 94	174 26	193 7

Food items:	8/ Cauliflower	9/ Celery	10* Corn	11+ Eggplant	12/ Green beans	13/ Hominy	14* Lettuce
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	44 33	60 17	76 1	43 34	66 11	44 33	69 8
8th (71)	37 34	69 12	70 1	21 50	66 5	55 16	66 5
11th (52)	29 23	47 5	52 0	27 25	46 6	36 16	52 0
TOTAL (200)	110 90	165 34	198 2	91 109	178 22	135 65	187 13

Food items:	15+ Okra	16/ Onions	17+ Parsley	18/ Peas	19* Potatoes	20/ Spinach	21/ Squash	22* Tomatoes
	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0
5th (77)	36 41	57 20	36 41	61 16	75 2	67 10	65 12	72 5
8th (71)	12 59	31 40	35 36	66 5	69 2	64 7	56 15	68 3
11th (52)	18 34	14 38	23 29	46 6	52 0	47 5	38 14	52 0
TOTAL (200)	66 134	102 98	94 106	173 27	196 4	178 22	159 41	192 8

*5 items out of 22 vegetables received more than 90% acceptance.

✓11 items out of 22 vegetables received more than 50% acceptance but less than 90% acceptance.

+6 items out of 22 vegetables received less than 50% acceptance.

Set I, Table 9B. Vegetables, χ^2 test of significance for total rejection of 22 vegetables

Food items	Total	A_i	P_i	$A_i P_i$
1. Asparagus	200	112	.560	62.720
2. Avacado		108	.540	58.320
3. Beets		64	.320	20.480
4. Broccoli		112	.560	62.720
5. Brussels sprouts		94	.470	44.180
6. Cabbage		26	.130	3.380
7. Carrots		7	.035	.245
8. Cauliflower		90	.450	40.500
9. Celery		34	.170	5.780
10. Corn		2	.010	.020
11. Eggplant		109	.545	59.405
12. Green beans		22	.110	2.420
13. Hominy		65	.325	21.125
14. Lettuce		13	.065	.845
15. Okra		134	.670	89.780
16. Onion		98	.490	48.020
17. Parsley		106	.530	56.180
18. Peas		27	.135	3.645
19. Potatoes		4	.020	.080
20. Spinach		22	.110	2.420
21. Squash		41	.205	8.405
22. Tomatoes		8	.040	.320
TOTALS	4400	1298		590.990

$$H_0: P_1 = P_2 = \dots = P_{22}$$

$$\bar{p} = \frac{1298}{4400} = .295$$

$$\bar{q} = .705$$

$$(\bar{p})(\bar{q}) = .207975$$

$$\chi^2 = \frac{590.990 - 382.910}{.208} = \frac{208.080}{.208} = 1000.384$$

$$d.f. = 21$$

$\chi^2_{.01;21} = 38.9$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set II, Table 1. Listing of totals of acceptance, rejection, choices of nine food groups by all 200 students

Table	1	2	3	4	5	6	7	8	9
Food group	Beverages	Breads	Cereals	Fruits	Meats/main dishes	Spreads	Others	Sweets	Vegetables
Total acceptance	1926	2298	11788	3545	5439	1574	1243	3139	3084
Total rejection	274	302	422	255	1361	226	357	461	1311
Total choices	2200	2600	1600	3800	6800	1600	1600	3600	4400

Set II, Table 2. χ^2 tests of significance for totals of acceptance and rejection of nine food groups by all 200 students

Table	Total	A_i	P_i	$A_i P_i$
1. Beverages	2200	274	.12455	34.12670
2. Breads	2600	302	.11615	35.0770
3. Cereals	1600	422	.26375	111.30250
4. Fruits	3800	255	.06711	17.11305
5. Meats/main dish	6800	1361	.20015	272.4400
6. Spreads	1600	226	.14125	31.9220
7. Others	1600	357	.223125	79.6560
8. Sweets	3600	461	.12806	59.03566
9. Vegetables	<u>4400</u>	<u>1311</u>	.29795	<u>390.61245</u>
TOTALS	28200	4969		1031.28536

$$H_0: P_1 = P_2 = \dots = P_9$$

$$\bar{p} = \frac{4696}{28,200} = .176206$$

$$(\bar{p})(\bar{q}) = .145157$$

$$\bar{q} = .823794$$

$$\chi^2 = \frac{1,031.28536 - 875.56761}{.145157} = \frac{155.71775}{.145157}$$

$$d.f. = 8$$

$\chi^2_{.01;8} = 20.1$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set III, Table 1. Listing of totals of acceptance and rejection of nine food groups by grade level: 5th grade (77 students), 8th (71 students), 11th (52 students), and totals

Tables	1		2		3		4		5	
Food groups	Beverages		Breads		Cereals		Fruits		Meats/ main dishes	
5th	+ 0		+ 0		+ 0		+ 0		+ 0	
	718	129	848	153	454	162	1355	110	2005	613
8th	692	89	849	74	451	117	1282	67	1994	420
11th	516	56	601	75	273	143	910	78	1440	328
TOTAL	1926	274	2298	302	1178	422	3545	255	5439	1361

Tables	6		7		8		9	
Food groups	Spreads		Others		Sweets		Vegetables	
5th	+ 0		+ 0		+ 0		+ 0	
	540	76	492	124	1213	173	1172	522
8th	501	67	433	135	1168	110	1098	464
11th	333	83	318	98	758	178	822	322
TOTAL	1374	226	1243	357	3139	461	3082	1311

Set III, Table 2. χ^2 test of significance for totals of acceptance and rejection of nine food groups by seventy-seven 5th grade students

Table	Total	A_i	P_i	$A_i P_i$
1. Beverages	847	129	.152302	19.646958
2. Breads	1001	153	.152847	23.385591
3. Cereals	616	162	.262987	42.603894
4. Fruits	1465	110	.07085	8.259350
5. Meats/main dish	2618	613	.234148	143.532724
6. Spreads	616	76	.123377	9.376652
7. Others	616	124	.20130	24.961200
8. Sweets	1386	173	.124820	21.593860
9. Vegetables	<u>1694</u>	<u>522</u>	.308145	<u>160.852212</u>
TOTALS	10859	2062		454.212441

$$H_0: P_1 = P_2 = \dots = P_9$$

$$\bar{p} = \frac{2062}{10,859} = .189889$$

$$(\bar{p})(\bar{q}) = .15383$$

$$\bar{q} = .81011$$

$$\chi^2 = \frac{454.212441 - 391.551118}{.15383} = \frac{62.661323}{.15383} = 407.341$$

$$d.f. = 8$$

$\chi^2_{.01;8} = 20.1$ The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set III, Table 3. χ^2 test of significance for totals of acceptance and rejection by seventy-one 8th grade students

Table	Total	A_i	P_i	$A_i P_i$
1. Beverages	781	89	.113956	10.142084
2. Breads	923	74	.080173	5.932802
3. Cereals	568	117	.205986	24.100362
4. Fruits	1349	67	.049666	3.327622
5. Meats/main dish	2414	420	.173985	73.073700
6. Spreads	568	67	.114334	7.660378
7. Others	568	135	.237676	32.086260
8. Sweets	1346	110	.081724	8.989640
9. Vegetables	<u>1562</u>	<u>464</u>	.297055	<u>137.833520</u>
TOTALS	10079	1543		303.146368

$$H_0: P_1 = P_2 = \dots = P_9$$

$$\bar{p} = \frac{1543}{10,079} = .153091$$

$$\bar{q} = .846909$$

$$(\bar{p})(\bar{q}) = .129654$$

$$\chi^2 = \frac{303.146368 - 236.219413}{.129654} = \frac{66.926955}{.129654} = 516.197$$

$$d.f. = 8$$

$$\chi^2_{.01;8} = 20.1$$

The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Set III, Table 4. χ^2 test of significance for totals of acceptance and rejection by fifty-two 11th grade students

Table	Total	A_i	P_i	$A_i P_i$
1. Beverages	572	56	.097902	5.482512
2. Breads	676	75	.110947	8.321025
3. Cereals	416	143	.343750	49.156250
4. Fruits	988	78	.078947	6.157866
5. Meats/main dish	1768	328	.185520	60.850560
6. Spreads	416	83	.199519	16.560077
7. Others	416	98	.235577	23.086546
8. Sweets	936	178	.190171	33.850438
9. Vegetables	<u>1144</u>	<u>322</u>	.281469	<u>90.633018</u>
TOTALS	7332	1361		294.098292

$$H_0: P_1 = P_2 = \dots = P_9$$

$$\bar{p} = \frac{1361}{7332} = .185625$$

$$\bar{q} = .814375$$

$$(\bar{p})(\bar{q}) = .151168$$

$$\chi^2 = \frac{294.098292 - 252.635625}{.151168} = \frac{41.462667}{.151168} = 274.282037$$

$$\text{d.f.} = 8$$

$$\chi^2_{.01;8} = 20.1$$

The calculated χ^2 is greater than the tabulated χ^2 at the 1% level. Therefore, the null hypothesis is rejected.

Summary of the tables

Since the null hypothesis (there are no differences in the true proportions of acceptance of each food) was rejected in every case, there is evidence that strong food preferences are being exhibited. It seems safe to say that these 5th, 8th, and 11th grade students all accept a much wider variety of foods than those included in the native Navajo diet and that this acceptance results partly from exposure to new foods in boarding school dining rooms.

In general, foods from the native diet¹ continue to rank high which is an indication that new food preferences are "adding to" rather than "replacing" food preferences of early childhood. A number of items show strong differences between acceptance rated at different grade levels. These generally show greater acceptance with maturation and increased opportunity for exposure to new foods.

The strong food preferences exhibited by Intermountain School students in this study may be an indication of the individual Navajo student's adaptability, but to prove or disprove this association will require additional research.

This study has shown student food likes and dislikes. It has shown the persistence of taboos against fish and seafoods. On the other hand, this study has shown the strong acceptance of turkey, which was once considered taboo² but is strongly associated with holidays in the boarding school situation.

Most students liked the foods presented in the 141 food items list. Fruits ranked highest among the nine food groups.

¹Refer to comments by Ladd on native diet, Chapter I, pp. 4-6.

²Ibid.

CHAPTER V
DISCUSSION OF THE FINDINGS

Comments on implications

The comments included in this chapter are just that--these are possible explanations for the results shown in the collected data, but they reflect the author's opinions and cannot be proved.

The results are highly positive. Navajos put a strong emphasis on approval and prefer, in general, to "ignore" rather than "condemn" a thing. However, since this study considers rejection as both "don't know" and "don't like", this tendency should not affect results. This tendency to verbalize only positive feelings was reflected in Table E, page 43, in the comparison of mean sociometric score to food rejection (Chapter 3). Most of the scores are above 2.0 because many of the 8th graders refused to write down any names for "who would you definitely not want to be your friend?" Some who did not fill in that blank (worth a score of "1") did fill in "who would you next least want for a friend?" (worth a score of "2"). A number of students wrote in "I have no enemies," "I'm ashamed of you to ask such a thing," "nobody," "the Communists," etc. For some unknown reason, this was most obvious among the 8th graders.

Comments will be made on foods in three categories: (1) foods accepted by less than half of all 200 students; (2) foods accepted by more than half but less than 90 percent of the 200 students; and (3) foods accepted by 90 percent or more of all 200 student participants.

¹Note Questionnaire, p. 2 in the Appendix.

Beverages. All beverages except tomato juice and malt received better than 75 percent acceptance. Tomato juice showed about one-third rejecting it at each grade level, and a total of 65 out of 200 rejecting it. At this time there is no way of comparing this with a group in the dominant culture, but it seems a normal reaction to this item. Plans for additional research include having this questionnaire given to students in a public school; this should be helpful in showing what food preferences are unique to the Navajo. "Malt" was probably an ill-chosen item. The author intended this as a check on "milk shake" (rejected by only 14). Malts (rejected by 56) at that time sold for \$.05 more than milk shakes at the highly patronized drive-in near Intermountain School. Perhaps the extra cost increased the rejection; perhaps the term was unfamiliar. Coffee with 48 rejections shows a wide difference between grade levels (28 out of 46 rejections occur in the 5th grade, 14 in the 8th, and only 4 in the 11th grade) which seems about the same as in a group in the dominant culture. The author had not expected this much difference because coffee is part of the native diet and has been credited with saving lives. Coffee was sometimes served to babies and (because the water had been boiled) seemed to result in happier, healthier babies. Orange juice had only three rejections out of a total 200.

Breads. Corn bread (-66)², tortillas (-35), soda crackers (-25), waffles (-78) and wholewheat bread (-35) received more than 50 percent but less than 90 percent acceptance. The author knows no special reason for these results except that waffles would be unknown to many

²To simplify reporting rejection rates, they will hereafter appear in parentheses with a minus sign, (-).

younger children. Waffles show a difference by grade level (5th - 55, 8th - 21, 11th - 2). The rejection factor for waffles seems to be lack of exposure. Fry bread (-3), the mainstay of the native diet, remains a favorite food. Fry bread sales are common money-making projects on Intermountain campus. This is a food many students get homesick for. It is made of flour, salt, baking powder, and water. The dough is then kneaded in a special way till it becomes quite elastic. Then balls of dough are squeezed off and flipped rapidly between the hands till there is a thin round of dough 9 to 12 inches across. This is fried quickly in an inch or more of hot lard. It is salted and eaten hot. Fry bread is a distinctive native Navajo food which promises to remain as a favorite in their diet. Toast (-3), pancakes (-4), bakery bread (-8), and doughnuts (-8) also ranked very high.

Cereals. In general this food group ranked lower than others. Cereals, however, are not generally popular with children. Cold cereal (-22) ranked highest. "Farina" (-76) may have been a poor word choice. Although "farina" is listed to be served three times per month on the Master Menus (see Appendix), students seemed unfamiliar with it as a food. They may call it by a Navajo name and so not recognize it. Students often joke about "getting beans all the time." Pinto beans (-71) ranks next to the lowest among cereals, but still receives well over 50 percent acceptance.

Fruits. With only four exceptions the 19 fruits received more than 90 percent acceptance. Cranberries (-27), pomegranates (-44), prunes (-49), and raspberries (-30) received above 75 percent but less than 90 percent acceptance. Except for prunes, these four are not served

regularly in the dining room, so lack of exposure could account for greater rejection. Rejection of prunes seems to be a normal reaction of children. Apples, bananas, peaches, and watermelon each received only one rejection.

Meats and main dishes. Four items under meats and main dishes were rejected by more than half the students: crab (-130); liver (-111); oysters (-142); and shrimp (-117). Three of these are seafoods and would be taboo in traditional Navajo culture. (Refer to Chapter I, pp. 8-9. Explanations for this taboo can be found in Navajo myths but will not be included in this paper.) The strong rejection of liver seems to stem from a disliked menu (Note: Master Menu, 1960-61, Wednesday Menu A, Supper, and Monday Menu D, Supper) served twice a month on earlier Master Menus. On open-ended questions several students indicated extreme dislike for "mutton liver and beans." The menu had been dropped in the 1963-64 dining schedule.

Broiled T-bone steak (-30) was apparently unfamiliar to younger students and shows wide grade level differences (5th, -21; 8th, -9; 11, -0). Other meats and main dishes receiving more than 50 percent but less than 90 percent acceptance are cheese (-23), chop suey (-90), Navajo stew (-31), pizza (-94), roast mutton (-23), roast pork (-23), salmon (-78), smothered steak (-40), tamales (-32), trout (-95), tuna (-73). The author knows no special reason for the rejection rate for cheese (similar for all grade levels) and smothered steak (different for grade levels: 5th, -23; 8th, -14; 11th, -3). The method of preparation may cause the rejection rates for roasts which show strong grade level differences: roast mutton (5th, -18; 8th, -3; 11th, -2), and roast pork (5th, -17; 8th, -3; and 11th, -3). Chop suey, pizza,

and tamales are national food specialties and generally unfamiliar or "strange" even with exposure. Chop suey and tamale pie were included in the 1960-61 Master Menu but had been dropped in the Master Menu for 1963-64. Navajo stew showed total acceptance in the 5th and 8th grades, but were rejected by 31 of the 11th graders. Open-ended questions indicated a rejection of "white man's style" Navajo stew by some. Several commented that they considered the kind they got at home a favorite. ("White man's style" Navajo stew usually includes peas and other vegetables not usually available on the Navajo Reservation--the supposition being that these additions add color and nutrients.) Others indicated that "Navajo style" stew without additions seemed tasteless. It is interesting that these distinctions and reactions occur only in the 11th grade group. Salmon, trout, and tuna would all be affected by the taboo against fish mentioned earlier. Trout, in addition, would be unfamiliar since it is not served in the dining room but would be available in restaurants.

Bacon, balogna, chicken, chicken-fried steak, eggs, hamburger (-1), hot dogs, lunchmeat, pork chops, and turkey all were accepted by 190 or more and, therefore, received strong acceptance. Turkey, although a taboo food³ in the traditional culture, received only five rejections. Turkey is served only at Thanksgiving and Christmas and is given considerable publicity in local papers. Association with the holidays may cause the high acceptance of turkey despite the taboo and lack of exposure in the native diet.

Spreads. Butter (-23), marmalade (-96), and mayonnaise (-51) received more than 50 percent acceptance but less than 90 percent

³Refer to Ladd, Chapter I, pp. 8-9 of this thesis.

acceptance. Peanut butter (-6) and sandwich spread (-3) received the highest ratings. The author knows no special reasons for these results.

Miscellaneous food items. Mushrooms (-76), pickles (-21), pimento (-81), ripe olives (-74), and stuffed green olives (-85) received more than 50 percent but less than 90 percent acceptance. Of these, mushrooms are considered taboo by some--they supposedly "cause blindness" though the author does not know why unless at some time there were bad experiences with a poisonous variety. The other foods listed above are served for special occasions but are relatively unfamiliar. Peanuts (-4) and pinon nuts (-5) are ranked highest. Pinon nuts are part of the native diet and a major source of income for Navajos.

Sweets. Cheese cake (-56), Indian pudding (-58), lemon meringue pie (-30), rice pudding (-75), spice cake (-39), taffy (-35), tapioca pudding (-66), and yellow cake (-22) all received more than 50 percent but less than 90 percent acceptance. Of these, cheese cake would be unfamiliar to many. "Indian pudding" seemed to leave a question in the minds of students. It was included in the 1960-61 Master Menu but apparently did not make an impression; it had been dropped in the 1963-64 menus. The author had intended a molasses and cornmeal concoction, but this apparently represents another tribe of Indians. Candy bars (-7), chocolate cake (-3), cookies (-4), fruit cake (-6), fruit pies (-2), ice cream (-2), and pumpkin pie (-4) all received very high ratings.

Vegetables. The highly perishable nature of vegetables which makes many of them unavailable on the Navajo Reservation, plus a generally widespread rejection of vegetables by children seemed to combine to make this food group one of the least popular.

Asparagus (-112), avacado (-108), broccoli (-112), eggplant (-109), okra (-134), and parsley (-106) all received less than 50 percent acceptance. None of these were served in the dining room. The home economics department arranged to have many of their students sample these vegetables, but lack of exposure would probably account for much of the rejection rate for these foods.

Carrots (-7), corn (-2), lettuce (-13), potatoes (-4), and tomatoes (-8) rank highest among vegetables. All these except lettuce would be included in the native diet. The author has no explanation for the wide acceptance of lettuce--it was not served in the dining room at the time the questionnaires were filled out.

Summary

Students showed strong food preferences--some of which were expected. Some possible reasons for these food preferences have been suggested by the author. These comments reflect personal opinion based on observation, discussion, and reading; but they cannot be proved.

CHAPTER VI
SUMMARY AND RECOMMENDATIONS

Practical uses for these findings

These findings document the stated reactions of students at Inter-mountain School during the 1962-63 school year toward 141 specific foods. Since these students were, at that time, in the 5th, 8th, and 11th grades, there is indication of changes in preference in certain foods resulting from maturation and increased exposure to foods commonly consumed in the dominant culture.

This information should be of interest to the students themselves. Sometimes students are wont to say that "Navajos like this food; they do not like that food." These findings should make it possible for these students to see that stereotyping may be unwise where food preferences are concerned.

The findings should be of interest and help to those persons concerned with the feeding programs for Navajo students--particularly in the Bureau of Indian Affairs boarding schools. Boarding schools need to provide a homelike setting for the child, and most homes cater to family food likes as well as attempting to train children to like the foods which are available and good for them. The findings might help in avoiding waste. The same usefulness could apply to home economics programs for Navajo students.

This information may have a more theoretical value as an indicator of adaptability, but this study remains in an exploratory state where that subject is concerned. Although a relationship between popularity

with peers and food preferences was investigated, no pattern emerged-- at least not in a one-to-one relationship.

Recommendations for further research

In Chapter III the applicability of popularity as an indicator of adaptability was discussed as meriting further study. With a wider sample and more refined tools of analysis, a relationship with food preferences might indicate a better evaluation of the presence and degree of adaptability. This information should be helpful for education and evaluation of Navajo students.

Perhaps even more pertinent than this would be the establishment of preference ratios in relation to many different bases (or combinations of bases) for which data are available. These are:

Reading score--CAT, October, 1962

Sex

Age

Years of attendance at Intermountain School

Years of attendance at other schools

Number of other schools attended

Kinds of schools attended: Public, mission, federal

Home area on the reservation (was the child from an isolated area or from a place where there were frequent contacts with members of the dominant culture?)

Religious preference

Living experiences (unique situations which have affected food preferences).

Further recommendations would include the replication of this survey

at three-year intervals to see if these findings hold up over a period of time (or if these findings are results of a changing culture which has speeded up its pace of change). A longitudinal study would make the findings more stable. Also, recommended would be replication of this survey in public schools to see if children in the dominant culture would have similar food preferences and other indicators of adaptability.

All of these approaches have implications for further study of the trait of adaptability. This study has delineated the reaction of 200 Navajo students to 141 foods during the 1962-63 school year at Intermountain School, Brigham City, Utah. It has shown that students have accepted a wider variety of foods than would result by chance in view of the native diet of their early childhood. It should serve as a useful base for further analysis of student food preferences in culturally transitional groups.

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APPENDIXES

APPENDIX A
QUESTIONNAIRES

Questionnaire for research study, 1962-63

Conducted by Kathlyn L. Coffman

Grade _____

Boy ____ Girl ____

Name _____

V. OTHER				Don't know Don't like Fair Like it Favorite				Don't know Don't like Fair Like it Favorite				Don't know Don't like Fair Like it Favorite			
1. Chewing gum				9. Ice cream				7. Carrots							
2. Mushrooms				10. Indian pudding				8. Cauliflower							
3. Peanuts				11. Jello & fruit				9. Celery							
4. Pickles				12. Lemon pie				10. Corn							
5. Pimento				13. Pumpkin pie				11. Eggplant							
6. Pinon nuts				14. Rice pudding				12. Green beans							
7. Ripe olives				15. Spice cake				13. Hominy							
8. Green olives				16. Taffy				14. Lettuce							
8. SWEETS				17. Tapioca pudding				15. Okra							
1. Candy bars				18. Yellow cake				16. Onions							
2. Caramels				9. VEGETABLES				17. Parsley							
3. Cherry chocolates				1. Asparagus				18. Peas							
4. Cheese cake				2. Avacado				19. Potatoes							
5. Chocolate cake				3. Letts				20. Spinach							
6. Cookies				4. Broccoli				21. Squash							
7. Fruit cake				5. Brussels sprouts				22. Tomatoes							
8. Fruit pies				6. Cabbage											

In these four blanks write the names you would select from those within your class only who are present and are also filling out this questionnaire.

Note: This is an effort to learn who you most like and whom you least like--not whom you dislike.

1. Who is this group would be your first choice as a friend? 1. Who is this group would you definitely not want to be your friend?

2. Who would be your second choice as a friend? 2. Who would you next least want for a friend?

Be sure that you have filled in every blank to the best of your ability.

Questionnaire II for research study,
February, 1963

Conducted by Kathlyn L. Coffman

Grade _____

Boy ____ Girl ____

Name _____

Five items are listed under different situations related to food preference or food service. In the blanks provided number 1, 2, 3, 4, 5 the items you like best to those you like least.

1. You are visiting your family on the reservation or spending the summer at home.

Mutton Stew Fried bread Coffee Dried peaches	S ring beans Dry beans Fried potatoes Roast ribs Milk	Beef Indian corn Fried bread Cookies Tea	Sardines & Crackers Pork & beans Canned tomatoes/sugar Coffee	Roast mutton Squash Navajo corn bread Milk Melon
---	---	--	--	--

2. Number from 1 to 5 your preference of these menus from the Intermountain dining room.

Meat & vegetable soup Lettuce & Egg salad Bread & peanut butter Coffee cake Milk	Citrus juice Corn meal, sugar/cream Boiled eggs Wholewheat bread Peach jam Milk	Navajo stew Buttered spinach Corn bread, butter Raw apples Milk	Pork chops Buttered hominy Boiled potatoes Bread, butter Fruited jello Milk	Mutton liver/beans Perfection salad Wholewheat bread Sweet rolls Milk
--	--	---	--	---

3. You are eating at a restaurant or you have been invited by a family to their home for a meal.

Ham Sweet potatoes Broccoli Rolls, butter/jelly Ice cream Coffee or milk	Fried chicken Mashed potatoes/gravy Sliced tomatoes Peas Cherry pie Coffee or milk	Turkey & dressing Mashed potatoes/gravy Cranberry sauce Green beans Pumpkin pie Coffee, tea or milk	Grilled steak Baked potato Tossed salad French bread Cookies Coffee, milk or pop	Tuna casserole Jello salad on lettuce Carrots Rolls Cream pie Tea or milk
---	---	--	---	--

4. You are at a drive-in or short-order cafe or in a campus shop at Intermountain School

Hamburger French fries Milk shake	Soft ice-cream	Coke Peanuts	Gum	Hot dog Potato chips Malt
---	----------------	-----------------	-----	---------------------------------

5. You can choose the ways of serving food you prefer.

Cafeteria Service You pass through a line and someone serves your food onto a tray or onto a plate and side dishes.	English Family Style You are seated at a table; your host and/or hostess serve your food onto a plate which is passed to you.	American Family Style Plates and silverware are set around a table at which you are seated. Food is in bowls. Persons help themselves.	Buffet Service Plates are stacked at a table with food on it. You choose the food you want then go elsewhere to eat.	Snacking Food is wrapped, put into disposable containers, or is of a type easily eaten with the fingers.
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RESEARCH QUESTIONNAIRE

page 4

I.. Specific information on the schools you have attended is needed. Please fill out the following blanks as completely as possible.

Example: If Intermountain School is the only school you have attended you would place an "0" under "Public" and "Mission" schools and list Intermountain under "Federal" schools. If you have left a school and returned at a later date, make separate entries.

Public Schools:	Location	Began attending	Left

Mission, Private or Parochial Schools:			

Federal Schools (Include schools for children of military in foreign countries.)			

II. Have you had any interesting or unusual experiences which have influenced your food likes?

Write a paragraph telling about any experience you feel has made a big change in your food habits. Examples might be: (1) living with a family while attending school or working, (2) employment in another state or city, (3) special trips, tours, educational experiences.

APPENDIX B

MASTER MENUS FOR THE INTERMOUNTAIN SCHOOL
DINING ROOM1960-61 Master MenuSunday Menu "A"Breakfast

Oranges
All-O-Wheat, sugar
cream
Boiled eggs
Wholewheat bread,
butter
Peach jam
Milk

Dinner

Meat loaf, Chili sauce
Curried rice
Harvard beets
Bread, butter
Vanilla ice cream
Milk

Supper

Spaghetti with meat
sauce
Cole slaw
Bread, butter
Canned peaches
Ginger Cookies
Milk

Monday Menu "A"Breakfast

Stewed dried peaches
Special K, sugar,
cream
Fried bacon
Wholewheat bread,
butter
Plum jam
Milk

Dinner

Mutton, vegetable stew
Buttered cabbage
Corn bread, butter
Fruited jello
Milk

Supper

Chili con carne,
crackers
Carrot and raisin
salad
Bread, butter
Devil's food cake
Milk

Tuesday Menu "A"Breakfast

Tomato juice
Oatmeal, sugar, cream
Scrambled eggs and
bacon
Bread
Apricot jam
Milk

Dinner

Roast beef, brown gravy
Boiled potatoes
Buttered whole kernel
corn
Wholewheat bread, butter
Raw apples
Milk

Supper

Meat and vegetable
soup, crackers
Sliced cheese
Bread, peanut butter
Pineapple and cabbage
salad
Apple-raisin pie
Milk

Wednesday Menu "A"Breakfast

Citrus blend juice
Raisin bran, sugar,
cream
Bacon, country gravy,
toast
Wholewheat bread,
butter
Strawberry jam
Milk

Dinner

Boiled beef, buttered
noodles
Mashed potatoes
Buttered green beans
Bread, butter
Chocolate pudding
Milk

Supper

Mutton liver and
beans
Perfection salad
Wholewheat bread,
butter
Sweet rolls
Milk

Thursday Menu "A"Breakfast

Oranges
Farina, sugar, cream
Boiled eggs
Bread, butter
Pineapple-apricot jam
Milk

Dinner

Swiss steak, natural gravy
Oven browned potatoes
Buttered spinach
Hot rolls, butter
Raw apples
Milk

Supper

Ham salad for sandwiches
Sliced onions
Wholewheat bread, butter
Pinto beans
Orange cake
Milk

Friday Menu "A"Breakfast

Stewed apple nuggets
Sugar corn pops, cream
Scrambled eggs
Bread, butter
Peach jam
Milk

Dinner

Corn pudding
Au gratin potatoes
Buttered peas
Wholewheat bread, butter
Spice cake
Milk

Supper

Fried macaroni, sliced cheese
Tuna fish salad
Bread, butter
Orange jello
Milk

Saturday Menu "A"Breakfast

Citrus juice
Cracked wheat, sugar, cream
Beef and vegetable hash
Wholewheat bread, butter
Ham
Milk

Dinner

Baked beans
Potato and egg salad
Sliced onions
Bread, butter
Canned apricots
Oatmeal cookies
Milk

Supper

Steamed frankfurters w/mustard
Scalloped potatoes
Buttered hominy
Carrot sticks
Dinner rolls, butter
Sugared canned tomatoes
Milk

Sunday Menu "B"Breakfast

Oranges
Farina, sugar, cream
Boiled eggs
Plum jam
Bread, butter
Milk

Dinner

Roast beef, brown gravy
Oven browned potatoes
Buttered peas
Wholewheat bread, butter
Chocolate ice cream
Milk

Supper

Baked macaroni and cheese
Pineapple-cabbage salad
Bread, butter
Bing cherries, sugar cookies
Milk

Monday Menu "B"Breakfast

Citrus blend juice
Frosted wheat flakes, cream
Bacon, bacon gravy, toast
Wholewheat bread, butter
Peach jam and milk

Dinner

Steamed frankfurters
Scalloped potatoes
Buttered spinach and onions
Hot rolls, butter
Raw apples
Milk

Supper

Succotash
Sliced lunch meat
Carrot and raisin salad
Bread, butter
Pineapple cake
Milk

Tuesday Menu "B"Breakfast

Stewed dried apricots
 Rolled oats, sugar,
 cream
 Boiled eggs
 Wholewheat bread, butter
 Apricot jam
 Milk

Dinner

Chicken a la king
 Mashed potatoes
 Lyonnaise string beans
 Corn bread, butter
 Raisin custard pudding
 Milk

Supper

Tamale pie
 Lettuce and egg
 salad
 Bread, peanut butter
 Coffee cake
 Milk

Wednesday Menu "B"Breakfast

Oranges
 All-O-wheat, sugar,
 cream
 Milk toast
 Plum jam
 Milk

Dinner

Beef and noodles
 Buttered corn
 Mixed pickles
 Bread, butter
 Raw apples
 Milk

Supper

Chili beans
 Sliced onions
 Carrot sticks
 Bread, butter
 Cherry pie
 Milk

Thursday Menu "B"Breakfast

Stewed dried prunes
 Special K, sugar,
 cream
 Bacon, scrambled eggs
 Wholewheat bread, butter
 Pineapple-apricot jam
 Milk

Dinner

Pork chops
 Buttered hominy
 Creamed peas and carrots
 Bread, butter
 Fruited jello
 Milk

Supper

Italian spaghetti
 Sliced cheese
 Cole slaw
 Wholewheat bread,
 butter
 Milk
 Yellow cake

Friday Menu "B"Breakfast

Tomato juice
 Cracked wheat, sugar,
 cream
 Hashed brown potatoes
 Bread, butter
 Apricot jam
 Milk

Dinner

Salmon loaf
 Creamed potatoes
 Spanish corn
 Wholewheat bread, butter
 Raw apple
 Milk

Supper

Buttered rice
 Baked beans
 Golden glow salad
 Bread, butter
 Apple pie
 Milk

Saturday Menu "B"Breakfast

Citrus juice
 Corn meal, sugar,
 cream
 Boiled eggs
 Wholewheat bread, butter
 Peach jam
 Milk

Dinner

Navajo stew
 Buttered cabbage
 Dinner rolls, butter
 Sugared tomatoes
 Milk

Supper

Creamed ham
 Oven browned potatoes
 Sweet relish
 Wholewheat bread,
 butter
 Canned pears

Sunday Menu "C"Breakfast

Stewed prunes w/
orange slices
Raisin bran, sugar,
cream
Scrambled eggs
Bread, butter
Plum jam
Milk

Dinner

Roast mutton, gravy
French baked potatoes
Pickled beets
Wholewheat bread, butter
Strawberry ice cream
Milk

Supper

Potato salad
Sliced lunch meat
Cottage tomatoes
Bread, butter
Milk
Canned peaches,
sugar cookies

Monday Menu "C"Breakfast

Grapefruit
Rolled oats, sugar,
cream
Fried bacon
Peach jam
Milk

Dinner

Meat pies
Buttered peas
Wholewheat bread, butter
Raw apples
Milk

Supper

Macaroni and cheese
Hashed brown potatoes
Cabbage-raisin salad
Bread, butter
Orange cake
Milk

Tuesday Menu "C"Breakfast

Tomato juice
All-O-wheat, sugar,
cream
Boiled eggs
Wholewheat bread, butter
Apricot jam
Milk

Dinner

Steamed franks w/catsup
Lyonnais potatoes
Buttered string beans
Hot rolls, butter
Cherry jello
Milk

Supper

Chili con carne,
crackers
Molded salad
Bread, butter
Chocolate cake
Milk

Wednesday Menu "C"Breakfast

Oranges
Wheat pots, cream,
sugar
Bacon, bacon gravy,
toast
Bread, butter
Peach jam
Milk

Dinner

Navajo stew
Buttered spinach
Corn bread, butter
Raw apples
Milk

Supper

Meat and vegetable
soup, crackers
Buttered corn
Cabbage, onion, pickle
salad
Wholewheat bread,
butter
Pineapple pie and milk

Thursday Menu "C"Breakfast

Stewed dried peaches
Corn meal, sugar, cream
Scrambled eggs and bacon
Wholewheat bread, butter
Plum jam
Milk

Dinner

Smothered steak, gravy
Curried rice
Buttered peas and carrots
Bread, butter
Butterscotch pudding
Milk

Supper

Tamale pie
Sliced cheese
Tossed salad
Wholewheat bread,
peanut butter
Sweet rolls
Milk

Friday Menu "C"Breakfast

Oranges
 Special K, sugar,
 cream
 Boiled eggs
 Bread, butter
 Pineapple-apricot jam
 Milk

Dinner

Cheese omelet
 Buttered hominy
 Golden glow salad
 Wholewheat bread, butter
 Apples
 Milk

Supper

Spaghetti with Spanish
 sauce
 Oven browned potatoes
 Carrot and raisin salad
 Bread, butter
 Yellow cake
 Milk

Saturday Menu "C"Breakfast

Orange juice
 Farina, cream, sugar
 Meat and vegetable hash
 Wholewheat bread, butter
 Peach jam
 Milk

Dinner

Roast beef, gravy
 Boiled potatoes
 Harvard beets
 Dinner rolls, butter
 Sugared tomatoes
 Milk

Supper

Baked beans
 Cold tomatoes
 Sliced onions
 Bread, butter
 Molded jello w/pears
 Milk

Sunday Menu "D"Breakfast

Orange juice
 Corn flakes, sugar,
 cream
 Scrambled eggs,
 minced ham
 Bread, butter
 Plum jam
 Milk

Dinner

Boiled chicken, gravy
 Mashed potatoes
 Buttered whole grain
 corn
 Wholewheat bread, butter
 Green pineapple ice cream
 Milk

Supper

Macaroni and cheese
 Carrot sticks
 Mixed sweet pickles
 Bread, butter
 Canned apricots
 Coconut cookies
 Milk

Monday Menu "D"Breakfast

Apple nuggets
 All-O-wheat, sugar,
 cream
 Bacon, bacon gravy,
 toast
 Wholewheat bread, butter
 Apricot jam
 Milk

Dinner

Steamed franks
 Au gratin potatoes
 Buttered spinach with
 onion
 Hot rolls, butter
 Fruited jello
 Milk

Supper

Beans with liver
 Cold tomatoes
 Cabbage-raisin
 salad
 Cherry cake
 Wholewheat bread,
 butter
 Milk

Tuesday Menu "D"Breakfast

Oranges
 Corn meal, sugar, cream
 Boiled eggs
 Wholewheat bread, butter
 Pineapple-apricot jam
 Milk

Dinner

Roast beef, gravy
 Boiled potatoes
 Lyonnaised string beans
 Bread, butter
 Raw apples
 Milk

Supper

Chop suey w/steamed
 rice
 Perfection salad
 Wholewheat bread,
 butter
 Sweet butter rolls
 Milk

Wednesday Menu "D"Breakfast

Tomato juice
Raisin bran, sugar,
cream
Wholewheat milk toast
Bread, butter
Milk
Peach jam

Dinner

Navajo stew
Buttered cabbage
Corn bread, butter
Rice custard
Milk

Supper

Chili con carne,
crackers
Sliced onions, sweet
relish
Bread, butter
Devil's food cake
Milk

Thursday Menu "D"Breakfast

Stewed apricots and
prunes
Cracked wheat, sugar,
cream
Scrambled eggs with
bacon
Bread, butter
Plum jam
Milk

Dinner

Roast pork, apple sauce
Buttered paprika potatoes
Buttered peas
Wholewheat bread, butter
Raw apples
Milk

Supper

Spaghetti with meat
sauce
Cabbage-pineapple
salad
Bread, butter
Cherry pie
Milk

Friday Menu "D"Breakfast

Citrus juice
Rolled oats, sugar,
cream
Hashed brown potatoes
Wholewheat bread, butter
Apricot jam
Milk

Dinner

Creamed tuna over toast
Fried hominy
Buttered spinach
Bread, butter
Spice cake
Milk

Supper

Baked beans
Fried potatoes
Tossed salad
Wholewheat bread,
butter
Canned apricots
Milk

Saturday Menu "D"Breakfast

Oranges
Special K, sugar,
cream
Boiled eggs
Bread, butter
Pineapple-apricot jam
Milk

Dinner

Roast mutton, gravy
Oven browned potatoes
Buttered whole kernel
corn
Dinner rolls, butter
Raw apples
Milk

Supper

Succotash
Sliced cheese
Green salad
Wholewheat bread,
butter
Green gage plums
Fruit bars
Milk

DELIVERY CALENDAR, 1960-1961

AUGUST, 1960

	S	M	T	W	T	F	S
		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
A	21	22	23	24	25	26	27
B	28	29	30	31			

SEPTEMBER, 1960

	S	M	T	W	T	F	S
B					1	2	3
C	4	5	6	7	8	9	10
D	11	12	13	14	15	16	17
A	18	19	20	21	22	23	24
B	25	26	27	28	29	30	

OCTOBER, 1960

	S	M	T	W	T	F	S
B							1
C	2	3	4	5	6	7	8
D	9	10	11	12	13	14	15
A	16	17	18	19	20	21	22
B	23	24	25	26	27	28	29
C	30	31					

NOVEMBER, 1960

	S	M	T	W	T	F	S
C			1	2	3	4	5
D	6	7	8	9	10	11	12
A	13	14	15	16	17	18	19
B	20	21	22	23	24	25	26
C	27	28	29	30			

DECEMBER, 1960

	S	M	T	W	T	F	S
C					1	2	3
D	4	5	6	7	8	9	10
A	11	12	13	14	15	16	17
B	18	19	20	21	22	23	24
C	25	26	27	28	29	30	31

JANUARY, 1961

	S	M	T	W	T	F	S
D	1	2	3	4	5	6	7
A	8	9	10	11	12	13	14
B	15	16	17	18	19	20	21
C	22	23	24	25	26	27	28
D	29	30	31				

FEBRUARY, 1961

	S	M	T	W	T	F	S
D				1	2	3	4
A	5	6	7	8	9	10	11
B	12	13	14	15	16	17	18
C	19	20	21	22	23	24	25
D	26	27	28				

MARCH, 1961

	S	M	T	W	T	F	S
D				1	2	3	4
A	5	6	7	8	9	10	11
B	12	13	14	15	16	17	18
C	19	20	21	22	23	24	25
D	26	27	28	29	30	31	

APRIL, 1961

	S	M	T	W	T	F	S
D							1
A	2	3	4	5	6	7	8
B	9	10	11	12	13	14	15
C	16	17	18	19	20	21	22
D	23	24	25	26	27	28	29
A	30						

1962-1963 Master MenuSunday Menu "A"Breakfast

Oranges
All-O-wheat, sugar,
cream
Boiled eggs
Toast, butter
Peach jam
Milk

Dinner

Baked ham
Buttered spinach
Bread, butter
Ice cream
Cookies
Milk

Supper

Spaghetti w/meat sauce
Green beans
Perfection salad
Bread, butter
Fresh apples
Milk

Monday Menu "A"Breakfast

Stewed dried peaches
Sugar pops
Fried bacon
Whole wheat bread, butter
Plum jam
Milk

Dinner

Meat and vegetable soup
Crackers
Bread, peanut butter/
honey
Fruited jello
Milk

Supper

Roast beef/brown gravy
Mashed potatoes
Buttered peas
Cabbage pineapple salad
Bread, butter
Sweet rolls
Milk

Tuesday Menu "A"Breakfast

Tomato juice
Oatmeal, sugar, cream
Scrambled eggs
Toast, butter
Apricot jam
Milk

Dinner

Navy beans/bacon
Tossed green salad
Corn bread, butter
Chocolate pudding
Milk

Supper

Frankfurters/mustard
relish
Potato salad
Buttered carrots
Bread, butter
Apple raisin pie
Milk

Wednesday Menu "A"Breakfast

Citrus blend juice
Frosted wheat flakes
Bacon, country gravy
Toast, butter
Jam
Milk

Dinner

Boiled beef w/noodles
Buttered green beans
White bread, butter
Devil food cake, white
icing
Milk

Supper

Chili con carne,
crackers
Carrot and raisin salad
Bread, butter
Fresh apples
Milk

Thursday Menu "A"

Oranges
Farina, sugar, cream
Boiled eggs
Toast, butter
Apricot-pineapple jam
Milk

Creole burger on bun
Potato chips
Kidney bean salad (boiled
egg, celery, lettuce,
dressing)
Wheat bread, butter
Marble cake, icing
Milk

Swiss steak, natural
gravy
Buttered boiled potatoes
Buttered spinach
Hot rolls, butter
Orange juice
Milk

Friday Menu "A"Breakfast

Stewed apples
Sugared corn flakes
Scrambled eggs
Hot biscuits, butter
Peach jam
Milk

Dinner

Creamed cheese/macaroni
Tossed green salad
Bread, butter
Fresh fruit
Milk

Supper

Cold salmon
Buttered peas
Boiled potatoes
Carrot-pineapple salad
Spice cake
Milk

Saturday Menu "A"Breakfast

Orange juice
Cracked wheat, sugar,
cream
Bean and vegetable
hash
Toast, butter
Jam
Milk

Dinner

Meat loaf, chili sauce
Buttered potatoes
Whole kernel corn
Canned pears
Oatmeal cookies
Bread, butter
Milk

Supper

Baked beans
Potato and egg
salad
Canned sugared
tomatoes
Dinner rolls, butter
Milk

Sunday Menu "B"Breakfast

Orange juice
Frosted flakes
Scrambled eggs, minced
ham
Wholewheat toast, butter
Plum jam
Milk

Dinner

Ham w/Hawaiian sauce
Sweet potatoes
Cut green beans
Ice cream
Bread, butter
Milk

Supper

Mashed potatoes
Escalloped corn
Cabbage-pineapple
salad
Canned apricots
Sugar cookies
Bread, butter
Milk

Monday Menu "B"Breakfast

Stewed apple nuggets
All-O-wheat, sugar,
cream
Bacon, gravy on toast
Apricot jam
Milk

Dinner

Succotash w/ham
Tossed green salad
Chocolate pudding
Hard rolls, butter
Milk

Supper

Frankfurters, mustard
relish
Oven browned potatoes
Buttered carrots
Fruited jello
Bread, butter
Milk

Tuesday Menu "B"Breakfast

Oranges
Corn meal, sugar, cream
Boiled eggs
Toast, butter
Apricot-pineapple jam
Milk

Dinner

Soup, rice, tomato w/
noodle, crackers
Lime jello w/cottage
cheese
Pear-pineapple salad
Pineapple pie
Bread, butter
Milk

Supper

Beef stew w/fresh
vegetables
Beet salad
Rice custard pudding
Bread, butter
Milk

Wednesday Menu "B"Breakfast

Tomato juice
 Sugar pops
 Wholewheat milk toast
 Toast, butter
 Peach jam
 Milk

Dinner

Spaghetti w/meat sauce
 Buttered mixed vegetables
 Sweet pickles
 Hot buttered rolls
 Fresh apples
 Milk

Supper

Braised beef, cream
 gravy
 Boiled potatoes
 Cut green beans
 Yellow cake w/icing
 Bread, butter
 Milk

Thursday Menu "B"Breakfast

Stewed apricots and
 prunes
 Cracked wheat, cream,
 sugar
 Scrambled eggs w/bacon
 Bread, butter
 Plum jam
 Milk

Dinner

Spanish rice
 Golden glow salad
 Sweet rolls
 Wholewheat bread, butter
 Milk

Supper

Pan fried chicken
 Boiled buttered potatoes
 Creamed peas
 Canned peaches
 Bread, butter
 Milk

Friday Menu "B"Breakfast

Citrus juice
 Rolled oats, cream,
 sugar
 Hash brown potatoes
 Toast, butter
 Apricot jam
 Milk

Dinner

Soup, navy bean, w/
 diced potatoes and
 onions
 Pumpkin pudding
 Crackers
 Bread, butter
 Milk

Supper

Creamed tuna on toast
 Fried hominy
 Buttered spinach
 Buttered hot rolls
 Fresh apples
 Milk

Saturday Menu "B"Breakfast

Oranges
 Krispies
 Cocoa
 Boiled eggs
 Bread, butter
 Apricot-pineapple jam
 Milk

Dinner

Baked beans
 Tossed green salad
 Wholewheat bread, butter
 Canned apricots
 Milk

Supper

Macaroni w/cheese sauce
 Sweet mixed pickles
 Buttered corn
 Bread, butter
 Coconut cookies
 Milk

Sunday Menu "C"Breakfast

Oranges
 Farina, sugar, cream
 Boiled eggs
 Bread, butter
 Plum jam
 Milk

Dinner

Cold cuts, bologna
 Sliced cheese
 Fried potatoes
 Sweet mixed pickles
 Bread, butter
 Fresh fruit
 Milk

Supper

Beef and noodles
 String beans
 Bread, butter
 Ice cream
 Milk

Monday Menu "C"Breakfast

Blended citrus juice
 Frosted wheat flakes,
 cream
 Bacon, milk gravy, toast
 Peach jam
 Milk

Dinner

Spaghetti w/meat sauce
 White and red cabbage
 slaw
 Hot rolls, butter
 Pineapple cake
 Milk

Supper

Tenderloin tips w/
 vegetables
 Buttered spinach
 Rice custard pudding
 Bread, butter
 Milk

Tuesday Menu "C"Breakfast

Stewed apricots
 Boiled oats, sugar, cream
 Scrambled eggs w/bacon
 Bread, butter
 Apricot jam
 Milk

Dinner

Soup, vegetable, w/
 crackers
 Tossed green salad
 Bread, w/peanut butter
 Fresh fruit
 Milk

Supper

Pork leg roast w/gravy
 Sage dressing
 Apple sauce
 Lime and pear salad
 Hot rolls, butter
 Milk

Wednesday Menu "C"Breakfast

Oranges
 All-O-wheat, sugar,
 cream
 Milk toast w/butter
 Plum jam
 Milk

Dinner

Lima beans, w/ham, celery
 Onion on biscuits
 Beet salad
 Bread, butter
 Jello w/fruit cocktail
 Milk

Supper

Barbeque beef over rice
 Buttered carrots
 White cake w/sauce
 Bread, butter
 Milk

Thursday Menu "C"Breakfast

Stewed prunes
 All stars w/cream
 Boiled eggs
 Wholewheat bread, butter
 Apricot-pineapple jam
 Milk

Dinner

Navy beans w/bacon
 Carrot and raisin salad
 Bread, butter
 Fresh apples
 Milk

Supper

Irish lamb stew w/
 vegetables
 Cherry pie
 Bread, butter
 Milk

Friday Menu "C"Breakfast

Citrus juice
 Cracked wheat, sugar,
 cream
 Hash brown potatoes
 Toast, butter
 Apricot jam
 Milk

Dinner

Macaroni and tomato sauce
 Carrot and raisin salad
 Bread, butter
 Cherry short cake
 Milk

Supper

Fish patties
 Creamed potatoes
 Buttered whole kernel
 corn
 Canned pears
 Hot rolls, butter
 Milk

Saturday Menu "C"Breakfast

Tomato juice
Corn meal, sugar, cream
Boiled eggs
Bread, butter
Peach jam
Milk

Dinner

Spanish rice
Buttered green peas
Lime salad w/grape-
fruit sections
Bread, butter
Milk

Supper

Beef pot pie w/
vegetables
Canned peaches
Cookies
Bread, butter
Milk

Sunday Menu "D"Breakfast

Stewed peaches
Sugar smacks
Scrambled eggs
Bread, butter
Plum jam
Milk

Dinner

Italian spaghetti
Cole slaw
Ice cream
Bread, butter
Milk

Supper

Meat loaf
Buttered potatoes
Beet salad w/onion,
vinegar
Canned apricots
Cookies
Bread, butter
Milk

Monday Menu "D"Breakfast

Canned grapefruit
Rolled oats, sugar,
cream
Grilled bacon
Toast, butter
Peach jam
Milk

Dinner

Navy beans w/bacon,
onion
Perfection salad
Hot rolls, butter
Yellow cake
Milk

Supper

Mutton stew w/
vegetables
Rice custard pudding
Bread, butter
Milk

Tuesday Menu "D"Breakfast

Tomato juice
All-O-wheat, sugar,
cream
Boiled eggs
Wholewheat bread, butter
Apricot jam
Milk

Dinner

Soup, vegetable, w/
crackers
Cabbage pineapple salad
Bread w/peanut butter
Apple pie
Milk

Supper

Roast beef w/gravy
Boiled potatoes
Cut green beans
Bananas
Bread, butter
Milk

Wednesday Menu "D"Breakfast

Oranges
Wheat pops, cream, sugar
Cream gravy w/bacon
Toast, butter
Peach jam
Milk

Dinner

Chili con carne w/
crackers
Cabbage, onion, pickle
salad
Vanilla pudding
Hot rolls, butter
Milk

Supper

Boiled beef w/
noodles
Buttered peas
Sweet mixed pickles
Chocolate cake
Milk

Thursday Menu "D"Breakfast

Stewed prunes
 Corn meal, sugar, cream
 Scrambled eggs w/bacon
 Bread, butter
 Plum jam
 Milk

Dinner

Spanish rice
 Carrot sticks
 Plain cake w/vanilla
 sauce
 Bread, butter
 Milk

Supper

Swiss steak
 Steamed potatoes
 Fresh garden spinach
 Hot rolls, butter
 Fresh apples
 Milk

Friday Menu "D"Breakfast

Oranges
 Frosted flakes, cream
 Boiled eggs
 Toast, butter
 Apricot-pineapple jam
 Milk

Dinner

Macaroni-tuna salad
 w/peas, cheese, pimentos
 Hot buttered mixed
 vegetables
 Hot rolls, butter
 Fruited jello
 Milk

Supper

Boston baked beans
 Golden glow salad
 Bread, butter
 Ginger cake w/topping
 Milk

Saturday Menu "D"Breakfast

Orange juice
 Farina, cream, sugar
 Meat and vegetable
 hash
 Wholewheat bread, butter
 Peach jam
 Milk

Dinner

Creamed ham w/pimentos
 Boiled buttered potatoes
 Carrots w/peas
 Canned pears
 Cookies
 Bread, butter
 Milk

Supper

Steamed franks w/catsup
 Buttered hominy
 Cold sugared tomatoes
 Bread, butter
 Fresh apples
 Milk

DELIVERY CALENDAR, 1962-1963

AUGUST 1963

	S	M	T	W	T	F	S
					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
A	18	19	20	21	22	23	24
B	25	26	27	28	29	30	31

SEPTEMBER, 1963

	S	M	T	W	T	F	S
C	1	2	3	4	5	6	7
D	8	9	10	11	12	13	14
A	15	16	17	18	19	20	21
B	22	23	24	25	26	27	28
C	29	30					

OCTOBER, 1963

	S	M	T	W	T	F	S
C			1	2	3	4	5
D	6	7	8	9	10	11	12
A	13	14	15	16	17	18	19
B	20	21	22	23	24	25	26
C	27	28	29	30	31		

NOVEMBER, 1963

	S	M	T	W	T	F	S
c						1	2
D	3	4	5	6	7	8	9
A	10	11	12	13	14	15	16
B	17	18	19	20	21	22	23
C	24	25	26	27	28	29	30

DECEMBER, 1963

	S	M	T	W	T	F	S
D	1	2	3	4	5	6	7
A	8	9	10	11	12	13	14
B	15	16	17	18	19	20	21
C	22	23	24	25	26	27	28
D	29	30	31				

JANUARY, 1964

	S	M	T	W	T	F	S
D				1	2	3	4
A	5	6	7	8	9	10	11
B	12	13	14	15	16	17	18
C	19	20	21	22	23	24	25
D	26	27	28	29	30	31	

DELIVERY CALENDAR, 1962-1963

FEBRUARY, 1964

	S	M	T	W	T	F	S
D							1
A	2	3	4	5	6	7	8
B	9	10	11	12	13	14	15
C	16	17	18	19	20	21	22
D	23	24	25	26	27	28	29

MARCH, 1964

	S	M	T	W	T	F	S
A	1	2	3	4	5	6	7
B	8	9	10	11	12	13	14
C	15	16	17	18	19	20	21
D	22	23	24	25	26	27	28
A	29	30	31				

APRIL, 1964

	S	M	T	W	T	F	S
A				1	2	3	4
B	5	6	7	8	9	10	11
C	12	13	14	15	16	17	18
D	19	20	21	22	23	24	25
A	26	27	28	29	30	31	