

SELECTED RESPONSES OF FIVE INFANTS TO A
SUCCESSION OF CHILD DIRECTORS IN HOME MANAGEMENT HOUSES

by

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A THESIS

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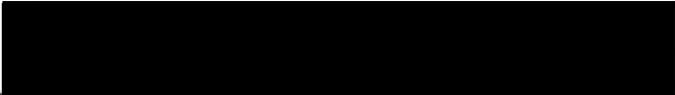
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SELECTED RESPONSES OF FIVE INFANTS TO A SUCCESSION OF CHILD DIRECTORS IN HOME MANAGEMENT HOUSES

I. STATEMENT OF PROBLEM

The problem of this study is to explore possible effects on five infants of a succession of persons caring for them in the Home Management House situation.

Some research has been done and is being continued on the problem of the effect of maternal deprivation and separation on the infant and young child. Less is known about the effect on an infant of a succession of persons caring for him or the effect of lack of continuity in care.

The responses of the infants selected for study were those contained in daily records of bowel movements and number of bottle feedings for each infant. The following questions were explored:

1. Do these five infants show different responses to child directors depending on the order in which the child directors take responsibility for child care in the group? I.e., is there a different response to the first, second, and so on, child director in each group? Differences here may indicate a response to the change of groups. Do the responses of individual infants differ here? Infants may react in different ways to changing groups.

2. Do these infants show changes in response from the first through the last day of care by individual child directors? Changes here may indicate a response to changing

individuals within a group. They may also reflect differences in individual child directors, as well as individual infant's responses.

3. What relation is there between the infants' feeding and bowel movement records while in the care of each child director? Do the records indicate greater variability in one area than the other, or do the two vary together? Individual infants may vary in the way they show reaction to change.

4. Are there differences in these five infants' responses in these respects to students who are rated by their peers as "comfortable" to be with and competent in child care or as the reverse? Is there any relation between students' ratings of each other and the infants' responses to these students? Being cared for by a succession of people may depend on who the people are.

5. Do the infants' responses differ between time spent in the Home Management House and time spent in a home during college vacation periods? The Home Management House has six or seven adults and the home only one or two. Difference in response here may reflect the difference in situations. What effect does this change in environment have on the infants' bowel movements and on feeding?

6. What individual differences are shown by the infants in these responses?

7. What is the effect of a succession of child directors over a period of time? Do responses differ with increase in chronological age and/or longer time in the Home Management House?

II. REVIEW OF LITERATURE

Workers in many disciplines today are agreed on the importance of the first year of life. One of the important factors in this first year is the relation of the infant to a mother or mother-figure who satisfies his basic needs. In addition to the physical needs of a dependent infant which must be ministered to, there are the emotional needs.

Some describe the infant's first basic emotional need as a need for affection or a feeling of security. Erikson, in his description of the Growth and Crisis of the "Healthy Personality" in an epigenetic diagram states, "For the first component of a healthy personality I nominate a sense of basic trust, which I think is an attitude toward oneself and the world derived from the experiences of the first year of life" (2, p.190). The author further states, "At any rate the psychiatrists, obstetricians, pediatricians, and anthropologists, to whom the writer feels closest, today would agree that the firm establishment of enduring patterns for the balance of basic trust over basic mistrust is the first task of the budding personality and therefore first of all a task for maternal care" (2, p.195).

Studies on the effect of maternal deprivation and separation have been compiled and reported by Bowlby in Maternal Care and Mental Health. The most impressive aspect of the many studies is that workers in different countries, often unaware of the related research

of others, have reached conclusions which confirm and support each other. "They make it plain that, when deprived of maternal care, the child's development is almost always retarded - physically, intellectually, and socially - and that symptoms of physical and mental illness may appear" (1, p.15). The author further states, "The evidence suggests that three somewhat different experiences can each produce the affectionless and psychopathic character:

(a) lack of any opportunity for forming an attachment to a mother-figure during the first three years (Powdermaker, Bender, Lowrey, Goldfarb);

(b) deprivation for a limited period - at least three months and probably more than six - during the first three or four years (Bowlby, Spitz and Wolf);

(c) changes from one mother-figure to another during the same period (Levy and others)" (1, p.47).

Although there is a growing body of research on maternal deprivation and separation, much less is known about the effect on the infant of a succession of persons caring for him. The Home Management House situation affords an opportunity to explore this area.

There have been eight Masters' theses related to this area, seven of which focus on the development and condition of Home Management House infants. Of these seven theses, the first was completed in 1928, and the last was completed in 1939.

The study by Paulus at Cornell University in 1928 compared one infant in the Home Management House to three infants in their own

homes. Physical and psychological examinations based on Gesell developmental schedules were given the infants. The Home Management House infant was ranked third of the four infants on physical condition at the beginning of the study and first of the four infants at the end of the study. He was ranked third of the four infants on the psychological examinations at all chronological ages reported.

A group of four theses was done at Iowa State College from 1929 to 1934. McLaughlin found that the four Home Management House infants "as a group excelled the groups in boarding homes and in the orphanage in every aspect that was studied" (6, p.1). These aspects included physical condition, intelligence quotient, and developmental traits suggested by Gesell in his book, Infancy and Human Growth.

Simpson compared four Home Management House infants with four infants from homes rated below average and four infants from homes rated above average. Behavior items suggested by Gesell and bi-weekly observations were used to rate the infants. The tentative conclusions drawn from the data were that the Home Management House infants as a group were slightly superior in motor development to the infants in both control groups, somewhat inferior to both of the control groups in language development and adaptive behavior, slightly superior to the children from non-professional homes in personal-social behavior and slightly inferior to the infants from professional homes in personal-social behavior.

Three Home Management House infants were studied by Prall, using diary records kept by students in the Houses and the writer,

and results from performance, physical and mental tests. The infants' development was compared with normative summaries given by Gesell and Fenton. The findings were that the three infants were either quite superior or above average in physical development; the infants were average or above in motor development and in personal-social behavior; in linguistic development and adaptive behavior, one of the infants was below average, one was average and one was above average. The writer concluded, "There were no emotional disturbances due to a rotating personnel within a group remaining six weeks in the houses - neither were there any disturbances when the group changed" (8, p.1).

Knockel compared sixteen children who had formerly been Home Management House infants and were then in foster homes with children who had entered foster homes from institutions. These children ranged in age from two years to seven years, ten months. She concluded that the Home Management House infants were more extroverted, showed some superiority in intelligence, and rated somewhat higher in physical traits.

Lyle at Oregon State College in 1939, studied three Home Management House infants, using Shirley's standards and methods supplemented with other standards. Using the records kept on the infants, Lyle found that food habits varied, but there were satisfactory gains in weight; elimination varied, but in the opinion of a physician it was normal; sleep for the most part fell between standards; weight for height ratios tended to follow the downward trend of the standard; the infants' locomotor development compared favorably

with Shirley's median; teeth eruption was delayed from one to three months in two of the three cases; vocalization was slightly in advance of Shirley's median; the infants were more social than the median tendency of Shirley's group. The infants seemed to be somewhat retarded early in the year and more advanced at the end of the year in comparison with Shirley's median scores.

Jones at Cornell in 1931 studied the guidance procedures used by eighteen practice house "mothers" with an infant, B.J. Two findings reported by Jones are: "There appeared to be little change in the social factor of B.J.'s daily situations for periods of four or five days. There was, however, a considerable variance at the time of changing student mothers and again when the six girls of one block left and six new students entered the environment. B.J. appeared to be influenced somewhat by each change in mother, and significantly by each change in a block-group" (3, p.9). "During an individual mother period, there frequently was marked improvement from the first to the last day. In the blocks, with the exception of one mother, improvement in verbal directions used was noticeable from the first through the sixth student mother. There was no evidence that this improvement continued from one block to another" (3, p.9).

Four of these theses show the Home Management House infants to be average or above average in physical health. One thesis shows the Home Management House infants exceeded boarding home infants and institution infants in every aspect studied. Two of the studies

show the Home Management House infants a little inferior to home infants in adaptive behavior and language development and about average by Gesell standards in adaptive behavior and language development. Prall of Iowa State College and Jones of Cornell University seem to contradict each other on conclusions reached about the effect of a succession of child directors on the infant. Prall concluded that "there were no emotional disturbances" (8, p. 1) with change in child directors or groups. Jones concluded that the infant was influenced somewhat by each change in mother and significantly by each change in a block group.

III. METHOD OF PROCEDURE

A. Setting

The study was carried on in the Home Management Houses at Oregon State College. At present there are two Home Management Houses at Oregon State College: Kent House and Withycombe House. Experience with an infant, as part of the Home Management House experience, has been offered at Oregon State College since 1918, probably the longest consecutive period of time for any college in the country.

Participation in the Home Management House program has been required for Home Economics students since 1926. All Home Economics students, except those who are married and maintaining a home of their own in town, live in a House usually at some time during their senior year. For this they enroll in a five-credit course, Home Administration 450. Prerequisite courses are Family Life 312: Child Development, and Home Administration 340: Management in Family Living. The group in the House is usually composed of six students who live there for half of the quarter together with a resident advisor.

Assignment of jobs in the House is done on a system of rotation. The student who is the first child director usually volunteers for that job at the time of the planning meeting. The job of child director entails full care of the infant, including the keeping of daily records, under the guidance of a resident advisor. When the child director has a class, she arranges to have another student in

the House care for the infant during her absence. A room in the Home Management House is equipped for the infant. The child director occupies an adjacent room.

During the time this study was carried on the advisor in each House was a graduate student, who had had teaching experience and was currently engaged in graduate work in Home Economics. The advisors have regular conferences with the director of the Home Management Houses to discuss problems and relationships in the Houses. The director is a full-time staff member with whom the advisors take a seminar course in their first quarter of residence. The resident advisors are in the Houses through the year and offer the infant the possibility for some type of continuous relationship with one person. During the period of the study the infants living in the Houses came from an institution in Portland, Oregon, which is a residential nursery supported in part from Community Chest funds. Two requisites for taking the infants are good physical health of the infant and parental consent that the infant be placed in the Home Management House.

The infant is given periodic physical examinations by a local pediatrician, which are recorded by the child director. In case of any illness of the infant, the child director records pertinent information on a special form for that purpose. Each child director is requested to record the infant's weight and temperature at least once during her time as child director.

During the period of this study a sociometric questionnaire was

used with each group of students at the beginning and at the end of their period of residence in the House. Two items from the questionnaire administered at the end of the period comprise the sociometric data used in this study. The items were designed to discover attitudes of students toward each other in respect to competency as child director and degree to which they felt comfortable with one another.

B. Sample

The five infants studied were in the Home Management Houses at Oregon State College during the school years of 1953-54 and 1954-55. The sample consisted of four boys and one girl in the care of 103 child directors. The infants, their ages on entering and leaving the Home Management Houses and the number of child directors caring for each were:

<u>Infant</u>	<u>Age at Entering House</u>	<u>Age at Leaving House</u>	<u>Number of Child Directors Caring for Infant</u>
Martin	7 weeks, 4 days	42 weeks, 5 days	37
Carl	7 weeks, 6 days	33 weeks, 5 days	18
Robin	6 weeks, 2 days	17 weeks, 3 days	13
Duncan	20 weeks, 6 days	36 weeks, 0 days	17
Patty	7 weeks, 2 days	21 weeks, 4 days	18

C. Daily Records on Infant

The daily records kept by each child director while the infant was in her care include the following items: time and amount of food taken; time and length of sleep; number of bowel movements; comments on day's activities, and health record, (weight, height, temperature

and others).

The two items selected as reflecting possible responses of the infants to change are the number of bowel movements and the consumption of formula or milk. The items have been considered in these ways for each infant:

- 1) Mean number of bowel movements per day.
- 2) Range in number of bowel movements per day.
- 3) Mean number of ounces of formula or milk consumed per day.
- 4) Range in number of ounces of formula or milk consumed per day.
- 5) Mean number of ounces of formula or milk consumed per feeding.
- 6) Range in number of feedings per day.

Each of these six items has been considered by periods with each individual child director, each group period, the total time in the Home Management House, and time spent in a home during college vacation periods.

The data on bowel movements was analyzed with reference to the child director's chronological position in the group, i.e., the first child director in each group, the second child director in each group, and so on. The mean was also analyzed by days with each child director, as first day with all directors, second day, and so on. The mean number of ounces per feeding was considered by individual child directors but not by chronological position of the child directors in the group.

D. Sociometric Data

Results from two of the questions in the sociometric questionnaire administered at the end of each group's residence in the Home Management House were included in this study to explore the possibility of a relation between students' ratings by their peers and the infants' response to the student as child director.

The questions used were:

Question two - "I would feel most comfortable about leaving the baby in the care of _____."

Question ten - "On leaving the House, I feel most comfortable (relaxed, like to be with) with the girls as follows: (Indicate where you would place each girl on the following scale from least-comfortable-with to most-comfortable-with)."

Results from each of these two questions were compared with each of the six responses of the infants by periods with each individual child director to determine whether or not there was a relation between sociometric data and infant responses.

IV. RESULTS

A. Case I - Martin

Martin was born on August 8, 1953, and entered Withycombe House on September 30, 1953, at the age of seven weeks and four days. At this time his weight was recorded as eleven pounds and ten ounces. Martin was examined by a local pediatrician on October 2, 1953. He remained in Withycombe House, except during college vacations, until June 3, 1954, a period of thirty-five weeks. On June 3, 1954, when he was forty-two weeks and five days of age, Martin was returned to the institution in Portland, where he is at this writing. During his stay in Withycombe House, Martin was cared for by six groups of students, or a total of thirty-seven child directors, under the supervision of one resident advisor.

1. Records of Bowel Movements

a. Mean Number of Daily Bowel Movements

Table 1. Mean Number of Daily Bowel Movements for Martin with 35 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	2.50	1.50	2.17	2.67	2.17	1.80	
F II	1.57	1.67	1.83	2.00	1.60	1.17	1.33
W I	2.67	3.33	3.67	3.33	3.00	2.33	
W II	4.00	3.83	2.67	4.17	-	-	
S I	3.00	4.40	3.00	3.00	2.80	3.17	
S II	3.20	2.67	2.60	2.33	2.80	2.20	

*F refers to Fall term, W refers to Winter term; S refers to Spring term.

The mean number of bowel movements per day during the total period Martin was in the Home Management House was 2.6. The lowest mean occurred in the Fall or first quarter. Here it was 1.8. The highest mean was in the Winter quarter when it was 3.2. During the Spring quarter it was 2.9.

The Winter quarter thus showed a higher mean and more variation than either of the other quarters.

During Christmas vacation (records kept for 15 days) the mean was 1.9, and during Spring vacation (records kept for 10 days) it was 2.4. In the vacation periods the mean was thus lower than in the quarter following the vacation period.

The mean number of daily bowel movements for the two vacation periods was 2.1 as compared with 2.6 for the period Martin was living in the Home Management House itself.

In shifting from the House to being cared for in a home there was an increase of .1 in mean above that of preceding or Fall quarter. In shifting to the House (Winter quarter) after Christmas vacation there was an increase of 1.3 in the mean. In shifting to the home at the time of Spring vacation there was a decrease in the mean of .8, and in shifting to the Home Management House (Spring quarter) an increase in mean of .5 over that during the vacation period. The figures suggest some tendency for a smaller number of bowel movements per day for Martin when he was in a home.

The mean number of daily bowel movements during the period Martin was cared for by each of the 35 child directors for whom there

are records ranged from 1.17 to 4.40. The mean of 1.17 occurred with the sixth child director in the second group of Fall term. The mean of 4.40 occurred with the second child director in the first group of Spring term.

The records kept by each child director were considered by days. The mean number of bowel movements Martin had on the first and each succeeding day with 35 child directors is presented in Table 2.

Table 2. Mean Number of Daily Bowel Movements for Martin with 35 Child Directors Considered by Days.

1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day
2.77	2.59	2.86	2.33	2.58	2.54

The lowest mean number of bowel movements per day was 2.33 on the fourth day of care by a child director. The highest mean number of bowel movements per day was 2.86 on the third day of care by a child director, with another high point on the first day (2.77). The fifth and sixth days were about the same with means of 2.58 and 2.54, respectively. The figures suggest that there may be a tendency for Martin to "settle down" in the last three days of care by each child director as indicated by number of bowel movements.

The mean number of daily bowel movements during the time Martin was in the care of each child director was tabulated by grouping the child directors according to the order in which each cared for Martin, i.e., the first child directors in all groups and each successive child director in all groups.

Table 3. Mean Number of Daily Bowel Movements for Martin with 34 Child Directors by Position as Child Director.

	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
Mean	2.89	2.90	2.66	2.92	2.47	2.13

Mean of these means is 2.66.

The lowest mean number of daily bowel movements (2.13) occurred while Martin was in the care of the child directors who came in sixth position, while the next lowest point (2.47) occurred while Martin was in the care of the child directors who came fifth. The highest mean number of daily bowel movements (2.92) occurred with the fourth child directors. The means occurring while Martin was in the care of the first and second child directors were about the same as with the fourth, being 2.89 and 2.90 respectively; while that occurring with the third child director was slightly lower, 2.66. This is the same figure as that of the average of the means for all six groups.

b. Range in Number of Bowel Movements

Table 4. Lowest and Highest Number of Daily Bowel Movements Recorded for Martin during Care by 35 Child Directors in 6 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	2-3	0-2	2-3	1-5	1-3	1-3	
F II	1-3	0-3	1-3	1-3	1-3	0-2	0-2
W I	2-3	2-4	1-5	2-5	1-5	2-3	
W II	3-6	2-5	2-4	3-5	-	-	
S I	2-4	3-5	2-4	2-4	2-3	2-4	
S II	1-5	2-3	2-4	1-3	2-3	1-3	

*F refers to Fall term; W refers to Winter term; S refers to Spring term.

Records for Martin on bowel movements were available from 35 child directors. In 2 cases the records were incomplete so could not be used. Records kept on number of bowel movements per day for Martin showed that the number ranged from 0 to 6. The range which occurred most frequently (8 times) during the period he was being cared for by an individual child director was from 1 to 3, or a range of 2. The smallest range in number of daily bowel movements during one period was between 1 and 2, or a range of 1. The greatest range was between 1 and 5, or a range of 4. This variation occurred during 4 different periods, when he was cared for by the fourth child director in the first group of Fall term, the third and fifth child directors in the first group of Winter term, and the first child director in the second group of Spring term.

Variation in number of daily bowel movements while the infant was being cared for by each of the 35 students may be summarized as follows:

	7 cases--range of 1
Mode -	20 cases--range of 2
	4 cases--range of 3
	4 cases--range of 4

Martin's characteristic pattern seems to be a variation of 2 in number of daily bowel movements during the period he was cared for by an individual child director. This range occurred 3 times in the first group of 6 students, 6 times in the second group which contained 7 students, only once in the third group of 6 students, twice in the group in which only 4 cases were used, 5 times in the fifth group with

6 students, and 3 times in the last group of 6 students. The variability does not seem to change in any consistent way with length of stay in the House, chronological age or in relation to a vacation period for Martin. The second half of Fall quarter and the first half of Spring quarter were the most consistent, one following a vacation period and one not following a vacation period (see Table 4).

A comparison was made between the range in the number of bowel movements that Martin had during the time he was in the Home Management House and during college vacation periods when he was in a home, as follows:

Lowest and Highest Number of Daily Bowel Movements Recorded
by Groups in the Home Management House and at Vacation Times.

House		Christmas	House		Spring	House	
FI	FII	(15 records)	WI	WII	(10 records)	SI	SII
0-5	0-3	1-2	1-5	2-6	2-3	2-5	1-5

The data on ranges in Martin's number of daily bowel movements during the time with each group of students covered a period of approximately $4\frac{1}{2}$ to $6\frac{1}{2}$ weeks for each group. The range in Martin's number of daily bowel movements was calculated on 15 daily records during Christmas vacation, and on 10 daily records for Spring vacation period.

The ranges were smaller during Christmas and Spring vacations when he was cared for by one person than during the periods of care by groups immediately preceding and succeeding the vacations.

Martin's range in daily number of bowel movements for Christmas and

Spring vacations was 1, which is lower than his characteristic variation of 2 with the child directors individually.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of daily bowel movements under all the first child directors, the second child directors and so on are presented in Table 5.

Table 5. Average Range in Number of Daily Bowel Movements for Martin with 34 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
2.40	2.17	2.17	2.50	2.00	1.60

The smallest average range in number of daily bowel movements was 1.60 with the sixth child directors, with another low point (2.00) occurring with the fifth child directors, based on material from 5 fifth and 5 sixth child directors. The greatest average range in number of daily bowel movements was 2.50 with the fourth child directors, with another high point, (2.40), occurring with the first child directors.

The figures may suggest a tendency for Martin to "settle down" while he was in the care of the fifth and sixth child directors as indicated by average range in daily number of bowel movements.

A comparison between the range in number of daily bowel movements and the mean number of daily bowel movements with all child

directors according to chronological position in groups shows a tendency for Martin to have the smallest range and the lowest mean with the fifth and sixth child directors.

If we can interpret a smaller mean and range in number of daily bowel movements as indicating a more established pattern, we may conclude that these figures suggest a tendency for Martin to "settle down" in the care of the fifth and sixth child directors.

In the care of the second and third child directors, Martin had the range in daily number of bowel movements (2.17), closest to the overall mean, (2.14). In the care of the third child directors, Martin had the mean daily number of bowel movements (2.66) identical with the overall mean.

In the care of the fourth child directors, Martin had both the highest mean daily number of bowel movements and the greatest range in daily number of bowel movements. There seems to be a difference in Martin's response with different child directors depending on the order in which they cared for him.

The Appendix contains a graph which gives the number of bowel movements each day for each of the five infants by chronological age in weeks and days. For Martin, there seems to be an absence of established pattern in number of bowel movements per day except for the slight trend toward a smaller range in number of bowel movements in the latter part of care by an individual child director and with the last child directors in the group.

c. Sociometric Ratings

The scores received by students on sociometric ratings described earlier were considered in relation to the bowel movement records of the infant while he was in their care. Scores on question two, "I would feel most comfortable about leaving the baby in the care of _____," indicated how the students felt about each other in the role of child director.

A comparison between scores on question two and the mean number of bowel movements per day seems to suggest little relation between the two factors.

Of the five students receiving the highest scores in their groups on question two, four were students in whose care Martin had a mean higher than the groups' means; with one student, the mean was lower than the group's mean.

Of the fourteen students receiving zero score on question two, seven were students in whose care Martin had a mean number of bowel movements above the groups' means; with six students the mean was below the groups' means, and with one, the mean was equal to the group's mean.

There seems to be no consistent relation between the range in number of bowel movements per day and the scores on question two.

Of the five child directors receiving the highest scores in their group on question two, two were students in whose care Martin had a range in number of bowel movements above the groups' average

range; with two students, the range was below the groups' average ranges, and with one, the range was equal to the group's average range.

Of the fourteen students receiving zero score on question two, six were students in whose care Martin had a range in number of bowel movements below the groups' average range; with four students, Martin had a range equal to the groups' average ranges, and with four students, the range was above the groups' average ranges.

In question ten each student was asked to rate the other students in the group in the order in which she felt comfortable with each from most comfortable to least comfortable. A comparison between scores on question ten and the mean number of bowel movements per day seemed to suggest little relation between the two factors.

Of the five students receiving the highest scores in their groups on question ten, three were students in whose care Martin had a mean number of bowel movements below the groups' means; with two students, the mean was higher than the groups' means.

Of the five students receiving the lowest scores in their groups on question ten, three were students in whose care Martin had a mean number of bowel movements above the groups' means; with two students, the mean was below the groups' means.

A comparison between scores on question ten and the range in number of bowel movements seems to show little relation between the two factors.

Of the five students receiving the highest scores in their

groups on question ten, two were students in whose care Martin had a range in number of bowel movements equal to the groups' average ranges; with two students the range was greater than the groups' average ranges, and with one student the range was smaller than the group's average range.

Of the five students receiving the lowest scores in their groups on question ten, three were students in whose care Martin had a range in number of bowel movements below the groups' average ranges; with two students the range was above the groups' average ranges.

There seems to be little relation between scores on questions two and ten and the mean or range in number of bowel movements, based on material for Martin.

2. Records of Feeding

a. Mean Number of Ounces per Day

Table 6. Mean Number of Ounces of Milk Per Day Recorded for Martin by 36 Child Directors in 6 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	-	24.2	31.3	30.4	31.8	33.0	
F II	30.0	35.0	30.3	30.4	34.75	32.17	28.70
W I	28.0	24.88	30.5	28.42	25.07	20.63	
W II	28.3	22.5	18.8	26.4	16.1	22.7	
S I	19.92	24.00	19.9	24.63	16.9	16.04	
S II	23.1	20.2	17.4	15.0	18.7	18.2	

*F refers to Fall term; W refers to Winter term; S refers to Spring term.

The mean number of ounces consumed daily by Martin during the time he was in the care of 36 child directors ranged from 15.0 to 35.0. The mean of 15.0 occurred with the fourth child director in the second group of Spring term. The mean of 35.0 occurred with the second child director in the second group of Fall term. (See Table 6)

Table 7. Mean Number of Ounces of Milk per Day Recorded for Martin by Groups in the Home Management House and at Vacation Times.

House Fall		Home Christmas (14 Records)	House Winter		Home Spring (10 Records)	House Spring	
Term	31.00	27.61	Term	24.35	28.40	Term	19.50
Group I	30.14		Group I	26.25		Group I	20.23
Group II	31.62		Group II	22.45		Group II	18.77

The mean number of ounces consumed daily by Martin during the total period spent in the Home Management House was 24.95. The lowest mean by terms (19.50) occurred in the Spring or last term. The highest mean was in the Fall term when it was 31.00. During the Winter quarter it was 24.35. These figures indicate a decreasing consumption of milk by Martin with increase in chronological age and/or longer stay in the House.

During Christmas vacation (based on 14 records) the mean was 27.61, and during Spring vacation (based on 10 records) it was 28.40. In both vacation periods, the mean number of ounces per day was thus higher than in the group and term following the vacation periods.

(See Table 7)

The mean number of ounces consumed daily by Martin during the two vacation periods was 27.94 as compared with 24.95 for the period Martin was living in the Home Management House. In respect to mean number of bowel movements per day, on the other hand, Martin had a smaller number during the vacation periods than during the total period in the Home Management House.

The mean number of ounces per day consumed by Martin during the time he was in the care of each child director was tabulated by grouping the child directors according to the order in which each cared for Martin, i.e., the first child directors in all groups and all successive child directors in all groups. The differences were small here, all means being within 2 ounces of each other.

Table 8. Mean Daily Number of Ounces of Milk Reported for Martin by 35 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
25.86	25.13	24.70	25.88	23.89	23.79

The lowest mean daily number of ounces (23.79) was consumed by Martin while he was in the care of the child directors who came in sixth position, while the highest mean number of ounces (25.88) occurred while Martin was in the care of the child directors who came fourth.

During the time Martin was in the care of the sixth child directors, he consumed the lowest mean number of ounces per day and had the lowest mean number of bowel movements. During the time Martin

was in the care of the fourth child directors, he consumed the highest mean number of ounces per day and had the highest mean number of bowel movements. This might suggest that with a decrease or an increase in milk intake, there is a corresponding decrease or increase in number of bowel movements.

A comparison of the students' ratings on question two, described earlier, and the mean number of ounces per day consumed by Martin seems to show no consistent relation. Of the five child directors receiving the highest rating in their groups on question two, three were students in whose care Martin consumed the lowest mean number of ounces per day in their groups (thus below the group average), and two were students in whose care Martin consumed the highest mean number of ounces per day in their groups, (thus above the group average). Two of the three students in whose care Martin consumed the lowest mean number of ounces per day were students in whose care he had a range in number of ounces above the average range for the respective groups.

Of the fourteen students receiving zero score on question two, eight were students in whose care Martin consumed a mean number of ounces per day below the mean for the respective groups.

Of the five child directors out of thirty-five receiving the highest scores in their groups on question ten, three were students in whose care Martin consumed a mean number of ounces above their respective group mean, while two were students with whom the mean was below the group mean.

Of the five child directors out of thirty-five receiving the lowest scores in their groups on question ten, four were students in whose care Martin consumed a mean number of ounces of milk below the respective group means.

This material on question ten suggests a possible tendency for Martin to consume a lower mean number of ounces per day, relative to the groups' means, while he was in the care of students with whom other students said they felt least comfortable.

b. Range in Number of Ounces per Day

Table 9. Range in Number of Ounces of Milk per Day Recorded for Martin by 36 Child Directors in 6 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	-	13.50	1.50	17.50	7.00	6.50	
F II	7.50	9.00	8.50	4.50	17.00	8.00	9.50
W I	14.00	10.75	20.00	6.00	7.50	22.00	
W II	12.50	9.50	11.50	9.50	10.00	15.00	
S I	9.25	19.00	12.00	30.00	5.50	14.00	
S II	17.50	15.00	13.00	10.00	9.50	9.00	

*F refers to Fall term; W refers to Winter term; S refers to Spring term.

Records on feeding were available for 36 child directors. Records kept on daily number of ounces consumed by Martin show that the number ranged from 6.0 to 42.0 ounces. The average range in number of ounces Martin consumed during the period he was cared for by all child directors was 11.75 based on records of 36 child directors. The smallest range in daily number of ounces consumed during the period he was cared for by an individual child director

was 1.5 ounces. This range occurred during the time Martin was cared for by the third child director in the first group of Fall term. The greatest range in daily number of ounces consumed during the period he was cared for by an individual child director was 30.0 ounces. This range occurred during the time Martin was cared for by the fourth child director in the first group of Spring term. The median range in number of ounces per day was 10.00.

Table 10. Average Range in Number of Ounces of Milk per Day by Groups.

Group	Fall I	Fall II	Winter I	Winter II	Spring I	Spring II
Average range	9.20	9.14	13.38	11.50	14.96	12.33

There seems to be a tendency for Martin to have a smaller average range in number of ounces per day or less variation in amount of milk consumed during care by the second group of students in each term than during care by the group immediately preceding.

Table 11. Average Range in Number of Ounces per Day by Terms.

Term	Fall	Winter	Spring
Average range	9.17	12.44	13.65
<u>Average range for total period - 11.81</u>			

There also seems to be a tendency for the average range in number of ounces per day to increase (by terms) with increase in chronological age and/or longer stay in the House.

A comparison was made between the average range in number of ounces per day when Martin was in the Home Management House and the range during college vacation periods when he was in a home.

Table 12. Average Range in Number of Ounces per Day in Home Management House and Range in Number of Ounces per Day in a Home.

H.M.H. *	Smallest and Greatest Range in Number of Ounces	Average Range	Range
F I (5 C.D.s)	1.5 - 17.5	9.20	
F II (7 C.D.s)	4.5 - 17.0	9.14	
Home (14 records) Christmas H.M.H.			17.0
W I (6 C.D.s)	6.0 - 22.0	13.38	
W II (6 C.D.s)	9.5 - 13.5	11.50	
Home (10 records) Spring H.M.H.			26.0
S I (6 C.D.s)	5.5 - 19.0	14.96	
S II (6 C.D.s)	9.0 - 17.5	12.33	
House average range - 11.75			
*F refers to Fall term; W refers to Winter term; S refers to Spring term.			

The data on ranges in the daily number of ounces consumed by Martin during the time with each group of students covered a period of approximately $4\frac{1}{2}$ to $6\frac{1}{2}$ weeks for each group. The range in number of ounces was calculated on 14 daily records during Christmas vacation and on 10 daily records for the Spring vacation period. The range during both vacations (17. and 26.) was greater than the average range when Martin was in the care of each group of child directors.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in daily number of ounces under all the first child directors and the succeeding child directors by chronological position in each group are presented in Table 13.

Table 13. Average Range in Daily Number of Ounces of Milk Recorded for Martin by 35 Child Directors According to Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
12.35	12.79	11.08	12.92	9.42	12.42
(Average is 11.81)					

The smallest average range in number of ounces per day was 9.42 with the fifth child directors, based on material from 6 fifth child directors. The greatest average range in daily number of ounces was 12.92 with the fourth child directors, based on material from 6 fourth child directors. During the time Martin was in the care of the child directors who were fourth in order, he also had the highest mean number of bowel movements and the greatest range in number of bowel movements.

A comparison of the students' ratings on question two and the range in number of ounces per day consumed by Martin seems to show little consistent relation. Of the five child directors receiving the highest ratings on question two in their groups, three were students during whose care the range was above the average range for

their groups, while two were students during whose care the range was below the groups' average ranges.

Of the 14 students receiving zero score on question two, nine were students during whose care the range was below the average range for their groups, and five were students during whose care the range was above the average range for their groups. There seems to be a possible relationship here, which seems to be borne out by the material described in the above paragraph.

Of the five child directors receiving the highest scores in their groups on question ten, four were students in whose care there was a range in number of ounces below the average range for their groups; while with one, Martin had a range above the average range for the group.

Of the five child directors receiving the lowest scores in their groups on question ten, three were students in whose care there was a range in number of ounces per day below the average range for their groups, while two were students with whom Martin's range was above the average range for their groups. There seems to be no consistent relation between range in number of ounces per day and high and low scores on question ten.

c. Mean Number of Ounces per FeedingTable 14. Mean Number of Ounces of Milk per Feeding
Recorded for Martin by 36 Child Directors

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	-	3.56	6.27	6.29	5.97	5.89	
F II	6.25	6.36	5.41	6.08	5.35	4.83	5.13
W I	6.09	4.98	5.08	6.09	5.57	4.13	
W II	4.71	3.55	3.77	4.26	3.22	4.37	
S I	3.98	3.79	3.55	4.28	3.02	3.44	
S II	4.13	4.21	3.95	3.91	4.25	3.79	

*F refers to Fall term; W refers to Winter term; S refers to Spring term.

The mean number of ounces per feeding during the period Martin lived in the House was 4.71. Considered by terms, the means were 5.62 in the Fall quarter, 4.65 in the Winter and 3.86 in the Spring quarter. There seems to be a decreasing consumption (by terms) of milk per feeding as well as per day, with increase in chronological age and/or longer stay in the House.

The mean number of ounces per feeding during the time Martin was in the care of each of the 36 child directors ranged from 3.02 to 6.36. The mean of 3.02 occurred with the fifth child director in the first group of Spring term. The mean of 6.36 occurred with the second child director in the second group of Fall term.

During Christmas vacation, the mean number of ounces per feeding (based on 14 records) was 6.89, and during Spring vacation, it was 5.98, (based on 10 records). In both vacation periods, the mean

number of ounces per feeding was higher than in the group and term preceding and succeeding the vacation periods. As was noted earlier, the mean number of ounces per day was also higher during both vacation periods than in the group and term following the vacation period.

The mean number of ounces per feeding consumed by Martin during the two vacation periods was 6.51 as compared with 4.71 for the period Martin was living in the Home Management House. As was noted earlier, there was also a tendency for Martin to consume a greater mean number of ounces per day during the vacation periods than during time in the House.

A comparison of scores on question two and the mean number of ounces per feeding seems to show no consistent relation between the two factors.

Of the five students receiving the highest scores in their groups on question two, four were students in whose care Martin consumed a mean number of ounces per feeding below the groups' means; with one student the mean was above the group's mean.

Of the fourteen students receiving zero score on question two, nine were students in whose care Martin consumed a mean number of ounces per feeding below the groups' means; with five students the mean was above the groups' means.

A comparison of scores on question ten and the mean number of ounces per feeding seems to show no consistent relation between the two factors.

Of the five students receiving the highest scores in their groups on question ten, three were students in whose care Martin consumed a mean number of ounces per feeding above the groups' means; with two students the mean was below the groups' means.

Of the five students receiving the lowest scores in their groups on question ten, three were students in whose care Martin consumed a mean number of ounces per feeding above the groups' means; with two students the mean was below the groups' means.

d. Range in Number of Feedings per Day

Table 15. Range in Number of Feedings per Day Recorded for Martin by 36 Child Directors in 6 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	-	2	0	3	1	2	
F II	2	1	1	2	3	5	3
W I	3	2	2	3	2	2	
W II	5	4	3	2	4	3	
S I	3	5	2	4	1	2	
S II	3	3	1	3	2	4	

*F refers to Fall term; W refers to Winter term; S refers to Spring term.

Records kept on daily number of feedings show that the number ranged from 3 to 10. The average range in daily number of feedings during the period Martin was cared for by all child directors was 2.58. The smallest range in daily number of feedings during the period he was cared for by an individual child director was 0. This range occurred during the time Martin was in the care of the third child director in the first group of Fall term. The greatest range

in daily number of feedings during the time he was cared for by an individual child director was 5. This range occurred 3 times, during the time Martin was in the care of the sixth child director in the second group of Fall term, the first child director in the second group of Winter term, and the second child director in the first group of Spring term. The median range in number of feedings was between 2 and 3.

The variation in number of feedings per day while Martin was being cared for by 36 child directors can be summarized as follows:

	1 case - range of 0
	5 cases - range of 1
Mode -	12 cases - range of 2
	11 cases - range of 3
	4 cases - range of 4
	3 cases - range of 5

Table 16. Average Range by Groups in Number of Daily Feedings for Martin.

	F I	F II	W I	W II	S I	S II
Average range	1.60	2.43	2.33	3.50	2.83	2.67
Average range for total period - 2.58.						

The group under whose care Martin had the smallest average range in number of feedings per day was the first group of Fall term. That average range was 1.60. The group under whose care Martin had the greatest average range in number of feedings per day was the second

group of Winter term. That average range was 3.50. There seems to be no similar tendency for Martin to have a smaller average range in number of feedings during care by the second group of students in all terms as there was in range in number of ounces per day. There seems to be no consistent tendency for Martin to have a greater average range in number of feedings per day (by groups) with increase in chronological age and/or longer stay in the House.

Table 17. Average Range by Terms in Number of Feedings per Day

Term	Fall	Winter	Spring
Average range	2.08	2.92	2.75

There seems to be no consistent tendency for Martin to have a greater average range in number of feedings per day (by terms) with increase in chronological age and/or longer stay in the House, as there was in range in number of ounces per day.

A comparison was made between the average range in number of feedings per day when Martin was in the Home Management House and the range during college vacation periods when he was in a home.

Table 18. Average Range in Number of Feedings per Day Recorded by Groups in the Home Management House and Range at Vacation Times.

Group*	House FI	House FII	Christmas (14 records)	House WI	House WII	Spring (10 records)	House SI	House SII
	1.60	2.43	2.	2.33	3.50	3.	2.83	2.67

Average range for total period in House - 2.58

Average range for total period in home - 2.5

*F refers to Fall term; W refers to Winter term; S refers to Spring term.

The material on average range in number of feedings does not show the tendency suggested by the material on range in number and mean number of bowel movements per day, and range in number and mean number of ounces per day regarding the fourth and sixth child directors.

A comparison was made between the results on question two and the range in number of feedings per day. Of the five students receiving the highest scores in their groups on question two, three were students during whose care of Martin the range in number of feedings was above the average range for the respective groups, and two were students with whom there was a range below the average range for the respective groups.

Of the fourteen students receiving zero score on question two, nine were students in whose care there was a range in number of feedings below the respective group average range, and five were students during whose care there was a range above the respective group average range.

There may be a possible tendency for a greater range in number of feedings per day with students who rated highest on question two, and a smaller range in number of feedings per day with students who received zero score on question two. However, the sample is small, and the difference in numbers (range) is slight.

A comparison was made of those students receiving highest and lowest scores in their groups on question ten, and the range in number of feedings per day. Of the five students receiving the highest scores in their groups on question ten, four were students

in whose care there was a range in number of feedings per day above the average range for their respective groups. With one the range was below the average range of the group.

Of the five child directors receiving the lowest scores in their groups on question ten, three were students during whose care of Martin there was a range in number of feedings per day above the average range for their respective groups, while with two, the range was below the group average range.

There does not seem to be any consistent relation between range in number of feedings per day and scores on question ten. However, there did seem to be a greater range in number of feedings with those students who rated highest on question ten, and the material on question two also seemed to suggest a possible tendency toward a greater range in number of feedings per day with highest on question two. An inverse relation seems to exist with question two, but not with question ten.

B. Case II - Carl

Carl was born on December 3, 1953, and entered Kent House on January 26, 1954, at the age of seven weeks and six days. On January 30, 1954, his weight was recorded as eight pounds and thirteen and one-half ounces. Carl was examined by a local pediatrician on January 29, 1954. He remained in Kent House, except during college vacations, until July 28, 1954, a period of twenty-five weeks and six days. On July 28, 1954, when he was thirty-three weeks and five days of age, Carl was returned to the institution in Portland, where he is at this writing. During his stay in Kent House, Carl was cared for by five groups of students, or a total of twenty-seven child directors.

1. Records of Bowel Movementsa. Mean Number of Bowel Movements per Day

Table 20. Mean Number of Daily Bowel Movements for Carl with 18 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	4.14	3.33	2.83	3.50	2.50	2.50
S I	3.00	1.80	2.80	3.20	2.80	2.67
S II	3.71	3.83	2.80	3.00	3.20	3.17

*W refers to Winter term; S refers to Spring term.

The mean number of bowel movements per day during the total period Carl was in the Home Management House was 3.24. This figure includes material from the first group of Winter term and the Summer group. The mean for the three groups, which are being studied, was 3.08. The lowest mean of these three groups was 2.71 which occurred in the first group of Spring term. The highest mean, 3.32, occurred with the second group of Spring term. With the second group of Winter term, the mean was 3.16.

During Spring vacation (records kept on five days), the mean was 2.40, and during Summer vacation (records kept for fifteen days), it was 3.60. The Spring vacation mean was lower than the groups' means before and after it, but the Summer vacation mean was higher than the preceding and succeeding groups' means.

The mean number of daily bowel movements for the two vacation periods was 3.30 as compared with 3.24 for the total period Carl was in the Home Management House and 3.08 for the three terms being studied.

In shifting from the House to being cared for in a home, there was a decrease of .76 in mean above that of preceding or second group of Winter term. In shifting to the House (Spring quarter) after Spring vacation, there was an increase of .31 in the mean. In shifting to the home at the time of Summer vacation, there was an increase in the mean of .28 and in shifting to the Home Management House (Summer quarter) a decrease in mean of .49 under that during the vacation period. The figures seem to show no consistent tendency

for a smaller or larger mean number of bowel movements per day for Carl when he was in a home.

The mean number of daily bowel movements during the period Carl was cared for by each of the 18 child directors ranged from 1.80 to 4.14. The mean of 1.80 occurred with the second child director in the first group of Spring term. The mean of 4.14 occurred with the first child director of the second group of Winter term.

Table 21. Mean Number of Daily Bowel Movements for Carl with 18 Child Directors Considered by Days.

1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day
3.33	2.89	3.00	3.06	3.06	3.00

The records kept by 18 child directors were considered by days. The total mean number of bowel movements Carl had on the first and each succeeding day with all child directors together is presented in Table 21. The lowest mean number of bowel movements per day was 2.89 on the second day of care by child directors. The highest mean number of bowel movements per day was 3.33 on the first days of care by child directors. The figures seem to suggest no consistent tendency for Carl to increase or decrease in number of bowel movements by days with child directors. There is a difference of .44 between the mean of first days and second days which may indicate a period of adjustment, followed by four days where the means differed by only .06 from each other.

The mean daily number of bowel movements during the time Carl was in the care of 18 child directors was tabulated by grouping the child directors according to the order in which each cared for Carl, i.e., the first child directors in all groups and each successive child director in all groups.

Table 22. Mean Number of Daily Bowel Movements for Carl with 18 Child Directors by Position as Child Director.

	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
Mean	3.62	2.99	2.81	3.23	2.83	2.78
<u>Mean of these means is 3.04.</u>						

The lowest mean number of daily bowel movements (2.78) occurred when Carl was in the care of the child directors who came in sixth position, while the next lowest points (2.81, 2.83) occurred with the third and fifth child directors, respectively. The highest mean number of daily bowel movements (3.62) occurred with the first child directors. This seems to follow somewhat the mean number of bowel movements considered by days where the highest point occurred on the first day and the lowest point on the sixth. There might be a possible tendency suggested which may reflect the change in persons and groups.

b. Range in Number of Daily Bowel Movements

Table 23. Lowest and Highest Number of Daily Bowel Movements Recorded for Carl during Care by 18 Child Directors in 3 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	3-5	2-5	2-5	3-4	2-4	2-3
S I	3-3	1-2	2-4	2-4	2-3	2-3
S II	2-4	3-5	2-4	2-4	2-4	3-4

*W refers to Winter term; S refers to Spring term.

Records for Carl on bowel movements were available from 18 child directors. The records from the first group of Winter term and the Summer term group could not be utilized. The records from the first group of Winter term covered a period of only 14 days, and the order of child directors in Summer group was irregular. Records kept on number of bowel movements per day for Carl showed that the number ranged from 0 to 6. The range which occurred most frequently (7 times) during the period he was in the care of an individual child director was from 2 to 4, or a range of 2. The smallest range in number of daily bowel movements during one period was 0. The greatest range was between 2 and 5, or a range of 3. This variation occurred during two periods, when he was in the care of the second and third child directors in the second group of Winter term.

Variation in number of daily bowel movements while the infant was in the care of each of the 18 child directors may be summarized as follows:

1 case--range of 0
 6 cases--range of 1
 Mode - 9 cases--range of 2
 2 cases--range of 3

Carl's characteristic pattern seems to be a variation of 2 in number of daily bowel movements during the time he was in the care of an individual child director. This range occurred twice in the second group of Winter term, twice in the first group of Spring term, and five times in the second group of Spring term. The last group mentioned seems to be the most consistent, which may suggest a possible tendency to "settle down" with increase in chronological age and/or longer stay in the Home Management House.

A comparison was made between the range in number of bowel movements that Carl had during the time he was in the Home Management House and during college vacation periods when he was in a home as follows:

Lowest and Highest Number of Daily Bowel Movements Recorded
 by Groups in the Home Management House and at Vacation Times.

House W II	Spring (5 records)	House SI	House SII	Summer (15 records)
2-5	2-3	1-4	2-5	3-7

The data on ranges in Carl's number of daily bowel movements during the time with each group of students covered a period of approximately $4\frac{1}{2}$ to 5 weeks for each group. The range in Carl's number of daily bowel movements was calculated on 5 daily records during Spring vacation, and 15 daily records for the Summer vacation period. Carl was ill during the Summer vacation period. He had 7

bowel movements on one day, and after the pediatrician was consulted, the number decreased. Otherwise, the range was 3 to 5.

The range was smaller during the Spring vacation period than with the groups preceding and succeeding the vacation. However, the Spring vacation records numbered only 5; it is difficult to draw conclusions with such a small number.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of daily bowel movements under all the first child directors, the second child directors and so on are presented in Table 24.

Table 24. Average Range in Number of Daily Bowel Movements for Carl with 18 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
1.33	2.00	2.33	1.66	1.66	1.00

Average range for 18 child directors is 1.66.

The smallest average range in number of daily bowel movements was 1.00 with the sixth child directors, with another low point (1.33) occurring with the first child directors, based on material from 3 sixth and 3 first child directors. The greatest average range in number of daily bowel movements was 2.33 with the third child directors.

With the fourth, fifth, and sixth child directors, the figures seem to suggest a tendency for Carl to "settle down", similar to Martin's possible tendency to "settle down" with the fifth and sixth child directors.

A comparison between the range in daily number of bowel movements and the mean daily number of bowel movements with all child directors, according to chronological position in groups, shows a tendency for Carl to have the smallest range and the lowest mean with the sixth child directors.

If we can interpret a smaller mean and range in number of daily bowel movements as indicating a more established pattern, we may conclude that these figures suggest a tendency for Carl to "settle down" in the care of the sixth child directors. (Martin also seemed to "settle down" in this way).

The Appendix contains a graph which gives the number of bowel movements each day for each of the five infants by chronological age in weeks and days. For Carl there seems to be an absence of established pattern in number of bowel movements per day with the exception of the slight trend toward a decrease in mean and in range in number of bowel movements with the sixth child directors and on the sixth days of care by child directors.

c. Sociometric Ratings

The scores received by students on sociometric ratings described earlier were considered in relation to the bowel movement records

of the infant while he was in their care. Scores on question two indicated how the students felt about each other in the role of child director.

There seems to be little relation between high and low scores on question two and the mean number of bowel movements. In the care of two of the three students receiving the highest scores in their groups on question two, Carl had a mean below the respective groups' means; with the other child director, Carl had a mean above the group's mean. Of the ten students receiving zero score on question two, six were students in whose care Carl had a mean number of bowel movements above the groups' respective means; four were students in whose care Carl had a mean number of bowel movements below the groups' means. There seems to be a slight possible tendency for Carl to have a higher mean number of bowel movements with those students who received zero score on question two, and a lower mean number of bowel movements with those students who received the highest scores in their groups on question two.

Of the three students receiving the highest scores in their groups on question two, two were students in whose care Carl had a range in number of bowel movements below the average range for their group; with one Carl had a range above the group average range. Of the ten students receiving zero score on question two, with eight Carl had a range in number of bowel movements above the group average range, with one he had a range in number of bowel movements below the group average, and with one he had a range equal to the

group's average range. There seems to be a possible tendency to have a greater range in number of bowel movements while in the care of those students who received zero score on question two; the inverse relation, however, is not as clear-cut.

In question ten, each student was asked to rate the other students in the order in which she felt comfortable with each from most comfortable to least comfortable. In the first group of Spring term, three students were tied for highest and three were tied for lowest scores in their group on question ten.

There seems to be no consistent relation between scores on question ten and the mean number of bowel movements.

Of the five students receiving the highest scores in their groups on question ten, three were students in whose care Carl had a mean number of bowel movements above the respective group means; with two students, the mean was below the group means.

Of the five students receiving the lowest scores in their groups on question ten, three were students in whose care Carl had a mean number of bowel movements above the groups' means; with two, the mean was below the groups' means.

Of the five students receiving the highest scores in their groups on question ten, four were students in whose care Carl had a range in number of bowel movements below the groups' average ranges; with one student, the range was above the group's average range.

Of the five students receiving the lowest scores in their groups on question ten, four were students in whose care Carl had a range

in number of bowel movements above the groups' average ranges; with one student, the range was below the group's average range.

There seems to be a possible tendency for Carl to have a smaller range in number of bowel movements while in the care of those students rated "most comfortable" by their peers, and a greater range in number of bowel movements while in the care of those students rated "least comfortable" by their peers.

2. Records of Feeding

a. Mean Number of Ounces per Day

Table 25. Mean Number of Ounces of Milk per Day Recorded for Carl by 18 Child Directors in 3 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	32.14	26.83	29.25	27.75	29.42	28.50
S I	30.40	29.30	29.20	30.30	31.30	26.88
S II	29.00	25.42	26.10	25.30	27.30	24.92

*W refers to Winter term; S refers to Spring term.

The mean number of ounces consumed daily by Carl during the time he was in the care of 18 child directors ranged from 24.92 to 32.14. The mean of 24.92 occurred with the sixth child director in the second group of Spring term. The mean of 32.14 occurred with the first child director in the second group of Winter term.

Table 26. Mean Number of Ounces of Milk per Day Recorded for Carl by Groups in the Home Management House and at Vacation Times.

House Winter	Home Spring (5 records)	House Spring	Home Summer (15 records)
Group II - 28.98	30.40	Group I - 29.56 Group II - 26.34	32.13

The mean number of ounces consumed daily by Carl during his care by 18 child directors in the Home Management House was 28.30. The lowest mean (26.34) occurred while Carl was in the care of the second group of Spring term. The highest mean (29.56) occurred while Carl was in the care of the first group of Spring term. While he was in the care of the second group of Winter term, the mean was 28.98 ounces per day. There seems to be no tendency for the consumption of milk to increase or decrease with increase in chronological age and/or longer stay in the House.

The mean for both vacation periods was 31.70, higher than the mean number of ounces consumed with any of the three groups under consideration. The mean number of bowel movements per day was also higher during vacation periods than during total time in the Home Management House with 18 child directors.

The mean number of ounces consumed daily by Carl during the time he was in the care of each child director was tabulated by grouping the child directors according to the order in which each cared for Carl, i.e., the first child directors in all groups and

all successive child directors in all groups. The differences were small here, all means being within 3.74 ounces of each other.

Table 27. Mean Daily Number of Ounces of Milk Reported for Carl by 18 Child Directors, by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
30.51	27.18	28.18	27.78	29.34	26.77

The lowest mean daily number of ounces (26.77) was consumed by Carl while he was in the care of the child directors who came in sixth position, while the highest mean daily number of ounces (30.51) occurred while Carl was in the care of the child directors who came first.

During the time Carl was in the care of the sixth child directors, he consumed the lowest mean number of ounces per day and had the lowest mean number of bowel movements. During the time Carl was in the care of the first child directors, he consumed the highest mean number of ounces per day and had the highest mean number of bowel movements. A similar relationship was found in the corresponding material on Martin. This might suggest that with a decrease or an increase in milk intake, there is a corresponding decrease or increase in number of bowel movements.

A comparison of the students' ratings on question two, described earlier, and the mean number of ounces per day consumed by Carl seems to show little relation. Of the three child directors receiving the highest ratings in their groups on question two, all were students

in whose care Carl consumed a mean number of ounces per day below their groups' average mean.

Of the ten students receiving zero score on question two, five were students in whose care Carl consumed a mean number of ounces per day above their groups' means, and five were students in whose care Carl consumed a mean number of ounces per day below their groups' mean number of ounces per day.

Of the five child directors receiving the highest scores in their groups on question ten, three were students in whose care Carl consumed a mean number of ounces per day above their respective groups' means, while two were students with whom the mean was below the group mean.

Of the five child directors receiving the lowest scores in their groups on question ten, four were students in whose care Carl consumed a mean number of ounces below the respective groups' means; with one student, Carl consumed a mean above the group's mean.

This material on question ten suggests a possible tendency for Carl to consume a lower mean number of ounces per day, relative to the groups' means, while he was being cared for by students with whom other students said they felt least comfortable. The results for Carl on this comparison between question ten and mean number of ounces per day are identical to those found in the same material on Martin.

b. Range in Number of Ounces per Day

Table 28. Range in Number of Ounces of Milk per Day
Recorded for Carl by 18 Child Directors in
3 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	10.50	6.00	11.50	6.00	9.00	3.50
S I	1.00	12.50	6.00	2.50	2.50	3.25
S II	6.50	7.50	1.00	5.00	7.00	9.50

*W refers to Winter term; S refers to Spring term.

Average range is 6.15.

Records on feeding were available for 18 child directors. Records kept on daily number of ounces consumed by Carl show that the number ranged from 20.0 to 36.5 ounces. The average range in number of ounces per day Carl consumed during the period he was cared for by 18 child directors was 6.15. The smallest range in daily number of ounces consumed during the period he was in the care of an individual child director was 1.0 ounce. This range occurred twice, during the time Carl was in the care of the first child director in the first group of Spring term and the third child director in the second group of Spring term. The greatest range in daily number of ounces consumed during the period Carl was in the care of an individual child director was 12.5. This range occurred during the time Carl was in the care of the second child director in the first group of Spring term. The median range in number of ounces per day was 6.00.

Table 29. Average Range in Number of Ounces of Milk per Day by Groups - 18 Child Directors.

Group	W II	S I	S II
Average range	7.75	4.63	6.08

There seems to be no tendency for Carl to increase or decrease consistently in range in number of ounces per day with increase in chronological age and/or stay in Home Management House.

A comparison was made between the average range in number of ounces per day when Carl was in the Home Management House and the range during college vacation periods when he was in a home.

Table 30. Average Range in Number of Ounces per Day in Home Management House and Range in Number of Ounces per Day in a Home.

H.M.H.*	Smallest and Greatest Range in Number of Ounces	Average Range	Range
W II (6 C.D.s)	3.5 - 11.5	7.75	
Home (5 records) Spring H.M.H.			8.00
S I (6 C.D.s)	1.0 - 12.5	4.63	
S II (6 C.D.s) Home (15 records) Summer	1.0 - 9.5	6.08	2.00

House average range - 6.15.

*W refers to Winter term; S refers to Spring term.

The data on ranges in the daily number of ounces consumed by Carl during the time with each group of students covered a period of

approximately $4\frac{1}{2}$ to 5 weeks for each group. The range in number of ounces was calculated on 5 daily records during Spring vacation and on 15 daily records for the Summer vacation period. During Spring vacation, the range was greater than the average range for the total period in the House, but the range during Summer vacation was considerably smaller. There seems to be no tendency for range to increase or decrease consistently during House and vacation stays.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in daily number of ounces under all the first child directors and the succeeding child directors by chronological position in each group are presented in Table 31.

Table 31. Average Range in Number of Ounces of Milk Recorded for Carl by 18 Child Directors According to Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
6.00	8.67	6.17	4.50	6.17	5.42
(Average is 6.15)					

The smallest average range in number of ounces per day was 4.50 with the fourth child directors, based on material from 3 fourth child directors. The greatest average range in number of ounces per day was 8.67 with the second child directors, based on material from 3 second child directors. There is a difference of 2.67 in the average range between the first and second child directors which may

indicate a period of adjustment followed by a difference of 1.67 among the last four child directors. The average range with the sixth child directors (5.42) is well below the average range of 6.15. This may suggest a period of initial adjustment with groups in the range in number of ounces per day similar to the possible initial period of adjustment with individual child directors suggested by the material on mean number of bowel movements per day.

A comparison of the students' ratings on question two and the range in number of ounces per day consumed by Carl seems to suggest a slight tendency for the range to be smaller than the respective groups' average ranges while Carl was in the care of those three students who scored highest on question two in their groups. The range in number of ounces was below the groups' respective averages while Carl was in the care of those three students who received the highest scores in their groups on question two. Of the ten students who received zero score on question two, seven were students in whose care Carl had a range in number of ounces above the average ranges for their groups, while three were students during whose care the range was below the groups' average ranges.

Of the five students who received the highest scores in their groups on question ten, four were students in whose care the range was below the average range for their groups; with only one was the range above the group's average range.

Of the five students who received the lowest scores in their groups on question ten, three were students in whose care Carl's

range in number of ounces was below the respective groups' average ranges; with two students the range was above the groups' average ranges. There seems to be no consistent relation between high and low scores on question ten and the range in number of ounces.

c. Mean Number of Ounces per Feeding

Table 32. Mean Number of Ounces of Milk per Feeding
Recorded for Carl by 18 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	6.11	5.96	6.50	6.17	6.53	7.13
S I	7.60	6.37	6.95	7.21	7.11	6.45
S II	7.00	6.10	6.53	6.33	6.83	6.50

*W refers to Winter term; S refers to Spring term.

The mean number of ounces per feeding during the period Carl was in the care of 18 child directors was 6.63. Considered by groups, the means were 6.40 with the second group of Winter term, 6.95 in the first group and 6.55 in the second group of Spring term. There seems to be no tendency for a decrease or increase in number of ounces per feeding as well as per day with increase in chronological age and/or longer stay in the House. The highest number of ounces per day and per feeding occurred while Carl was in the care of the first group of Spring term, but the differences are small.

The mean number of ounces per feeding during the period Carl was in the care of each of the 18 child directors ranged from 5.96 to 7.60. The mean of 5.96 occurred with the second child director in the second group of Winter term. The mean of 7.60 occurred with

the first child director in the first group of Spring term.

During Spring vacation the mean number of ounces per feeding (based on 5 records) was 8.00, and during Summer vacation it was 7.90, based on 15 records. In both vacation periods, the mean number of ounces per feeding as well as per day was higher than in the group preceding the vacation period. The mean for Spring vacation was higher than the mean for the group succeeding it as well.

The mean number of ounces per feeding consumed by Carl during the two vacation periods was 7.93 as compared with 6.63 for the period Carl was living in the Home Management House. As was noted earlier, there was also a tendency for Carl to consume a greater mean number of ounces per day during the vacation periods than during time in the House. A similar tendency was suggested by the corresponding material on Martin.

A comparison of scores received on question two and the mean number of ounces per feeding seems to show no relation. Of the three students receiving the highest scores in their groups on question two, all were students in whose care Carl had a mean number of ounces per feeding below the means for the respective groups. Of the ten students receiving zero score on question two, five were students in whose care Carl consumed a mean number of ounces per feeding below the respective groups' means; with four Carl consumed a mean above the groups' means, and with one he consumed a mean equal to the group's mean number of ounces per feeding.

A comparison of ratings on question ten and the mean number of

ounces per feeding seems to show little relation. Of the five students receiving the highest scores in their groups on question ten, three were students with whom Carl consumed a mean number of ounces above the respective groups' means; with two students, the mean was below the groups' means.

Of the five students receiving the lowest scores in their groups on question ten, three were students in whose care Carl had a mean number of ounces below the groups' respective means; with one student the mean was above the group's mean, and with one student the mean was identical to the group's mean.

d. Range in Number of Feedings per Day

Table 33. Range in Number of Feedings per Day Recorded for Carl by 18 Child Directors in 3 groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	C.D. C.D.
W II	2	1	1	1	1	0
S I	0	1	1	1	1	1
S II	1	1	0	0	0	1

*W refers to Winter term; S refers to Spring term.

Records kept on daily number of feedings show that the number ranged from 3 to 6. The average range in daily number of feedings during the period Carl was in the care of 18 child directors was .78. The smallest range in daily number of feedings during the period he was cared for by an individual child director was 0. This range occurred five times, with the sixth child director in the second group of Winter term, the first child director in the first

group of Spring term, and the third, fourth, and fifth child directors in the second group of Spring term. The greatest range in daily number of feedings during the time he was cared for by an individual child director was 2. This range occurred with the first child director in the second group of Winter term. The median range in number of feedings per day was 1.

The variation in number of feedings per day while Carl was being cared for by 18 child directors can be summarized as follows:

5 cases - range of 0
 Mode - 12 cases - range of 1
 1 case - range of 2

Table 34. Average Range by Groups in Number of Daily Feedings for Carl.

Group	W II	S I	S II
Average range	1.00	.83	.50
Average range for total period - .78.			

The group under whose care Carl had the smallest average range in number of daily feedings (.50) was the last group who cared for him (the second group of Spring term), and the group under whose care Carl had the greatest average range in number of feedings per day (1.00) was the first group, (second group of Winter term). There seems to be a tendency for the average range in number of feedings per day to decrease with increase in chronological age and/or longer stay in the House.

A comparison was made between the average range in number of feedings per day when Carl was in the Home Management House and the range during college vacation periods when he was in a home.

Table 35. Average Range in Number of Feedings per Day Recorded by Groups in the Home Management House and Range at Vacation Times.

Group*	House	Spring Vacation (5 records)	House		Summer Vacation (15 records)
	WII		SI	SII	
		(3.-4.)			(4.-5.)
	1.00	1.00	.83	.50	1.00

Average range for total period in House - .78.

Average range for total period in home - 1.00.

*W refers to Winter term; S refers to Spring term.

The data on ranges in number of feedings per day during the time with each group of students covered a period of approximately $4\frac{1}{2}$ to 5 weeks for each group. The range in number of feedings was tabulated on the basis of 5 daily records during Spring vacation and on 15 daily records for the Summer vacation period. There was neither decrease nor increase in shift from House to home at Spring vacation time, but there was a decrease in the shift from home to House for Spring term. The range during Summer vacation was twice the average range of the group preceding that period. There is a slight tendency for Carl to have a greater range in number of feedings per day while in a home than in the House.

The records kept by each child director were considered by

chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of feedings per day are presented in Table 36.

Table 36. Average Range in Number of Daily Feedings with 18 Child Directors by Chronological Position of Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
1.00	1.00	.67	.67	.67	.67

Average range is .78.

Carl seems to have a tendency to have a greater range in number of feedings per day while in the care of the first and second child directors than with the four succeeding child directors. This possible tendency seems to follow the same tendency to "settle down" suggested by material on mean number and range in number of bowel movements and range in number of ounces per day.

A comparison was made between the results on question two and the range in number of feedings per day. Of the three students receiving the highest scores in their groups on question two, one was a student in whose care Carl had a range in number of feedings per day above the average range for her group; one was below, and the third was average for her group.

Of the ten students receiving zero score on question two, six were students in whose care Carl had a range in number of feedings above the group's average range; while in the case of two, the range

was below, and with two the range was equal to the group's average range. This material seems to suggest a tendency for a greater range in number of feedings with those students receiving zero score on question two. The inverse relation does not seem to exist with this material. However, this is based on a small sample and the differences in ranges are relatively slight.

A comparison was made of those students receiving highest and lowest scores in their groups on question ten and the range in number of feedings per day. Of the five students receiving the highest scores in their groups on question ten, two were students in whose care the range was above, 2 were below, and one was identical to the respective groups' average ranges.

Of the five students receiving the lowest scores in their groups on question ten, three were students in whose care the range was above, one was below, and one was identical to the respective groups' average ranges.

There seems to be no relation between range in number of feedings per day and scores on question ten.

C. Case III - Robin

Robin was born on August 16, 1954, and entered Withycombe House on September 29, 1954, at the age of six weeks and two days. On October 1, 1954, his weight was recorded as ten pounds and ten and three-quarters ounces. Robin was examined by a local pediatrician on October 1, 1954. He remained in Withycombe House, except during Thanksgiving vacation, until December 16, 1954, a period of eleven weeks and one day. On December 16, 1954, when he was seventeen weeks and three days of age, Robin was returned to the institution in Portland, where he is at this writing. During his stay in Withycombe House, Robin was cared for by two groups of students, or a total of thirteen child directors, under the supervision of one resident advisor.

1. Records of Bowel Movementsa. Mean Number of Bowel Movements per Day

Table 37. Mean Number of Daily Bowel Movements for Robin with 13 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	4.67	3.60	3.00	4.00	3.17	3.17	3.33
F II	3.17	2.83	3.50	2.67	2.17	3.00	

*F refers to Fall term.

The mean number of bowel movements per day during the total period Robin was in the Home Management House was 3.19. The mean was 3.47

with the first group of Fall term and 2.89 with the second group of Fall term.

A comparison between the mean number of bowel movements per day that Robin had during the time he was in the Home Management House and during Thanksgiving vacation could not be made. The bowel movement records during Thanksgiving vacation were incomplete.

The mean number of daily bowel movements during the period Robin was cared for by each of the 13 child directors ranged from 2.17 to 4.67. The mean of 2.17 occurred with the fifth child director in the second group of Fall term. The mean of 4.67 occurred with the first child director in the first group of Fall term.

The records kept by each child director were considered by days. The mean number of bowel movements Robin had on the first and each succeeding day with all child directors is presented in Table 38.

Table 38. Mean Number of Daily Bowel Movements for Robin with 13 Child Directors Considered by Days.

1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day
13 C.D.	13 C.D.	13 C.D.	12 C.D.	12 C.D.	10 C.D.
2.85	3.46	3.38	2.92	3.00	3.60

The lowest mean number of bowel movements per day was 2.85 on the first day of care, with another low point (2.92) occurring on the fourth day of care. The highest mean number of bowel movements per day was 3.60 on the sixth day of care, with another high point (3.46) occurring on the second day of care.

The means for the first, fourth and fifth days of care by child directors are below the mean for the total period. The means for the second, third, and sixth days are above the mean for the total period. There may be a tendency for Robin to "settle down" by the fourth and fifth days, and to respond to forthcoming change on the sixth day of care by the highest mean number of bowel movements of all. However, the lowest mean of all with the first child directors seems to refute this possible tendency.

The mean daily number of bowel movements during the time Robin was in the care of 12 of the 13 child directors was tabulated by grouping the child directors according to the order in which each cared for Robin, i.e., the first child directors in both groups and each successive child director in both groups.

Table 39. Mean Number of Daily Bowel Movements for Robin with 12 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
3.92	3.22	3.25	3.34	2.67	3.09

Mean of these means is 3.25.

The lowest mean number of bowel movements per day (2.67) occurred when Robin was in the care of the child directors in fifth position, while the next lowest point (3.09) occurred with the sixth child directors. The highest mean number of daily bowel movements (3.92) occurred with the first child directors, with the next highest mean (3.34) occurring with the fourth child directors. Low

means for Martin and Carl also occurred on the fifth and sixth days. High means for Martin and Carl occurred on the first and fourth days of care.

There is an increase of .42 from the fifth to the sixth days of care which may reflect the possible tendency described earlier for Robin to respond to forthcoming change with an increase in mean number of bowel movements per day.

The Appendix contains a graph which gives the number of bowel movements each day for each of the five infants by chronological age in weeks and days. For Robin there seems to be an absence of established pattern in number of bowel movements per day.

b. Range in Number of Bowel Movements per Day

Table 40. Lowest and Highest Number of Daily Bowel Movements Recorded for Robin During Care by 13 Child Directors in 2 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	3-7	3-4	2-4	2-6	1-6	2-4	2-4
F II	2-4	2-4	2-5	1-4	1-3	1-5	

*F refers to Fall term.

Records for Robin on bowel movements were available from 13 child directors. Records kept on number of bowel movements per day showed that the number ranged from 1 to 7. The range which occurred most frequently (5 times) during the period he was in the care of an individual child director was from 2 to 4, or a range of 2. The

smallest range in number of daily bowel movements during one period was 1. This variation occurred during the time Robin was in the care of the second child director in the first group of Fall term. The greatest range was between 1 and 6, or a range of 5. This variation occurred during the time Robin was in the care of the fifth child director in the first group of Fall term.

Variation in number of daily bowel movements while the infant was in the care of each of the 13 students may be summarized as follows:

	1 case	- range of 1
Mode -	6 cases	- range of 2
	2 cases	- range of 3
	3 cases	- range of 4
	1 case	- range of 5

Robin's characteristic pattern seems to be a variation of 2 in number of daily bowel movements during the period he was cared for by an individual child director. This range occurred three times in the first group of Fall term and three times in the second group of Fall term. A comparison between the range in number of bowel movements that Robin had during the time he was in the Home Management House and during Thanksgiving vacation could not be made. The bowel movement records during Thanksgiving vacation were incomplete.

The records kept by each child director were considered by chronological position of the child directors in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of daily bowel movements under all first child directors, second child directors and so on are presented in Table 41.

Table 41. Average Range in Number of Daily Bowel Movements for Robin with 12 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
3.00	1.50	2.50	3.50	3.50	3.00

The smallest average range in number of daily bowel movements was 1.50 with the second child directors, based on material from 2 second child directors. The greatest average range in number of daily bowel movements was 3.50 with the fourth and fifth child directors, based on material from 2 fourth and 2 fifth child directors.

There is a difference of 1.5 among the average ranges with the child directors in the first three chronological positions, and a difference of only .5 among the average ranges with the child directors in the last three positions. This may suggest a possible tendency for Robin to "settle down" with the last three child directors, although the last three average ranges are greater than the first three.

c. Sociometric Ratings

The scores received by students on sociometric ratings described earlier were considered in relation to the bowel movement records of the infant while he was in their care. Scores on question two indicated how the students felt about each other in the role of child director.

A comparison was made between scores on question two and the mean number of bowel movements per day. Of the three students receiving the highest scores in their group on question two, two were students in whose care Robin had a mean number of bowel movements above their groups' means; with one Robin had a mean below the group's mean.

Of the seven students receiving zero score on question two, four were students in whose care Robin had a mean below the groups' means, and three were students in whose care Robin had a mean number of bowel movements above the groups' means.

There may be a slight tendency for Robin to have a higher mean number of bowel movements per day with those students rated highest on question two and a lower number of bowel movements with those students rated lowest on question two.

Two of the students in the second group of Fall term tied for highest score on question two. Of the three students receiving the highest scores in their groups on question two, two were students in whose care Robin had a range in number of bowel movements below the average range for their group; with one child director, the range was above the group average range.

Of the seven students receiving zero score on question two, four were students in whose care Robin had a range above the group's average ranges in number of bowel movements, and three were students in whose care Robin had a range below the groups' average ranges.

There may be a slight tendency for Robin to have a smaller range

in number of bowel movements with those students rated highest in their groups on question two and a greater range in number of bowel movements with those students rated lowest in their groups on question two.

On question ten each student was asked to describe how she felt with each of her peers in the group by rating them from "very uncomfortable" to "very comfortable."

In the care of all of the three child directors receiving the highest scores in their groups on question ten, Robin had a mean number of bowel movements below the groups' means.

In the care of one of the two child directors receiving the lowest scores in their groups on question ten, Robin had a mean below the group's mean; with one Robin had a mean number of bowel movements above the group's mean.

Of the three students receiving the highest scores in their groups on question ten, two were students in whose care Robin had a range in number of bowel movements below the groups' average ranges; with one, the range was above the group's average range.

In the care of both of the students receiving the lowest scores in their groups on question ten, Robin had a range in number of bowel movements below the groups' average ranges.

There seems to be no consistent relation between question ten and range in number of bowel movements. Robin seems to tend to have a lower mean number of bowel movements with those students receiving the highest scores in their groups on question ten than with those receiving

the lowest scores. The inverse relation is not evident.

2. Records of Feeding

a. Mean Number of Ounces per Day

Table 42. Mean Number of Ounces of Milk per Day Recorded for Robin by 13 Child Directors in 2 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	29.83	26.81	28.13	32.21	31.96	31.88	36.33
F II	34.92	31.30	32.85	33.42	31.80	31.30	

*F refers to Fall term.

The mean number of ounces consumed daily by Robin during the time he was in the care of 13 child directors ranged from 26.81 to 36.33 ounces. The mean of 26.81 occurred while Robin was in the care of the second child director in the first group of Fall term. The mean of 36.33 occurred with the seventh child director in the first group of Fall term.

The mean number of ounces consumed daily by Robin during the time he was in Withycombe House was 31.75. The mean for the time he was in the care of the first group was 31.02. With the second group of Fall term the mean was 32.60, an increase of 1.58 ounces.

The mean number of ounces Robin consumed daily during Thanksgiving vacation was 37.25 ounces. This mean is 5.50 ounces greater than the mean number of ounces Robin consumed while in the care of 13 child directors.

The mean number of ounces consumed daily by Robin during the time he was in the care of each child director was tabulated by grouping the child directors according to the order in which each cared for Robin, i.e., the first child director in both groups and all successive child directors in both groups.

Table 43. Mean Daily Number of Ounces of Milk Reported for Robin by 12 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
32.38	29.06	30.49	32.82	31.88	31.59

The lowest mean number of ounces per day was 29.06 with the second child directors, based on material from 2 second child directors. The highest mean was 32.82 with the fourth child directors, based on material from 2 fourth child directors.

During the time Robin was in the care of the second child directors, the average range in number of bowel movements was smallest, and while he was in the care of the fourth child directors the average range in number of bowel movements was greatest. In corresponding material on Martin, the relation between range in number of bowel movements and mean number of ounces per day was similar to the relation found in the material on Robin. With the sixth child directors, Carl had the smallest average range in number of bowel movements and consumed the lowest mean number of ounces per day. However, the child directors in whose care Carl had the greatest average range in number of bowel movements and the

highest mean number of ounces per day were the third and first child directors respectively.

This material may suggest a tendency for the infants to consume a higher mean number of ounces per day while in the care of those child directors with whom the infants had the greatest range in number of bowel movements, and a lower mean number of ounces per day while in the care of those child directors with whom they had a smaller range in number of bowel movements, or it may be a simple relationship of intake and output.

A comparison of the students' ratings on question two, described earlier, and the mean number of ounces per day consumed by Robin seems to suggest a tendency for Robin to consume a lower mean number of ounces per day in the care of those students receiving the highest scores in their groups on question two and a higher mean number of ounces per day in the care of those students receiving zero score on question two.

Of the three students receiving the highest scores in their groups on question two, two were students in whose care Robin consumed a mean number of ounces per day lower than the groups' means, while with one he consumed a mean higher than the group's mean.

With six of the seven students receiving zero score on question two, Robin consumed a mean number of ounces per day higher than the groups' means, while with one he consumed a mean lower than the group's mean.

A comparison of the students' ratings on question ten and the

mean number of ounces consumed daily by Robin seems to suggest a slight tendency for Robin to consume a higher mean number of ounces with those students receiving the highest scores in their groups on question ten, and a lower mean number of ounces with those students receiving the lowest scores in their groups.

Of the three students receiving the highest scores in their groups on question ten, two were students in whose care Robin consumed a mean number of ounces above the group's mean, while with one he consumed a mean below the group mean.

With both of the students receiving the lowest scores in their groups on question ten, Robin consumed a mean number of ounces per day below the groups' means. The results for Robin are similar to those found in the same material on Martin and Carl.

b. Range in Number of Ounces per Day

Table 44. Range in Number of Ounces of Milk per Day Recorded for Robin by 13 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	.50	4.25	16.00	9.75	9.25	6.00	9.00
F II	8.50	7.25	4.25	9.00	10.25	9.00	

*F refers to Fall term.

Records on feeding were available for 13 child directors. Records kept on daily number of ounces consumed by Robin show that the number ranged from 20.50 to 41.00. The average range in number

of ounces per day Robin consumed during the period he was in the care of 13 child directors was 7.92. The smallest range in daily number of ounces consumed during the period he was in the care of an individual child director was .50. This range occurred during the time Robin was in the care of the first child director in the first group of Fall term. The greatest range in daily number of ounces consumed during the period Robin was in the care of an individual child director was 16.00. This range occurred during the time Robin was in the care of the third child director in the first group of Fall term. The median range was 9.00, as compared with the average range of 7.92.

Table 45. Average Range in Number of Ounces of Milk per Day by Groups - 13 Child Directors.

Group	F I	F II
Average range	7.82	8.04

The range in number of ounces per day increased by .22 from the first group to the second group of Fall term.

A comparison was made between the average range in number of ounces per day when Robin was in the Home Management House and the range during Thanksgiving vacation. The average range was 7.92 with 13 child directors. The range during Thanksgiving vacation was 5.50. The vacation range was smaller than the range in number of ounces during the time Robin was in the care of 10 of the 13 individual child directors.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in daily number of ounces under all the first child directors and the succeeding child directors by chronological position in each group are presented in Table 46.

Table 46. Average Range in Number of Ounces of Milk per Day Recorded for Robin by 12 Child Directors According to Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
4.50	5.75	10.13	9.38	9.75	7.50
(Average is 7.83)					

The smallest average range in number of ounces per day (4.50) occurred during the time Robin was in the care of the first child directors. The greatest average range in number of ounces per day (10.13) occurred during the time Robin was in the care of the third child directors.

The smaller average ranges, occurring with the first and second child directors, seem to suggest that Robin has a tendency to decrease in range in number of ounces per day after group change. Although the average ranges with the successive four child directors are considerably greater than with the first two, the sixth is relatively low, which may refute the possibility of this tendency, or may be suggestive of a response to forthcoming change in groups.

A comparison of the students' ratings on question two and the

range in number of ounces per day consumed by Robin seems to show no consistent relationship. Of the three students receiving the highest scores in their groups on question two, (two students tied for highest score in the second group), two were child directors in whose care the range in number of ounces per day was above the group average range and the average range with all child directors. With one of these, the range was below the average ranges.

Of the seven students receiving zero score on question two, four were students in whose care of Robin the range was above, and three were below the groups' average ranges and the average range with all students.

A comparison between results on question ten and the range in number of ounces per day seems to show little relation between the two factors. Of the three students receiving the highest scores in their groups on question ten, (two students tied for highest score in the first group), two were students in whose care the range in number of ounces was greater than the group average range, while with one, the range was smaller than the group average range and the average range with all child directors.

Of the two students receiving the lowest scores in their group on question ten, one had a range above and the other below their respective groups' average ranges and the average range of all the child directors.

c. Mean Number of Ounces per Feeding

Table 47. Mean Number of Ounces of Milk per Feeding Recorded for Robin by 13 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	5.26	4.29	4.69	4.11	5.48	5.03	5.32
F II	5.99	5.59	5.13	5.57	5.30	6.80	

Mean number of ounces per day with 13 child directors - 5.22.

*F refers to Fall term.

The mean number of ounces per feeding during the period Robin was in the care of 13 child directors was 5.22 ounces. Considered by groups, the means were 4.85 ounces with the first group and 5.69 ounces with the second group of Fall term. This might suggest a tendency to increase in mean number of ounces per feeding with increase in chronological age and/or longer stay in the House. The greater mean number of ounces per day and per feeding occurred while Robin was in the care of the second group.

The mean number of ounces per feeding during the period Robin was in the care of each of the 13 child directors ranged from 4.11 to 6.80 ounces. The mean of 4.11 occurred while Robin was in the care of the fourth child director in the first group of Fall term. The mean of 6.80 occurred while Robin was in the care of the sixth child director in the second group of Fall term.

During Thanksgiving vacation, the mean number of ounces per feeding (based on 4 daily records) was 5.32. The mean number of

ounces per feeding as well as per day was higher during the four-day vacation period than during the period with 13 child directors, suggesting a tendency toward a higher mean number of ounces per feeding as well as per day during the vacation periods. However, the vacation records are too few in number to suggest a conclusive tendency.

A comparison of scores received on question two and the mean number of ounces per feeding seems to show little relation between the two factors. There may be a slight tendency for Robin to consume a higher mean number of ounces with those students rated highest in their groups on question two and a lower mean number of ounces with those students rated lowest in their groups on question two.

Of the three students receiving the highest scores in their groups on question two, two were students during whose care Robin consumed a mean number of ounces per feeding above the groups' means, and with one he consumed a mean below the group's mean.

Of the seven students receiving zero score on question two, four were students in whose care Robin consumed a mean number of ounces per feeding below the groups' means; with three students receiving zero score, Robin had a mean above the group's mean.

A comparison of ratings on question ten and the mean number of ounces per feeding seems to show little relation. There may be a slight tendency for Robin to consume more ounces per feeding while in the care of those students with whom other students felt "most comfortable" in the group, and fewer ounces per feeding while in the

care of those students rated as "least comfortable" in the group.

Of the three students receiving the highest scores in their group on question ten, two were students in whose care Robin consumed a mean number of ounces per feeding above the group mean, and in the care of one, Robin consumed a mean lower than the group mean.

In the care of both of the students receiving the lowest scores in their groups on question 10, Robin consumed a mean number of ounces per feeding lower than the groups' means.

d. Range in Number of Feedings per Day

Table 48. Range in Number of Feedings per Day Recorded for Robin by 13 Child Directors in 2 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.	7th C.D.
F I	1	1	4	4	2	4	3
F II	2	2	1	3	2	1	

*F refers to Fall term.

Records kept on daily number of feedings show that the number ranged from 4 to 10. The average range in daily number of feedings during the period Robin was in the care of 13 child directors was 2.31. The smallest range in daily number of feedings during the period he was in the care of an individual child director was 1. This range occurred 4 times, with the first and second child directors in the first group, and with the third and sixth child directors in the second group of Fall term. In the care of these four child

directors, Robin had a mean number of bowel movements above the groups' means.

The greatest range in daily number of feedings during the time he was in the care of an individual child director was 4. This range occurred 3 times, with the third, fourth and sixth child directors in the first group of Fall term. The median range in number of feedings per day was 2, compared with 2.31, the average range.

The variation in number of feedings per day while Robin was in the care of 13 child directors can be summarized as follows:

- 4 cases - range of 1
- 4 cases - range of 2
- 2 cases - range of 3
- 3 cases - range of 4

The average range in number of feedings per day while Robin was in the care of the first group was 2.71, and with the second group it was 1.83. This might suggest a possible tendency for the range in number of feedings per day to decrease with increase in chronological age and/or longer stay in the House. Carl showed a similar tendency, but Martin did not.

A comparison was made between the average range in number of feedings per day when Robin was in the Home Management House and during Thanksgiving vacation when he was in a home. The average range was 2.31 when he was in the care of 13 child directors, and 0 when he was in a home. There seems to be a possible tendency for a smaller range when Robin was in a home than when he was in the Home

Management House. However, the vacation range is based on a period of only 4 days.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of feedings per day are presented in Table 49.

Table 49. Average Range in Number of Daily Feedings with 12 Child Directors by Chronological Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
1.50	1.50	2.50	3.50	2.00	2.50
Average range is 2.27.					

The smallest average range in number of feedings per day (1.50) occurred with the child directors in first and second position. The greatest average range (3.50) occurred with the fourth child directors.

With the second child directors, Robin had the smallest average range in number of bowel movements and consumed the lowest mean number of ounces per day. With the fourth child directors, Robin had the greatest average range in number of bowel movements and consumed the highest mean number of ounces per day. This material on Robin seems to suggest a possible tendency for a positive relation among these three factors. However, the corresponding material on Martin and Carl does not suggest this tendency.

A comparison was made between the results on question two and the range in number of feedings per day. There seems to be no consistent relation between the two factors. Of the three students receiving the highest scores in their groups on question two, two were students in whose care Robin had a range in number of feedings per day greater than the groups' average ranges; with one student the range was below the group's average range.

Of the seven students receiving zero score on question two, four were students in whose care the range was greater than the groups' average ranges in number of feedings per day; with three students, the range was less than the groups' average ranges.

A comparison was made of those students receiving highest and lowest scores in their groups on question ten and the range in number of feedings per day. Of the three students receiving the highest scores, two were students during whose care the range was above and one was below the groups' average ranges.

Of the two students receiving the lowest scores in their groups on question ten, with one the range was greater and with one the range was smaller than the groups' average ranges.

As with the material on Martin and Carl, there seems to be no consistent relation between results on question ten and range in number of feedings per day.

D. Case IV - Duncan

Duncan was born on August 19, 1954, and entered Kent House on January 12, 1955, at the age of twenty weeks and six days. Duncan was examined by a local pediatrician on January 14, 1955, and his weight was recorded as fourteen pounds and twelve ounces. He remained in Kent House, except during Spring vacation, until April 28, 1955, a period of fifteen weeks and one day. On April 28, 1955, when he was thirty-six weeks of age, Duncan was returned to the institution in Portland, where he is at this writing. During his stay in Kent House, Duncan was cared for by three groups of students, or a total of seventeen child directors, under the supervision of one resident advisor.

1. Records of Bowel Movementsa. Mean Number of Bowel Movements per Day

Table 50. Mean Number of Daily Bowel Movements for Duncan with 17 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W I	2.60	2.75	2.80	2.60	2.50	2.17
W II	2.00	2.80	1.17	1.17	1.40	2.60
W I	1.57	1.83	2.83	2.00	1.60	

Mean for total period in House - 2.08.

*W refers to Winter term; S refers to Spring term.

The mean number of bowel movements per day during the total period Duncan was in the Home Management House was 2.08. The means by groups were 2.47 with the first group, 1.82 with the second group, and 1.97 with the third group.

During Spring vacation, (records kept on 10 days), the mean was 2.10. This is higher than the means occurring with the groups immediately preceding and succeeding the vacation period. The vacation mean was .02 higher than the mean during the total period in Kent House. There may be a tendency suggested by this material for Duncan to have a higher mean number of bowel movements when cared for in a home, but the difference between the vacation mean and the House mean is so slight it is almost negligible. This possible tendency is similar to that suggested by corresponding material on Carl, where the vacation mean was 3.30 as compared with 3.08 for the three groups studied.

The mean number of daily bowel movements during the period Duncan was cared for by 17 child directors ranged from 1.17 to 2.83. The mean of 1.17 occurred with the third and fourth child directors in the second group of Winter term. The mean of 2.83 occurred with the third child director in the first group of Spring term.

The records kept by each child director were considered by days. The mean number of bowel movements Duncan had on the first and each succeeding day with all child directors is presented in Table 51.

Table 51. Mean Number of Daily Bowel Movements for Duncan with 17 Child Directors Considered by Days

1st Days (17 C.D.)	2nd Days (17 C.D.)	3rd Days (17 C.D.)	4th Days (17 C.D.)	5th Days (17 C.D.)	6th Days (7 C.D.)
2.06	1.94	2.06	2.59	2.00	1.57

The lowest mean number of bowel movements per day was 1.57 on the sixth days of care. The highest mean number of bowel movements per day was 2.59 on the fourth days of care. The means remain quite constant except for an increase on the fourth day and a decrease on the sixth day. If the figures from the fourth through the sixth days of care are considered, there is a decrease. This might suggest a possible tendency for Duncan to be "settling down" during these days, or it might suggest a point of relaxation on the fourth day with a response to the impending shift in child directors by fewer bowel movements on the sixth day.

The mean number of daily bowel movements during the time Duncan was in the care of the 17 child directors was tabulated by grouping the child directors according to the order in which each cared for Duncan, i.e., the first child directors in all groups and each successive child director in all groups.

Table 52. Mean Number of Daily Bowel Movements for Duncan with 17 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
2.06	2.46	2.27	1.92	1.67	2.39
Mean of these means is 2.11.					

The lowest mean number of bowel movements per day, (1.67), occurred when Duncan was in the care of the child directors in fifth position. The highest mean number of bowel movements per day, (2.46), occurred when Duncan was in the care of the child directors in second position.

Duncan had the lowest means while in the care of the fourth and fifth child directors, perhaps suggesting a point of "settling down." There was a steady decrease in mean from the second through the fifth child directors, with an increase of .72 from the fifth to the sixth child directors, which may suggest a possible tendency, similar to that found in corresponding on Robin, for Duncan to respond to forthcoming change in groups with an increase in mean. The high mean with the second child directors might be considered a "delayed reaction" to the change.

The Appendix contains a graph which gives the number of bowel movements each day for each of the five infants by chronological age in weeks and days. For Duncan there seems to be an absence of established pattern in number of bowel movements per day.

b. Range in Number of Bowel Movements per Day

Table 53. Lowest and Highest Number of Daily Bowel Movements Recorded for Duncan During Care by 17 Child Directors in 3 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W I	1-5	2-3	2-4	2-3	2-2	1-4
W II	1-3	1-4	1-2	0-2	1-2	2-3
S I	1-2	1-3	1-4	1-3	1-2	

*W refers to Winter term; S refers to Spring term.

Records for Duncan on bowel movements were available from 17 child directors. Records kept on number of bowel movements per day show that the number ranged from 0 to 5. The range which occurred most frequently (4 times) during the period he was in the care of an individual child director was from 1 to 2, or a range of 1. The smallest range in number of bowel movements during one period was 0. This variation occurred during the time Duncan was in the care of the fifth child director in the first group of Winter term. The greatest range was between 1 and 5, or a range of 4. This variation occurred during the time Duncan was in the care of the first child director in the first group of Winter term.

Variation in number of daily bowel movements while the infant was in the care of each of the 17 students may be summarized as follows:

	1 case	- range of 0
Mode -	7 cases	- range of 1
	5 cases	- range of 2
	3 cases	- range of 3
	1 case	- range of 4

Duncan's characteristic pattern seems to be a variation of 1 in number of daily bowel movements during the period he was cared for by an individual child director. This range occurred twice in the first group of Winter term, 3 times in the second group of Winter term, and twice in the first group of Spring term. The second group seems to be the most consistent. The variability does not seem to change in any consistent way with length of stay in the House or increase in chronological age for Duncan.

A comparison was made between the range in number of bowel movements that Duncan had during the time he was in the Home Management House and during Spring vacation when he was in a home (see Table 54).

Table 54. Lowest and Highest Number of Daily Bowel Movements Recorded by Groups in the Home Management House and at Vacation Times.

House		Spring	House
W I	W II	(10 records)	S I
1-5	0-4	1-3	1-4

The data on ranges in Duncan's number of daily bowel movements during the time with each group of students covered a period of approximately 4 to 5 weeks for each group. The range in Duncan's number of daily bowel movements was based on 10 daily records during Spring vacation.

The range was smaller during the Spring vacation period than with the groups preceding and succeeding the vacation. There seems to be a slight tendency for Duncan to have a smaller range in number of bowel movements during the period in a home than during the periods in Kent House.

The records kept by each child director were considered by chronological position of the child directors in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of daily bowel movements under all the first child directors, the second child directors and so on are

presented in Table 55.

Table 55. Average Range in Number of Daily Bowel Movements for Duncan with 17 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D. (2 C.D.s)
2.33	2.00	2.00	1.67	.67	2.00

The smallest average range in number of daily bowel movements was .67 with the fifth child directors, with another low point, (1.67), occurring with the fourth child directors, based on material from 3 fifth and 3 fourth child directors. The greatest average range in number of daily bowel movements was 2.33 with the first child directors, based on material from 3 first child directors.

There is a consistent decrease in average range in number of daily bowel movements from the first through the fifth child directors, with an increase of 1.33 from the fifth to the sixth child director. This material suggests a tendency for Duncan to "settle down", and then to respond to forthcoming change by an increase with the sixth child directors. This possible response to forthcoming change is similar to that suggested by the material on mean number of bowel movements for Robin and Duncan but it is not suggested by material on range for Robin.

c. Sociometric Ratings

The scores received by students on sociometric ratings described earlier were considered in relation to the bowel movement records of the infant while he was in their care. Scores on question two indicated how the students felt about each other in the role of child director.

A comparison between the scores on question two and the mean number of bowel movements per day seems to show no consistent relation between the two factors.

Three of the four students receiving the highest scores in their groups on question two were students in whose care Duncan had a mean number of bowel movements above the groups' means; with one student, Duncan had a mean below the group's mean.

Five of the nine students receiving zero score on question two were students in whose care Duncan had a mean number of bowel movements above the groups' means; with four students, Duncan had a mean below the groups' means.

Two students in the first group of Winter term tied for highest score on question two. All of the four students receiving the highest scores in their groups on question two were students in whose care Duncan had a range in number of bowel movements above their groups' average ranges.

Of the nine students receiving zero score on question two, five were students in whose care Duncan had a range in number of bowel

movements below their groups' average ranges, and four were students in whose care Duncan had a range above the groups' average ranges.

There seems to be a tendency for Duncan to have a greater range in number of bowel movements while in the care of those students receiving the highest scores in their groups on question two. The inverse relation is not as clear-cut.

In question ten, each student was asked to describe how she felt with each of her peers in the group by rating them from "very uncomfortable" to "very comfortable." Two students in the second group of Winter term and two in the first group of Spring term tied for highest score in their group on question ten.

A comparison was made between the scores on question ten and the mean number of bowel movements. Of the five students receiving the highest scores in their group on question ten, four were students in whose care Duncan had a mean number of bowel movements below the groups' means; with one, the mean was above the group's mean.

Of the three students receiving the lowest scores in their group on question ten, two were students in whose care Duncan had a mean number of bowel movements above the groups' means, while with one, the mean was below the group's mean.

There may be a slight tendency suggested by this material on Duncan for the mean to be lower while Duncan was in the care of those students receiving the highest scores in their group on question ten. The inverse relation is not as clear-cut but is in the same direction.

A comparison between scores on question ten and the range in number of bowel movements seems to show slight relation between the two factors.

Of the five students receiving the highest scores in their group on question ten, three were students in whose care Duncan had a range in number of bowel movements below their groups' average ranges; with two of the students the range was above the groups' average ranges.

Two of the three students receiving the lowest scores in their groups on question ten were students in whose care Duncan had a range in number of bowel movements above the groups' average ranges; with one, the range was below the group's average range.

There may be a possible tendency suggested by this material for Duncan to have a smaller range in number of bowel movements while in the care of those students receiving the highest scores in their groups on question ten, and a greater range while in the care of those students receiving the lowest scores in their groups on question ten.

2. Records of Feeding

a. Mean Number of Ounces per Day

Table 56. Mean Number of Ounces of Milk per Day Recorded for Duncan by 17 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W I	28.25	29.13	23.20	28.25	29.45	21.75
W II	27.17	24.80	22.67	25.13	24.40	23.90
S I	18.18	24.38	22.42	20.10	19.30	

*W refers to Winter term; S refers to Spring term.

The mean number of ounces consumed daily by Duncan during the time he was in the care of 17 child directors ranged from 18.18 to 29.45 ounces. The mean of 18.18 occurred while Duncan was in the care of the first child director in the first group of Spring term. The mean of 29.45 ounces occurred with the fifth child director in the first group of Winter term.

The mean number of ounces consumed by Duncan during the time he was in Kent House was 24.05. The highest group mean (26.43) occurred while Duncan was in the care of the first group of Winter term. The lowest group mean (20.86) occurred while Duncan was in the care of the first group of Spring term. With the second group of Winter term the mean was 24.70. There seems to be a consistent decrease in mean number of ounces per day with increase in chronological age and/or longer stay in the House.

The mean number of ounces per day consumed by Duncan during

Spring vacation was 21.93 ounces, 2.12 ounces less than the mean during his total time in Kent House. There was a decrease in mean from the second group of Winter term to the Spring vacation, and a decrease from Spring vacation to Spring term. There seems to be a possible tendency for the decrease to be consistent regardless of whether Duncan was in the Home Management House or in a home.

The mean number of ounces consumed daily by Duncan during the time he was in the care of each child director was tabulated by grouping the child directors according to the order in which each cared for Duncan, i.e., the first child director in all groups and all successive child directors in all groups.

Table 57. Mean Daily Number of Ounces of Milk Reported for Duncan by 17 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
24.53	26.10	22.76	24.49	24.38	22.83

The lowest mean number of ounces per day was 22.76 with the third child directors. The highest mean number of ounces per day was 26.10 with the second child directors.

There is a difference of only 3.34 ounces between the lowest and the highest means. This suggests a tendency for Duncan to consume about the same number of ounces with each child director, regardless of her position in the group. The numbers are each based on three child directors, with the exception of the sixth child directors' mean which is based on only 2 child directors.

A comparison of the students' ratings on question two, described earlier, and the mean number of ounces consumed by Duncan suggests a slight tendency for Duncan to consume a higher mean number of ounces per day in the care of those students receiving the highest scores in their groups on question two, but the inverse relation, although in the same direction, is not clear-cut.

Three of the four students receiving the highest scores in their groups on question two were students in whose care Duncan consumed a mean number of ounces per day above the respective groups' means; with one, the mean was below the group's mean.

With five of the nine students receiving zero score on question two, Duncan consumed a mean number of ounces per day below the groups' means; in the care of the other four, the mean was above the groups' means.

A comparison of the students' ratings on question ten and the mean number of ounces consumed daily by Duncan seems to suggest little consistent relation between the two factors. If there is any tendency it is in the direction of consumption of a greater mean number of ounces per day while in the care of those students receiving the highest scores in their group on question ten, and a lower mean number of ounces with those students receiving the lowest scores in their groups on question ten.

While in the care of three of the five students receiving the highest scores in their groups on question ten, Duncan consumed a mean number of ounces per day above the groups' means; with the other two students, the mean was below the group's mean.

While in the care of two of the three students receiving the lowest scores in their groups on question ten, Duncan consumed a mean number of ounces per day below the groups' means; with one student, the mean was above the group's mean.

The results on the comparison between ratings on question ten and mean number of ounces are similar to those found with the other three infants.

b. Range in Number of Ounces per Day

Table 58. Range in Number of Ounces of Milk per Day Recorded for Duncan by 17 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W I	5.50	7.50	6.00	7.25	11.50	3.00
W II	10.25	14.50	11.50	11.00	9.50	4.50
S I	15.50	9.00	6.50	12.50	7.50	

Average range for total period in House - 9.00.

*W refers to Winter term; S refers to Spring term.

Records on feeding were available for seventeen child directors. Records kept on daily number of ounces consumed by Duncan show that the number ranged from 10.50 to 34.25 ounces. The average range in number of ounces per day Duncan consumed during the period he was cared for by seventeen child directors was 9.00. The smallest range in daily number of ounces consumed during the period he was in the care of an individual child director was 3.00. This range occurred during the time Duncan was in the care of the sixth child director in the first group of Winter term. The greatest range in daily number

of ounces consumed during the period Duncan was in the care of an individual child director was 15.50 with the first child director in the first group of Spring term.

The average range in number of ounces per day equalled the median range, which was also 9.00.

Table 59. Average Range in Number of Ounces of Milk per Day by Groups - 17 Child Directors.

	W I	W II	S I
Average Range	6.79	10.21	10.20

There seems to be no tendency for Duncan consistently to increase or decrease in range in number of ounces per day with increase in chronological age and/or longer stay in the Home Management House.

A comparison was made between the range in number of ounces per day when Duncan was in the Home Management House and during Spring vacation when he was in a home.

Table 60. Average Range in Number of Ounces per Day in Home Management House and Range in Number of Ounces per Day in a Home.

H.M.H.*	Smallest and Greatest Range in Number of Ounces	Average Range	Range
W I (6 C.D.s)	3.00 - 11.50	6.79	
W II (6 C.D.s)	4.50 - 14.50	10.21	
Home (7 records)			
Spring			7.50
H.M.H.			
S I (5 C.D.s)	6.50 - 15.50	10.20	

House average range - 9.00

*W refers to Winter term; S refers to Spring term.

The data on range in daily number of ounces consumed by Duncan during the time with each group of students cover a period of approximately 4 to 5 weeks for each group. The range in number of ounces was calculated on 7 daily records for the Spring vacation period.

The Spring vacation range was smaller than the average range in the groups immediately preceding and succeeding the vacation. There may be a tendency for the range to be smaller during care in the home rather than in the Home Management House. Instead, the smaller range when he first entered the House and during vacation might suggest the range drops with change to a new situation. However, the vacation records are so few in number that conclusions can not be based on the information.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in daily number of ounces under all the first child directors and the succeeding child directors by chronological position in each group are presented in Table 61.

Table 61. Average Range in Number of Ounces of Milk Recorded for Duncan by 17 Child Directors According to Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
10.42	10.33	8.00	10.25	9.50	3.75
(Average is 9.00)					

The greatest average range was 10.42, occurring with the first child directors. The smallest average range was 3.75, occurring with the sixth child directors, based on two child directors' records.

The range remains quite constant except for the marked drop with the sixth child directors.

A comparison of the students' ratings on question two and the range in number of ounces per day seems to suggest a possible tendency for Duncan to have a smaller range in number of bowel movements with those students receiving the highest scores in their groups on question two, but the inverse relation is not clear-cut.

With three of the four students receiving the highest scores in their groups on question two, the range in number of ounces was below the groups' average ranges; with one, the range was above the group's average range.

With five of the nine students receiving zero score on question two, the range was above the groups' average ranges; with four the range was below the groups' average ranges.

A comparison was made between the students' scores on question ten and the range in number of ounces per day.

Of the five students receiving the highest scores in their groups on question ten, four were students in whose care Duncan had a range in number of ounces above the groups' average ranges; with one, the range was below the group's average range. With all three students receiving the lowest scores in their groups on question

ten, Duncan had a range in number of ounces below the groups' average ranges.

There seems to be a tendency for Duncan to have a greater range in number of ounces while in the care of those students receiving the highest scores on question ten, and a smaller range with those students receiving the lowest scores on question ten.

c. Mean Number of Ounces per Feeding

Table 62. Mean Number of Ounces of Milk per Feeding Recorded for Duncan by 17 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W I	4.15	6.13	6.11	5.65	7.01	5.22
W II	5.26	5.17	4.86	5.38	4.21	4.60
S I	3.86	5.04	4.64	3.87	3.33	

*W refers to Winter term; S refers to Spring term.

The mean number of ounces per feeding during the period Duncan was in Kent House was 4.86 ounces. Considered by groups, the means were 5.54 with the first group, 4.91 with the second group and 4.14 with the third group. This seems to suggest a tendency for the mean number of ounces per feeding to decrease with increase in chronological age and/or longer stay in the House. This is similar to the possible tendency suggested by corresponding material on Martin.

The mean number of ounces per feeding during the period Duncan was in the care of each of the 17 child directors ranged from 3.33

to 7.01 ounces. The mean of 3.33 occurred while Duncan was in the care of the fifth child director in the first group of Spring term. The mean of 7.01 occurred while Duncan was in the care of the fifth child director in the first group of Winter term.

During Spring vacation, the mean number of ounces per feeding (based on 7 records) was 6.14. This mean was higher than the means of the groups immediately preceding and succeeding the vacation, as well as being higher than the mean number of ounces per feeding during the total period in Kent House. However, the vacation records are too few in number to suggest a conclusive tendency.

A comparison between scores received on question two and the mean number of ounces per feeding seems to show no consistent relation between the two factors.

With two of the four students receiving the highest scores in their groups on question two, Duncan consumed a mean number of ounces per feeding above the groups' means; with the other two students, the mean was below the groups' means.

With five of the nine students receiving zero score on question two, the mean was above the group's means; with the other four students, the mean was below the groups' means.

A comparison between ratings on question ten and the mean number of ounces per feeding seems to show no consistent relation between the two factors.

Of the five students receiving the highest scores in their groups on question ten, three were students in whose care Duncan

consumed a mean number of ounces per feeding above the groups' means; with two, the mean was below the groups' means.

Of the three students receiving the lowest scores in their groups on question ten, two were students in whose care Duncan consumed a mean number of ounces per feeding above the groups' means; with one student, the mean was below the group's mean.

d. Range in Number of Feedings per Day

Table 63. Range in Number of Feedings per Day Recorded for Duncan by 17 Child Directors in 3 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W I	4	2	1	2	1	1
W II	2	2	1	1	3	2
S I	1	3	2	2	1	

*W refers to Winter term; S refers to Spring term.

Records kept on daily number of feedings show that the number ranged from 3 to 9. The average range in daily number of feedings while Duncan was in Kent House was 1.82. The smallest range in daily number of feedings during the period Duncan was in the care of an individual child director was 1. This range occurred 7 times, with the third, fifth, and sixth child directors in the first group of Winter term, the third and fourth child directors in the second group of Winter term, and the first and fifth child directors in the first group of Spring term. In the care of six of these seven child directors, Duncan had a mean number of bowel movements per day

below the groups' means.

The greatest range in daily number of feedings during the time he was in the care of an individual child director was 4. This range occurred with the first child director in the first group of Winter term. With this child director, the mean number of bowel movements was above the group's mean. The median range was 2, slightly greater than 1.82, the average range in number of feedings per day.

The variation in number of feedings per day while Duncan was in the care of 17 child directors can be summarized as follows:

7 cases - range of 1
7 cases - range of 2
2 cases - range of 3
1 case - range of 4

The average range in number of feedings per day while Duncan was in the care of the first group was 1.83; with the second group, the average range was also 1.83, and with the third group the average range was 1.80. The average range remained stable through the three terms.

A comparison was made between the range in number of feedings per day when Duncan was in the Home Management House and during Spring vacation when he was in a home. The average range was 1.82 when he was in Kent House, and the range was 1.00 when he was in a home. There seems to be a slight tendency for Duncan to have a smaller range in number of feedings per day when he was in a home, but the vacation records number only 7, which seems to be too small a number on which to base any conclusive tendency.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of feedings per day are presented in Table 64.

Table 64. Average Range in Number of Daily Feedings with 17 Child Directors by Chronological Position of Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
2.33	2.33	1.33	1.66	1.66	1.50
Average range is 1.82.					

Duncan seems to have a greater average range in number of feedings per day while in the care of the first two child directors than with the four succeeding child directors. This seems to suggest a possible tendency for Duncan to "settle down" in relation to range in number of feedings per day. A similar tendency was suggested by corresponding material on Carl.

A comparison was made between the results on question two and the range in number of feedings per day. There seems to be no consistent relation between the two factors, based on material for Duncan.

Of the four students receiving the highest scores in their groups on question two, three were students in whose care Duncan had a range in number of feedings per day greater than the groups' average ranges; with one student, the range was smaller than the group's average range.

Of the nine students receiving zero score on question two, five were students in whose care Duncan had a range in number of feedings per day greater than the groups' average ranges; with four, the range was smaller than the groups' average ranges.

A comparison was made between the scores on question ten and the range in number of feedings per day. There seems to be a slight tendency for Duncan to have a smaller range in number of feedings per day with those students receiving the highest scores in their groups on question ten, and a greater range with those students receiving the lowest scores in their groups on question ten.

With four of the five students receiving the highest scores in their groups on question ten, the range in number of feedings per day was smaller than the groups' average ranges; with one student, the range was greater than the group's average range.

With two of the three students receiving the lowest scores in their groups on question ten, the range in number of feedings per day was greater than the groups' average ranges; with one student, the range was smaller than the group's average range.

E. Case V - Patty

Patty was born on December 26, 1954, and entered Withycombe House on February 15, 1955, at the age of seven weeks and two days. On February 17, 1955, her weight was recorded as eleven pounds and one ounce. Patty was examined by a local pediatrician on February 17, 1955. She remained in Withycombe House, except during Spring vacation, until May 26, 1955, a period of fourteen weeks and two days. On May 26, 1955, when she was twenty-one weeks and four days of age, Patty was returned to the institution in Portland, from which she was adopted in the summer of 1955. During her stay in Withycombe House, Patty was cared for by three groups of students, or a total of eighteen child directors, under the supervision of one resident advisor.

1. Records of Bowel Movements

a. Mean Number of Bowel Movements per Day

Table 65. Mean Number of Daily Bowel Movements for Patty with 18 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	3.50	2.83	2.40	2.50	2.50	2.60
S I	3.00	2.40	2.20	2.00	2.20	2.00
S II	2.00	1.60	2.00	2.00	1.75	2.33

Mean for total period in House - 2.31.

*W refers to Winter term; S refers to Spring term.

The mean number of bowel movements per day during the total period Patty was in the Home Management House was 2.31. The means by groups were 2.63 with the first group, 2.31 with the second group, and 1.92 with the third group. This may suggest a tendency for the mean number of bowel movements per day to decrease with increase in chronological age and/or longer stay in the House. This possible tendency was found in corresponding material on Robin. Martin, Carl, and Duncan showed no consistent tendency to increase or decrease in mean with increase in chronological age and/or longer stay in the House.

During Spring vacation (records for 9 days), the mean was 1.66. This is lower than the means occurring with the groups immediately preceding and succeeding the vacation. The vacation mean was .65 lower than the mean for Patty's total period in the House. This material may suggest a possible tendency for Patty to have a lower mean number of bowel movements when in the home than when in the Home Management House. This tendency is similar to that suggested by corresponding material on Martin. Carl and Duncan showed a tendency for a higher mean in a home. No comparison was possible for Robin.

The mean number of daily bowel movements during the period Patty was cared for by 18 child directors ranged from 1.60 to 3.50. The mean of 1.60 occurred with the second child director in the second group of Spring term. The mean of 3.50 occurred with the first child director in the first group of Winter term.

The records kept by each child director were considered by days. The mean number of bowel movements Patty had on the first and each succeeding day with all child directors is presented in Table 66.

Table 66. Mean Number of Daily Bowel Movements for Patty with 18 Child Directors Considered by Days.

1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day
2.44	2.22	2.35	2.31	2.15	2.40

The means for Patty remain very constant, with a difference of only .29 between the lowest and the highest. The lowest mean, 2.15, occurred on the fifth day of care with another low mean, 2.22, occurring on the second day of care. The highest mean, 2.44, occurred on the first day of care with another high mean (2.40) occurring on the sixth day of care.

There was a consistent decrease in mean from the third through the fifth days, with an increase on the sixth, which may suggest a tendency for Patty to "settle down", and then to respond to forthcoming change by an increase, similar to those possible tendencies suggested by the corresponding material on Robin.

The mean number of daily bowel movements during the time Patty was in the care of the 18 child directors was tabulated by grouping the child directors according to the order in which each cared for Patty, i.e., the first child directors in all groups and each successive child director in all groups.

Table 67. Mean Number of Daily Bowel Movements for Patty with 18 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
2.83	2.28	2.20	2.17	2.15	2.31

Mean of these means is 2.32.

The highest mean (2.83) occurred when Patty was in the care of the first child directors, with the second highest mean (2.31) occurring with the sixth child directors. The lowest mean number of bowel movements per day (2.15) occurred when Patty was in the care of the fifth child directors, with another low mean (2.17) occurring with the fourth child directors.

There is a steady though slight decrease in mean from the first child directors through the fifth child directors, suggesting a possible tendency for Patty to "settle down." The increase from the fifth to the sixth child directors may suggest a slight tendency for Patty to respond to forthcoming change, similar to the possible tendency suggested by corresponding material on Robin and Duncan.

The Appendix contains a graph which gives the number of bowel movements each day for each of the five infants by chronological age in weeks and days. For Patty, there seems to be an absence of established pattern in number of bowel movements per day.

b. Range in Number of Bowel Movements per Day

Table 68. Lowest and Highest Number of Daily Bowel Movements Recorded for Patty During Care by 18 Child Directors in 3 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	3-4	1-4	2-3	2-3	2-3	2-3
S I	2-4	1-3	2-3	1-3	2-3	1-3
S II	1-4	1-2	2-2	2-2	1-2	2-3

*W refers to Winter term; S refers to Spring term.

Records for Patty on bowel movements were available from 18 child directors. The records kept on the number of bowel movements per day for Patty showed that the number ranged from 1 to 4. The range which occurred most frequently (7 times) during the period she was in the care of an individual child director was from 2 to 3, or a range of one. The smallest range in number of daily bowel movements during one period was zero. The greatest range was between 1 and 4, or a range of 3. This variation occurred twice, when she was in the care of the second child director in the second group of Winter term, and the first child director in the second group of Spring term.

Variation in number of daily bowel movements while the infant was in the care of each of the 18 child directors may be summarized as follows:

2 cases - range of 0
 Mode - 10 cases - range of 1
 4 cases - range of 2
 2 cases - range of 3

Patty's characteristic pattern seems to be a variation of 1 in number of daily bowel movements during the time she was in the care of an individual child director. This range occurred five times in the second group of Winter term, twice in the first group of Spring term, and three times in the second group of Spring term. The first group mentioned seems to be the most consistent, which may suggest a slight tendency for the range in number of bowel movements to increase with increase in chronological age and/or longer stay in the House.

A comparison was made between the range in number of bowel movements that Patty had during the time she was in Withycombe House and during Spring vacation when she was in a home (see Table 69)

Table 69. Lowest and Highest Number of Daily Bowel Movements Recorded by Groups in the Home Management House and at Vacation Times.

House W II	Spring (9 records)	House	
		S I	S II
1-4	1-2	1-4	1-4

The data on range in Patty's number of daily bowel movements during the time with each group of students covered a period of approximately 4 to 5 weeks for each group. The range in Patty's number of daily bowel movements was calculated on 9 daily records during Spring vacation.

The range was smaller during the Spring vacation period than with the groups preceding and succeeding the vacation. However, because the vacation records numbered only 9, it is difficult to draw any conclusions from the material.

The records kept by each child director were considered by chronological position of the child directors in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of daily bowel movements under all the first child directors, the second child directors and so on are presented in Table 70.

Table 70. Average Range in Number of Daily Bowel Movements for Patty with 18 Child Directors by Position as Child Directors.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
2.00	2.00	.66	1.00	1.00	1.33

The smallest average range in number of daily bowel movements was .66 with the third child directors, with another low point (1.00) occurring with the fourth and fifth child directors. The greatest average range was 2.00 with the first and second child directors.

There seems to be a tendency for Patty to "settle down" with the third, fourth, and fifth child directors, similar to the tendency for Martin to "settle down" with the fifth and sixth child directors, for Carl and Robin to "settle down" with the fourth, fifth, and sixth child directors, and for Duncan to "settle down" with the fourth and fifth child directors.

There is a slight increase from the fifth to the sixth child directors, perhaps suggesting a tendency for Patty to respond to forthcoming change similar to that found in corresponding material on Duncan.

c. Sociometric Ratings

The scores received by students on sociometric ratings described earlier were considered in relation to the bowel movement records of the infant while she was in their care. Scores on question two indicated how the students felt about each other in the role of child director.

A comparison between scores on question two and the mean number of bowel movements per day seems to suggest a tendency for Patty to have a higher number of bowel movements while in the care of those students receiving the highest scores in their groups on question two, and a lower number of bowel movements with those students receiving zero score on question two. This tendency is similar to the tendency suggested by the corresponding material on Robin. Martin showed a slight tendency for lower mean with students receiving highest scores, but the inverse was not clear-cut. Carl seemed to show a tendency in this direction, but neither was clear-cut. There was no consistent relation between these two factors in the material on Duncan.

Of the five students receiving the highest scores in their groups on question two, four were students in whose care Patty had

a mean number of bowel movements above the groups' means. With one student, the mean was below the group's mean.

Of the eleven students receiving zero score on question two, seven were students in whose care Patty had a mean number of bowel movements below the groups' means; with four students, the mean was above the groups' means.

Three students in the second group of Spring term tied for highest score in their group on question two, making a total of five students receiving the highest scores on question two. Two of the five students with the highest scores in their groups on question two were students in whose care Patty had a range in number of bowel movements below their groups' average ranges; with two students, the range was above the groups' average ranges, and with one, the range was equal to the group's average range.

Of the eleven students receiving zero score on question two, five were students in whose care Patty had a range in number of bowel movements below the groups' average ranges; with four students, the range was above the groups' average ranges, and with two, the range was equal to the group's average range.

There seems to be little relation between the scores on question two and the range in number of bowel movements. There was little relation between these two factors found in corresponding material for Martin; Carl showed a tendency to have a greater range with those students receiving zero score, but the inverse was not clear-cut. Robin showed a tendency to have a greater range with those receiving

zero score, but neither was clear-cut. Duncan showed a tendency for greater range with those receiving the highest scores, but the inverse was not clear-cut.

In question ten, each student was asked to describe how she felt with each of her peers in the group by rating them from "very uncomfortable" to "very comfortable." Two students in the second group of Winter term tied for highest score, and two students in the same group tied for lowest score on question ten, making a total of four students receiving the highest scores and four students receiving the lowest scores in the three groups.

A comparison was made between the scores on question ten and the mean number of bowel movements. There seems to be a slight tendency for Patty to have a lower mean number of bowel movements with those students receiving the lowest scores in their group on question ten. The inverse relation does not seem to exist.

Of the four students receiving the highest scores in their groups on question ten, two were students in whose care Patty had a mean number of bowel movements per day above the groups' means; with two, Patty had a mean number of bowel movements below the groups' means.

With all of the four students receiving the lowest scores in their groups on question ten, Patty had a mean number of bowel movements below the groups' means.

A comparison between the scores on question ten and the range in number of bowel movements seems to suggest a slight tendency for

Patty to have a smaller range in number of bowel movements with those child directors receiving the highest scores in their groups on question ten. The inverse relation does not seem to exist.

With all of the four students receiving the highest scores in their groups on question ten, Patty had a range in number of bowel movements below the groups' average ranges.

With two of the four students receiving the lowest scores in their group on question ten, Patty had a range in number of bowel movements below the group's average range; with one student, the range was equal to the group's average range; and with the other, the range was greater than the group's average range.

2. Records of Feeding

a. Mean Number of Ounces per Day

Table 71. Mean Number of Ounces of Milk per Day Recorded for Patty by 18 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	30.25	27.92	26.30	26.92	28.51	26.68
S I	32.92	33.80	35.00	31.60	30.80	29.42
S II	31.50	29.90	31.50	34.40	29.25	32.67

*W refers to Winter term; S refers to Spring term.

The mean number of ounces consumed daily by Patty during the time she was in the care of 18 child directors ranged from 26.30 to 35.00 ounces. The mean of 26.30 occurred while Patty was in the care of the third child director in the second group of Winter term.

The mean of 35.00 ounces occurred with the third child director in the first group of Spring term.

The mean number of ounces consumed by Patty during the time she was in Withycombe House was 30.39. The highest group mean (32.19) occurred while Patty was in the care of the first group of Spring term. The lowest group mean (27.52) occurred while Patty was in the care of the second group of Winter term. With the second group of Spring term the mean was 31.54. There seems to be no consistent increase or decrease in mean number of ounces per day by groups with increase in chronological age and/or longer stay in the House.

The mean number of ounces per day consumed by Patty during Spring vacation was 29.35 ounces, 1.04 ounces less than the mean during her total time in Withycombe House. There was an increase of 1.83 in mean from the second group of Winter term to the Spring vacation, and an increase of 2.84 from Spring vacation to the first group of Spring term. There seems to be a slight possible tendency for Patty to consume a higher mean number of ounces per day when in the Home Management House than when in a home during vacation.

The mean number of ounces consumed daily by Patty during the time she was in the care of each child director was tabulated by grouping the child directors according to the order in which each cared for Patty, i.e., the first child director in all groups and all successive child directors in all groups.

Table 72. Mean Daily Number of Ounces of Milk Reported for Patty by 18 Child Directors by Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
31.56	30.54	30.93	30.97	29.52	29.59

The lowest mean number of ounces per day was 29.52 with the fifth child directors. The highest mean number of ounces per day was 31.56 with the first child directors.

There is a difference of only 2.04 ounces between the lowest and highest means. This suggests a tendency for Patty to consume about the same number of ounces with each child director, regardless of her position in the group. Each number is based on three child directors.

A comparison of the students' ratings on question two, described earlier, and the mean number of ounces consumed by Patty seems to suggest little relation between the two factors.

Of the five students receiving the highest scores in their groups on question two, three were students in whose care Patty consumed a mean number of ounces per day higher than the groups' means; two were students in whose care Patty consumed a mean number of ounces below the groups' means.

Of the eleven students receiving zero score on question two, six were students in whose care Patty consumed a mean number of ounces below the groups' means; five were students in whose care Patty consumed a mean number of ounces above the groups' means.

If there is any relation between these two factors, it is in the direction of consumption of a higher mean number of ounces with those students receiving the highest scores in their groups on question two and a lower mean number of ounces with those students receiving zero score on question two.

A comparison of the students' ratings on question ten and the mean number of ounces consumed daily by Patty seems to suggest little relation between the two factors.

Of the four students receiving the highest scores in their groups on question ten, two were students in whose care Patty consumed a mean number of ounces above the groups' means; with two students, the mean was below the groups' means.

Of the four students receiving the lowest scores in their groups on question ten, three were students in whose care Patty consumed a mean number of ounces below the groups' means; with one, the mean was above the group's mean.

If there is any tendency, it is in the direction of a lower consumption of ounces per day with those students receiving the lowest scores in their groups on question ten.

b. Range in Number of Ounces per Day

Records on feeding were available for eighteen child directors. Records kept on daily number of ounces consumed by Patty show that the number ranged from 18.00 to 42.00 ounces. The average range in number of ounces per day Patty consumed during the period she was

Table 73. Range in Number of Ounces of Milk per Day Recorded for Patty by 18 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	.50	7.75	15.50	6.00	2.17	6.91
S I	15.00	11.00	14.50	13.00	14.00	8.00
S II	7.00	7.00	7.00	14.00	5.00	10.00

Average range for total period in House - 9.16.

*W refers to Winter term; S refers to Spring term.

cared for by eighteen child directors was 9.16. The smallest range in daily number of ounces consumed during the period she was in the care of an individual child director was .50. This range occurred during the time Patty was in the care of the first child director in the second group of Winter term based on two days' records. The greatest range in daily number of ounces consumed by Patty while she was in the care of an individual child director was 15.50 with the third child director in the second group of Winter term.

The average range in number of ounces per day was 9.16. The median range was between 7.75 and 8.00

Table 74. Average Range in Number of Ounces of Milk per Day by Groups - 18 Child Directors.

	W II	S I	S II
Average range	6.47	12.67	8.33

There seems to be no tendency for Patty consistently to increase or decrease in range in number of ounces per day by groups with increase in chronological age and/or longer stay in the House.

A comparison was made between the average range in number of ounces per day when Patty was in the Home Management House and the range during Spring vacation when she was in a home.

Table 75. Average Range in Number of Ounces per Day in Home Management House and Range in Number of Ounces per Day in a Home.

H.M.H.*	Smallest and Greatest Range in Number of Ounces	Average Range	Range
W II (6 C.D.s)	.50 - 15.50	6.47	
Home (10 records)			
Spring			10.00
H.M.H.			
S I (6 C.D.s)	8.00 - 15.00	12.67	
S II (6 C.D.s)	7.00 - 14.00	8.33	

House average range - 9.16

*W refers to Winter term; S refers to Spring term.

The range in number of ounces per day in a home was greater than the average range of the group immediately preceding it and smaller than the average range of the group immediately succeeding the vacation. The vacation range was greater than the average range for the total period in Withycombe House.

There might be a slight tendency suggested by this material for the range in number of ounces per day to be greater when Patty was in a home than when she was in the Home Management House.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in daily number of ounces under all the first child directors and the succeeding child directors by chronological position in each group are presented in Table 76.

Table 76. Average Range in Number of Ounces of Milk Recorded for Patty by 18 Child Directors According to Position as Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
7.50	8.75	12.33	11.00	7.06	8.30
(Average is 9.16)					

The smallest average range in number of ounces per day (7.06) occurred with the fifth child directors, with another small range (7.50) occurring with the first child directors. The greatest average range (12.33) occurred with the third child directors, with the next greatest range (11.00) occurring with the fourth child directors.

The lowest mean number of bowel movements and the second lowest range in number of bowel movements occurred while Patty was in the care of the fifth child directors, but the highest mean number of bowel movements and the greatest range in number of bowel movements occurred while Patty was in the care of the first child directors in whose care Patty had the second smallest average range in number of ounces. Therefore, the material on Patty does not confirm or bear out the corresponding material on Martin.

A comparison of the students' ratings on question two and the range in number of ounces per day seems to show little relation between the two factors.

Of the five students receiving the highest scores in their groups on question two, three were students in whose care Patty had a range in number of ounces above the groups' average ranges; with two, the range was smaller than the groups' average ranges.

Of the eleven students receiving zero score on question two, seven were students in whose care Patty had a range in number of ounces below the groups' average ranges; with four, the range was above the groups' average ranges.

This seems to suggest a slight tendency for Patty to have a smaller range in number of ounces when in the care of those students receiving zero score on question two; however, the inverse relation is not clear-cut.

A comparison was made between the students' scores on question ten and the range in number of ounces per day. There seems to be little relation between the two factors.

Of the four students receiving the highest scores in their groups on question ten, two were students in whose care Patty had a range in number of ounces smaller than the groups' average ranges; with two students, the range was greater than the groups' average ranges.

Of the four students receiving the lowest scores in their groups on question ten, three were students in whose care Patty had a range

in number of ounces smaller than the groups' average ranges; with one, the range was greater than the group's average range.

There may be a slight tendency for Patty to have a smaller range in number of ounces with those students receiving the lowest scores in their groups on question ten. The inverse relation, however, is not evident.

c. Mean Number of Ounces per Feeding

Table 77. Mean Number of Ounces of Milk per Feeding Recorded for Patty by 18 Child Directors.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	4.65	4.65	5.26	5.38	5.70	5.34
S I	7.05	6.76	7.00	6.87	7.00	7.06
S II	7.00	6.80	7.00	6.88	6.88	7.54

*W refers to Winter term; S refers to Spring term.

The mean number of ounces per feeding during the period Patty was in Withycombe House was 6.30. Considered by groups, the means were 5.19 with the first group, 6.96 with the second group, and 6.98 with the third group. This seems to suggest a slight tendency for the mean number of ounces per feeding to increase with increase in chronological age and/or longer stay in the House.

The mean number of ounces per feeding during the period Patty was in the care of each of the 18 child directors ranged from 4.65 to 7.54 ounces. The mean of 4.65 occurred while Patty was in the care of the first and second child directors in the second group of Winter term. The mean of 7.54 occurred while Patty was in the care of the

sixth child director in the second group of Spring term.

During Spring vacation, the mean number of ounces per feeding (based on 10 records) was 5.87 ounces. This mean was .68 higher than the mean of the group immediately preceding the vacation, and 1.77 ounces lower than the mean of the group immediately succeeding the vacation. Considering the House mean of 6.30 and the vacation mean of 5.87, this material seems to suggest a possible tendency for Patty to consume more ounces per feeding when in the House than when in a home even though she consumed a higher mean on vacation than with the second group of Winter term.

A comparison between scores received on question two and the mean number of ounces per feeding seems to show little relation between the two factors.

Of the five students receiving the highest scores in their groups on question two, four were students in whose care Patty consumed a mean number of ounces per feeding above the groups' means; with one, the mean was below the group's mean.

Of the eleven students receiving zero score on question two, six were students in whose care Patty consumed a mean number of ounces per feeding below the groups' means; with five students, the mean was above the groups' means.

If there is any tendency, it is in the direction of a higher consumption of ounces per feeding with those students receiving the highest scores in their groups on question two, and a lower consumption of ounces per feeding with those students receiving zero score

on question two.

A comparison between scores on question ten and the mean number of ounces per feeding seems to show little relation between the two factors.

Of the four students receiving the highest scores in their groups on question ten, two were students in whose care Patty consumed a mean number of ounces per feeding above the groups' means; with the other two students, the mean was below the groups' means.

Of the four students receiving the lowest scores in their groups on question ten, three were students in whose care Patty consumed a mean number of ounces per feeding above the groups' means; with one, the mean was below the group's mean.

If there is any tendency, it is in the direction of a higher consumption of ounces per feeding while in the care of those students receiving the lowest scores in their groups on question ten.

d. Range in Number of Feedings per Day

Table 78. Range in Number of Feedings per Day Recorded for Patty by 18 Child Directors in 3 Groups.

Group*	1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
W II	1	0	2	0	0	0
S I	2	2	2	2	2	1
S II	1	1	1	2	1	1

*W refers to Winter term; S refers to Spring term.

Records kept on daily number of feedings show that the number ranged from 4 to 7. The average range in daily number of feedings during the period Patty was in Withycombe House was 1.17. The smallest range in daily number of feedings during the period Patty was in the care of an individual child director was zero. This range occurred four times, with the second, fourth, fifth and sixth child directors in the second group of Winter term. The greatest range in daily number of feedings during the time she was in the care of an individual child director was 2. This range occurred seven times, with the third child director in the second group of Winter term, the first, second, third, fourth and fifth child directors in the first group of Spring term, and the fourth child director in the second group of Spring term.

The median range was 1, slightly smaller than 1.17, the average range in number of feedings per day.

The variation in number of feedings per day when Patty was in the care of 18 child directors can be summarized as follows:

4 cases - range of 0
7 cases - range of 1
7 cases - range of 2

The average range in number of feedings per day while Patty was in the care of the first group was .50; with the second group, the average range was 1.83, and with the third group the average range was 1.17. There seems to be no tendency for the range in number of feedings per day to increase or decrease consistently with increase in chronological age and/or longer stay in the House.

A comparison was made between the range in number of feedings per day when Patty was in the Home Management House and during Spring vacation when she was in a home. The average range was 1.17 when she was in Withycombe House, and the range was 2.00 when she was in a home. There seems to be a slight tendency for Patty to have a greater range in number of feedings per day when she was in a home than when she was in Withycombe House.

The records kept by each child director were considered by chronological position of the child director in each group, i.e., the first and each succeeding child director in each group. The data on average range in number of feedings per day are presented in Table 79.

Table 79. Average Range in Number of Daily Feedings with 18 Child Directors by Chronological Position of Child Director.

1st C.D.	2nd C.D.	3rd C.D.	4th C.D.	5th C.D.	6th C.D.
1.33	1.00	1.67	1.33	1.00	.67
Average range is 1.17					

The smallest average range in number of feedings per day (.67) occurred with the sixth child directors. The greatest average range in number of feedings per day (1.67) occurred with the third child directors.

There is a consistent decrease from the peak on the third day through the sixth day, which may suggest a slight possible tendency for Patty to be "settling down."

A comparison was made between the results on question two and

the range in number of feedings per day. There seems to be no consistent relation between the two factors, based on material for Patty.

Of the five students receiving the highest scores in their groups on question two, three were students in whose care Patty had a range in number of feedings below the groups' average ranges; with two students, the range was greater than the groups' average ranges.

Of the eleven students receiving zero score on question two, seven were students in whose care Patty had a range in number of feedings per day below the groups' average ranges; with four students, the range was above the groups' average ranges.

A comparison was made between the scores on question ten and the range in number of feedings per day. There seems to be a tendency for Patty to have a greater range while in the care of those students receiving the highest scores in their groups on question ten, and a smaller range in number of feedings with those students receiving the lowest scores in their groups on question ten.

Of the four students receiving the highest scores in their groups on question ten, three were students in whose care Patty had a range in number of feedings per day above the groups' average ranges; with one student, the range was smaller than the group's average range.

All of the four students who received the lowest scores in their groups on question ten were students in whose care Patty had a range in number of feedings smaller than the groups' average range.

V. SUMMARY OF RESULTS

A. Bowel Movements

1. Mean Number of Bowel Movements per Day

The figures on mean number of bowel movements per day for these infants suggests one possible relationship.

When the chronological position of child directors from first to sixth is considered in relation to the infants' mean number of daily bowel movements, all the infants seem to have a high point in mean number of daily bowel movements during their care by the first and/or second child director(s). For Carl, Robin, and Patty, the highest means occurred with the first child directors. The means for Martin during care by the first and second child directors were only .03 and .02 less than his highest point of 2.92. For Duncan, the highest mean occurred while he was in the care of the second child directors. The results suggest that the infants' response to a new group of students may be an increase in number of bowel movements per day.

The smallest range and the lowest mean number of bowel movements occurred with the same child directors in the cases of Martin, Carl, and Duncan. Patty had the second smallest range in number of bowel movements with the fifth child directors, in whose care she had the lowest mean number of bowel movements. Robin's records, on the other hand, show the reverse. Martin is the only infant who also had the

greatest range and the highest mean number of bowel movements in the care of the same child director.

There seems to be no consistent tendency for increase or decrease in mean number of bowel movements with increase in chronological age and/or longer stay in the House. Material on Martin, Carl, and Duncan showed no consistent tendency. Robin and Patty showed a tendency to decrease with increase in chronological age and/or longer stay in the House. Duncan, one of the older babies, had the lowest mean number of bowel movements per day (2.08), while Carl, who was about the same age, had the highest mean number, 3.24.¹ Robin's mean of 3.19 is high, and Robin was the youngest infant on leaving the House. These figures might suggest a relation between age on leaving the Home Management House and the mean number of bowel movements, but a ranking of the infants by age on leaving the Home Management House and their respective mean number of bowel movements fails to reveal a relation.

A comparison was made between mean number of bowel movements during the time in the House and vacation periods for four of the infants. (The bowel movement records for Robin's Thanksgiving vacation were not available). The results do not indicate any consistent differences in mean number of bowel movements during House and vacation periods in the cases of these four infants. Martin and Patty seemed to show lower means during vacation periods.

¹The mean of 3.24 included five groups of students. Only three of these groups were included in the study and his mean with the three groups used was 3.08.

and Carl and Duncan seemed to show higher means during vacation periods.

In comparing the mean number of bowel movements by days with each child director, there was found to be little difference in means. The greatest difference between highest and lowest means considered by days was 1.02, found in Duncan's records. (Otherwise, the means were quite constant for Duncan). The smallest difference was .29, found in Patty's records.

2. Range in Number of Bowel Movements

The infants' responses to child directors considered by chronological position of director are varied. If a decrease in range in number of bowel movements indicates a "settling down" by the infant, Martin's records seem to show a "settling down" with the fifth and sixth child directors, and Carl's records seem to show a "settling down" with the fourth through the sixth child directors.

Robin may have shown his "settling down" in the opposite way, i.e., by an increase in range in number of bowel movements with the fourth through the sixth child directors. Robin showed a marked increase in bowel movements with the second and third child directors, which may have been his response to group change.

A response to forthcoming change in groups may be indicated by material on two infants. Duncan seemed to show a decrease in range in number of bowel movements while in the care of the fourth and fifth child directors, with a marked increase with the sixth child

directors. Patty seemed to show a decrease in range in number of bowel movements with the third through the fifth child directors, with an increase with the sixth child directors.

Another method of examining the range in number of bowel movements considered by chronological position of the child directors might be to find a similarity in peaks of range in number of bowel movements. With the exception of Robin, all of the infants showed peaks early in their care by groups. (Robin showed the lowest points while in the care of the second and third child directors, which may indicate a tendency to respond in an opposite way from the other infants). Martin and Duncan showed high points while in the care of the first child directors. Carl showed a peak with the second and third child directors. Patty showed a peak while in the care of the first and second child directors. These high points early in care by groups of child directors may indicate response to change in groups. As previously mentioned, there was a second peak, not as high, with the sixth child directors in the case of three of the infants (Duncan, Robin, and Patty).

There seems to be no relation between chronological age of the infants and the most frequent range in daily number of bowel movements when cared for by individual child directors. The greater chronological age of Martin, Carl, and Duncan and the lesser chronological age of Robin and Patty did not seem to affect the infants' modes in respect to range in daily number of bowel movements.

Martin (at Withycombe House from seven weeks and four days

of age to forty-two weeks and five days of age), Carl (at Kent House from seven weeks and six days of age to thirty-three weeks and five days of age), and Robin (at Withycombe House from six weeks and two days of age to seventeen weeks and three days of age) showed a mode of two in range in number of bowel movements when cared for by individual child directors. Duncan (at Kent House from twenty weeks and six days of age to thirty-six weeks of age) and Patty (at Withycombe House from seven weeks and two days of age to twenty-one weeks and four days of age) showed a mode of one in range in number of bowel movements when cared for by individual child directors.

There seems to be no relation between chronological age and median range in number of bowel movements. Martin, Carl, Robin, and Duncan showed a median range of two in number of bowel movements. Patty's records showed a median range of one. The records of Martin, Carl, and Robin included material when they were the chronological age of Patty. The records on Duncan are those of an older infant. However, Duncan's median range is two, as was that of Martin, Carl, and Robin, while Patty's median range is one. Duncan is the only infant for whom mode and median differ in number.

There seems to be no consistent trend in results when the average range in number of bowel movements in the Home Management House is compared with the range during vacations. The ranges for both of Martin's vacation periods and Carl's Spring vacation period were smaller than their characteristic variation of two. The ranges for Carl's Summer vacation period and Duncan's Spring vacation period

were greater than their characteristic variations of two and one respectively. The range during Patty's Spring vacation period was equal to her characteristic variation of one. Bowel movement records were not available for Robin's vacation period.

3. Bowel Movement Records and Sociometric Data

A comparison between bowel movement records and sociometric data (results on questions two and ten) seemed to reveal no consistent relation between the factors. Tendencies indicated by comparisons of some infants' records with the sociometric data were either contradicted or not borne out by results of comparisons of other infants' records with sociometric data (see Table 80).

B. Feeding

1. Mean Number of Ounces of Milk per Day

There seems to be almost a direct correlation between age at leaving the Home Management House and the mean number of ounces of milk consumed per day by the infants.

<u>Age at Leaving Home Management House</u>	<u>Infant</u>	<u>Mean Number of Ounces per Day</u>
17 weeks, 3 days	Robin	31.75
21 weeks, 4 days	Patty	30.39
33 weeks, 5 days	Carl	28.30
36 weeks, 0 days	Duncan	24.05
42 weeks, 5 days	Martin	24.95

Robin was the infant who left the Home Management House at the youngest age (17 weeks, 3 days). He consumed the highest mean number of ounces per day (31.75). Martin was the infant who left

Table 80. Results of Comparison of Sociometric Data with Bowel Movement Records of Five Infants

Question 2 - Mean		Question 2 - Range		Question 10 - Mean		Question 10 - Range	
Infants	Result	Infants	Result	Infants	Result	Infants	Result
2	Higher mean with highest score	2	Greater range with zero score	3	Lower mean with highest score (1 not clear-cut)	3	Smaller range with highest score (1 not clear-cut)
2	Lower mean with zero score	2	No consistent relation	1	Lower mean with lowest score	2	No consistent relation
1	No consistent relation	1	Greater range with highest scores	1	No consistent relation		

the Home Management House at the oldest chronological age (42 weeks, 5 days). He consumed a mean number of ounces (24.95) only .9 ounces greater than the lowest mean (24.05), which was consumed by Duncan who left the Home Management House at the age of 36 weeks.

Material on mean number of ounces consumed daily by the five infants (considered by terms or groups) seems to suggest no consistent tendency for the mean to increase or decrease with increase in chronological age and/or longer stay in the House. However, this comparison is made regardless of the infants' relative chronological ages, and may reflect a lack of tendency to increase or decrease with longer stay in the House. Martin and Duncan seemed to show a decrease in mean; Robin seemed to show an increase, and neither Carl nor Patty seemed to show consistent increase or decrease in mean.

A comparison between mean number of ounces consumed during stay in the Home Management House and during college vacation periods seems to suggest no consistent tendency for the five infants. Of seven vacation periods spent in a home by the five infants, five were periods during which the infants consumed a higher mean number of ounces per day than the mean for the respective total periods in the House. Only Duncan and Patty consumed a lower mean number of ounces per day in the home than during their entire periods in the Home Management Houses. Therefore, three of the five infants consumed a higher mean number of ounces per day in the home than in the Home Management House. The numbers are too small for any conclusion to be based on them.

It was found that all of the infants, except Robin, seemed to have a higher mean number of bowel movements with greater consumption of milk and a corresponding lower mean number of bowel movements with lower consumption of milk. Martin, Carl, and Patty had the highest mean number of bowel movements while in the care of the child directors with whom they consumed the highest mean number of ounces per day, and the lowest mean number of bowel movements with those child directors in whose care they consumed the lowest mean number of ounces per day. The material on Duncan suggests this relation, with consumption of the highest mean number of ounces while in the care of those child directors with whom he had the highest mean number of bowel movements per day. With those child directors in whose care he consumed the lowest mean number of ounces per day, Duncan had a mean number of bowel movements per day (2.20) only .05 higher than the lowest mean (2.15). The corresponding material on Robin seems to suggest no similar relation between these two factors, but rather suggests a similar relation between mean number of ounces per day and range in number of bowel movements. The material on all infants except Robin suggests that with a decrease or increase in milk intake, there is a corresponding decrease or increase in number of bowel movements.

When the scores on question two of the sociometric questionnaire and the mean number of ounces per day are compared, there seems to be no consistent relation between the two factors. The material on Carl and Robin seemed to suggest a lower mean with those students

rated highest in their groups on question two; the material on Duncan and Patty seemed to suggest a higher mean with those students rated highest in their groups on question two, and the material on Martin suggested no consistent tendency.

The comparison between scores on question ten and the mean number of ounces per day suggests a relation between how "comfortable" a students' peers feel with her and the mean number of ounces consumed by the infant while in her care. The material for Martin, Carl and Robin presents a rather clear-cut suggestion of lower means with those students receiving the lowest scores in their groups on question ten. Although the inverse relation was not clear-cut with any of the three infants, the tendency was in the direction of higher mean with those students receiving the highest scores in their groups on question ten. The corresponding material on Duncan and Patty suggests a relation in the same direction, but neither is as clear-cut as the material on Martin, Carl, and Robin.

2. Range in Number of Ounces per Day

There seems to be little consistent relationship between range in daily number of ounces consumed by the infants with each child director and position of the child director in the group, i.e., first child director, second child director, and so on. However, the greatest average range occurred with one of the first three child directors in the case of all infants except Martin, and the smallest average range occurred with one of the last three child directors

in the case of all infants except Robin. This may suggest some tendency to respond to change by an increased range in daily number of ounces consumed.

There seems to be no relation between chronological age and median or average range in number of ounces per day. The highest average range (11.75) and the highest median range (10.00) were found in data for Martin on range in number of ounces per day. The smallest average range (6.15) and the smallest median range (6.00) were found in data for Carl on range in number of ounces per day. The records for these two infants cover the longest spans of time of the five infants, thus the greatest ranges in chronological age.

The lack of relation between range in number of ounces per day and chronological age seems to be borne out by material on range in number of ounces per day considered by groups. Carl, Duncan, and Patty showed no tendency consistently to increase or decrease in range in number of ounces per day with increase in chronological age and/or longer stay in the Home Management House when results are analyzed by groups. Robin, on whom material for only one term is available, showed a slight increase from the first group to the second group. Martin had a smaller range in number of ounces with the second group of each term than with the first group, but no overall consistent tendency to increase or decrease with increase in chronological age and/or longer stay in the House.

There seems to be no consistent tendency for the range in number of ounces of milk consumed daily by the five infants to be

greater or smaller during vacation periods spent in a home than during time in the Home Management House. Of seven vacation periods spent in a home by the five infants, four showed greater, and three showed smaller ranges than the average range in the Home Management House. The range or variation was greater than the House average range during Martin's Christmas and Spring vacations, Carl's Spring vacation, and Patty's Spring vacation. The range was smaller than the House average range during Carl's Summer vacation, Robin's Thanksgiving vacation, and Duncan's Spring vacation.

When the results from the sociometric data are compared with the records on range in number of ounces per day, consumed in the care of individual students, there seems to be no relation between the two factors. A tendency suggested by the material on one infant was contradicted or not borne out by corresponding material on the other four infants.

3. Mean Number of Ounces per Feeding

A comparison of mean number of ounces per feeding during vacation periods in a home and the period in the Home Management House suggests a tendency for a higher mean in a home. Four of the five infants showed a higher mean during vacation periods; only Patty consumed a higher mean number of ounces in the Home Management House than in a home.

There seems to be no relation between chronological age on leaving the House and the mean number of ounces per feeding. The

lowest mean number of ounces per feeding during the total time in the Home Management House was Martin's mean of 4.71. The highest mean was 6.63 ounces, consumed by Carl per feeding.

There seems to be no relation between length of stay in the House and/or chronological age in consideration of means by groups and/or terms. Martin and Duncan seemed to show a tendency to decrease in mean number of ounces per feeding; Robin and Patty seemed to show a tendency to increase, and Carl seemed to show neither tendency.

A comparison of sociometric data and the mean number of ounces per feeding seems to show no consistent relation between the factors for the five infants.

In the comparison between scores on question two and the mean number of ounces per feeding, records for Martin and Duncan seemed to show no consistent relation between the two factors; the records of Robin and Patty seemed to show little relation between the two factors, but in the direction of higher mean with those students receiving the highest scores; Carl's records seemed to suggest a possible tendency for lower mean with students receiving highest scores in their groups on question two.

In the comparison of scores on question ten and the mean number of ounces per feeding, Martin's and Duncan's records suggested no consistent relation; Carl and Robin's possible tendency contradicted that suggested by material on Patty.

4. Range in Number of Feedings per Day

There seems to be no relation between chronological age upon leaving the Home Management House and range in number of feedings per day. The greatest average range in number of feedings per day was Martin's average range of 2.58. The smallest average range was .78 (Carl).

There seems to be no relation between median range and chronological age upon leaving the Home Management House. The greatest median range was 2 to 3 (Martin), and the smallest median range was 1 (Carl and Patty). Robin and Duncan showed median ranges of 2.

There seems to be no relation between increase in chronological age and/or longer stay in the House and average range in number of feedings per day by groups. Carl and Robin showed a tendency to decrease in average range considered by groups, but the other three infants showed neither a tendency to decrease nor increase with increase in chronological age and/or longer stay in the House.

A comparison between average range in number of feedings per day in the Home Management House and range in a home showed no consistent tendency by the five infants. Of seven vacation periods spent by the five infants in a home, four showed a greater range in number of feedings per day than the average range in the House, and three showed a smaller range than the average range in the House.

There seems to be no similarity in pattern among the five infants when range in number of feedings per day is considered in relation to chronological position of the child director.

A relation between range in number of feedings and mean number of ounces per day considered by chronological position of the child directors was suggested by the material on Carl, Robin, and Duncan. In the care of the child director with whom these infants consumed the highest mean number of ounces per day, they had the greatest range in number of feedings per day. The inverse of this relation seems also to be evident in these three cases. The corresponding material on Martin and Patty did not suggest a similar relation.

A comparison between sociometric data and range in number of feedings per day seemed to suggest little relation between the two factors. Three of the five infants showed no consistent relation between question two and range in number of feedings per day. The tendencies suggested by Martin's and Carl's records contradict each other. Three of the five infants showed no consistent relation between question ten and range in number of feedings per day. Tendencies suggested by Duncan's and Patty's records contradict each other.

VI. DISCUSSION OF SUMMARY

The number of daily bowel movements which these infants had seems to give an indication of their response to situations. Changes in groups of child directors result in an increase in mean number of bowel movements as well as in greater variation in number of bowel movements in four of the five cases. With the last two or three child directors in the groups there was a decrease in mean and range in number of bowel movements in four of the five cases.

There seems to be a positive relation between the mean number of daily bowel movements and the range in number of daily bowel movements. A comparison between mean and range in number of bowel movements tabulated by chronological position of the child directors in the groups reveals that three of the infants had the lowest mean and the smallest range with the same child directors, and another infant showed a tendency in the same direction.

As might be expected there seems to be a direct relation between mean number of bowel movements per day and daily consumption of milk. With increase in milk consumption, there is a corresponding increase in number of bowel movements, and with a decrease in milk consumption, there is a corresponding decrease in number of bowel movements. One infant showed a closer relation between milk intake and range in number of bowel movements than mean number of bowel movements. However, this seems to be a logical relation if we accept range and mean as related indices.

There seems to be a direct relation between increase in chronological age and decreased daily consumption of milk. It is likely that, with increased intake of solid foods by the older infants, there is a corresponding decrease in milk intake.

✓ A possible answer to the question of why an infant consumes more milk in the care of one child director and less in the care of another is suggested by a comparison of the results on question ten on the sociometric ratings and the mean number of ounces per day. It was found that all of the infants tended to consume less milk in the care of those students receiving the lowest scores in their groups on question ten. This result suggests a relation between how "uncomfortable" a student's peers feel with her and how the infant responds to the student. Perhaps the infants' response to a student with whom her peers feel relatively "uncomfortable" is a decreased consumption of milk. The comparison of sociometric data with bowel movements records revealed no consistent relation between the two factors.

There is an indication of relation between range in daily number of feedings and mean daily number of ounces consumed by three infants. The infants consumed the highest number of ounces while in the care of those child directors with whom there was the greatest range in number of daily feedings. The inverse relation is also evident. A greater range in number of feedings may indicate greater flexibility on the part of the students caring for the infant at the time the infants respond favorably, by consuming more milk (if we

accept a greater consumption of milk as being more desirable than a smaller consumption of milk). The comparisons were made within groups of students, which restricts the range in chronological age to less than six weeks in most cases; this should eliminate somewhat the factor of decreased consumption of milk with increase in chronological age.

A. Individual Differences of Infants

Carl was the only infant who followed the pattern of the majority of the infants in all of the above-mentioned relations. Martin followed the pattern of the majority in all respects except that between mean number of ounces per day and range in daily number of feedings. The material on Martin showed no consistent relation between these two factors.

The material on Duncan either was wholly in agreement with, or suggested in a less clear-cut manner, the same results as the majority of the five, except for an increase in range in number of bowel movements while in the care of the sixth child directors, after the decrease in range with the fourth and fifth child directors.

The material on Patty differed from the majority in only two respects. There was no relation between mean number of ounces of milk consumed per day and range in daily number of feedings. Patty also showed an increase in range in number of bowel movements with the sixth child directors, after a decrease in range with the third

through the fifth child directors. Otherwise, the material on Patty either was in agreement with, or suggested in less clear-cut manner, the same relations as the majority of the infants.

Robin deviated most from the other infants in these relations. He showed an increase in range in number of bowel movements with the fifth and sixth child directors, rather than a decrease. He showed a peak in range in number of bowel movements, late in care by groups of child directors; the other four infants showed peaks early in care by groups. He did not have the smallest range and the lowest mean number of bowel movements with the same child directors, as did all of the other infants. Instead of a relation between daily consumption in mean number of ounces and the daily mean number of bowel movements, Robin showed a similar relation between mean number of ounces and range in number of bowel movements. If we remember that Robin had the highest mean number of bowel movements of any of the infants, we may see that there is the possibility, previously mentioned, of a relation between these two indices. Robin, with his high number of bowel movements, seemed to show his response to situations more by the number of bowel movements rather than in the range in numbers. Robin's deviations from the patterns of the other infants show how individual differences in response may appear among infants.

VII. CONCLUSIONS

The evidence on which the conclusions are based may be summarized as follows:

All five infants had the lowest mean number of daily bowel movements while they were in the care of the fifth or sixth child directors in the groups, (Martin and Carl - sixth; Robin, Duncan and Patty - fifth). Three of the five infants had the highest mean number of bowel movements while in the care of the first child director in the group; one had high means while in the care of the first and second child directors, and the fifth had the highest mean while in the care of the second child director. Martin and Carl had a second high point with the fourth child director.

The differences in range or variability in number of daily bowel movements are smaller, but suggest a pattern. The smallest average range in number of daily bowel movements in the cases of Martin, Carl, and Duncan occurred while they were in the care of the fifth or sixth child director; in the case of Robin, the smallest average range occurred with the second child director, and in the case of Patty, with the third child director. The greatest or second greatest average range occurred with the first and/or second child director in the case of all of the infants except Robin. In his case it came with the fourth and fifth child directors.

Robin differs from the others in that his smallest average range came with the second child director in the group and the greatest with the fourth and fifth. He seemed to respond to change by becoming less variable while the others tended to become more variable in number of bowel movements.

There are interesting differences between records on feeding and the records on bowel movements. The mean number of ounces per day varies very little with the different child directors taken in order. The differences which exist are in the direction of less variation in amount of milk consumed with the child directors who take care of the infant later in the group's time in the House, (sixth with Duncan, fifth with Martin and Patty, fourth with Carl). Again, Robin differs from the others. The least variation for him occurred with the first child director. It may be significant that the pattern is the same for him for both the bowel movements and the feeding. Robin was the youngest when he left the House and was observed over the shortest period of time.

✓ Feeding seems to be less of an index to response to group change on the part of the infants than the bowel movements, but it may be more of an index to response to individual differences in the students as shown by the sociometric data. There was some evidence that the infants consumed less milk with those students whose peers rated them as people they felt less comfortable with. The infants' responses in the area of bowel movements were not as clear-cut in the same way.

The results suggest a change in groups caring for the child affects the infants more than a change in individuals caring for him. Differences in the individuals caring for the infants seem to influence the feeding behavior more than the bowel movements.

The big change for an infant in the Home Management House seems to come with the change in a group of students. Attention should be given to making this transition as easy as possible for him. Changes in care by individual child directors within the groups seem to affect the infant relatively little, perhaps because he is usually cared for by all the students at times during an individual child director's duty with him.

The differences are not large in any case which may indicate that the effect of a succession of people caring for an infant is not great under the condition prevailing in these Houses, and there is no clear-cut evidence that it is cumulative.

Individual differences appear with one of the five infants reacting in a somewhat different way to change than the other four infants.

It would be of value to see whether these results are confirmed when a larger number of cases is studied.

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APPENDIX

Graph I

Graph I is entitled "Daily Number of Bowel Movements of Five Infants Reported by Chronological Age." It includes bowel movements from the seventh to the thirtieth weeks of chronological age.

Although some available data has been omitted at both extremes of the age range, the weeks included were the weeks during which the greatest amount of material could be included. A greater age range was not possible on this graph. The lack of available photographic service and the limitations of space effected by marginal requirements precluded inclusion of the total age range of the five infants in the Home Management Houses.

The solid line indicates time spent in the Home Management House. The broken line indicates material from records kept on the infants in homes during college vacation periods.

Graph I. Daily Number of Bowel Movements of Five Infants Reported by Chronological Age

