# AN EXPLORATION OF ADULT-INFANT INTERACTION

by

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# AN EXPLORATION OF ADULT-INFANT INTERACTION

## CHAPTER I

## INTRODUCTION

### Need for the Study

The mother-infant relationship has been the focus of considerable speculation and research. By and large, the interest in this topic has been directed to two questions: (1) The significance of the mother-infant relationship to the personality development of the child (1, 3, 6, 13, 14, 15, 18) and (2) The relationship between the personality characteristics of the mother and the quality of her relationship with her infant (2, 3, 5, 8, 10, 11, 13, 19, 20).

There is another aspect to the mother-infant relationship which largely has been ignored, and that is the effect of the infant's behavior on the mother's behavior toward the infant. People have recognized that an infant's behavior does have stimulus value; that he can frustrate, demand, or reward. However, beyond a simple recognition of this fact, little has been done to further our knowledge of this aspect of the mother-infant relationship.

The literature relating directly or indirectly to this question of mother-infant interaction is limited, and consequently, further research in the area seems warranged and necessary.

### Purpose of the Study

The purpose of this study was to explore the relationship

between overt infant behavior and the response of a mothering one to these behaviors. In this study child directors in a Home Management House assumed the role of the mothering one, and have been referred to throughout the study as mothers. It should be clearly understood that the term mother has been used only for convenience, and should not be taken to imply that the child directors responded to the infant as true mothers would respond to their infants.

## Review of Related Literature

After the present study was designed and carried out, a remarkably similar, more extensive study was published by David Levy (11). Because of its similarity to the present study, it will be reviewed in some detail.

Levy was searching for a better way of determining maternal attitude than a poll of opinions. In the process of carrying out his study he came to the realization that the infant's behavior was a powerful determiner of the mother's behavior toward the infant.

His study was designed to compare the attitudes of mothers toward their newborn infant as measured by a standardized interview procedure and by a systematic observational procedure. The interviews involved a standard set of questions concerning affection, interest and desire for babies and a self-rating of maternal attitudes. These same mothers were observed in the hospital on the

second and third day after the birth of their infants. The mothers' behaviors were observed when the infants were brought to them for breast feeding. The feedings were twenty to thirty minutes in length with the records starting when the babies arrived and ending when the babies were taken away. The responses of the mothers to their infants during these observations were taken as measurements of their attitudes toward the infants.

After the mother-infant behavior was recorded, the mother's response was rated by four judges on a four-point scale. The scale positions were ++, +, -, 0, with the + categories referring to positive feelings toward the baby, the - category referring to negative feelings toward the baby, and 0 referring to neutrality or a lack of either positive or negative effect.

On analyzing these data Levy found a close relationship between the behavior of the infant and the behavior of the mother, with the infant's behavior being the primary factor in determining whether or not the feeding experience was successful. For example, the chances of a feeding failure occurred much more frequently when the infant was brought to the feeding asleep and was difficult to awaken than when he arrived already awake. As Levy puts it, ".... a baby who is avid for the breast presents a different problem to the mother than the baby who is loath to suck." (p.65) He goes on to say,

> All the responses of the baby indicating arousal from sleep, for example, opening movements of eyelids, partial sucking and clamping of jaws, of responses on the part of the baby was quite consistent with the number and tempo of stimulating activities on the part

> of the mother. The baby's responses were apparently regarded by the mother as encouraging signs. When the signs included active resistance, the latter seemed especially provocative and precipitated the roughest of all stimulating activities. (p.90)

Levy succinctly summarized his findings with respect to the effect of infant behavior on maternal behavior when he says,

> .... the behavior of the nursing mothers in response to the baby was accounted for largely by the infant's sucking behavior. They include the mother's anticipation of the difficulty in getting the baby to suck, her difficulty in initiating the sucking, overcoming the baby's resistance, adapting the pattern of stimulation to changes in the baby's pattern of sucking, and maintaining the sucking in spite of pain or fatigue. (p.205)

To the writer's knowledge, this is the only published research which deals specifically with infant behavior as a stimulus to maternal response. There has been some research, however, that bears indirectly on this problem, and which has generated conclusions about it.

Sylvia Brody's study of the sensitivity of mothers to the needs of their infants (2) is a case in point. In discussing the results of her study she says:

> It may safely be said that an infant always influences his mother's behavior. He is biologically impelled to make demands and to make them imperiously and unreasoningly. He makes them upon an adult who has striven over a lifetime to modify or control her own impulsive demands and who cannot but become disconcerted by having to live two emotional lives, as it were. The infant may rearouse tensions in her or may reawaken conflicts or may precipitate the appearance of new ones. But he has not created them. The infant touches off reactions in the mother, but the form and intensity of her reaction are determined by her own history of biological needs and the strength of his structural reflexes. (2, p.347)

In a footnote concerning the above statement Brody adds, "That a mother and infant interact is obvious. This statement will not lead far until the independent contribution of each partner to the interaction can be isolated and better understood." (2, p.347)

Margaret Fries' study of activity types in infants (7), also has suggested that the infant's behavior is one of the factors which influence maternal behavior. She points out that a quiet infant was welcomed by a mother because he didn't disturb her work, but that another infant who was very active was welcomed by her mother because she was looking for advancement and found these signs in the infant's motor development. Another very active child made her over-conscientious mother ill because she could not keep up with the child in his activity.

Data coming from a longitudinal study of parental attitudes by Coleman and her associates at the Yale Child Study Center (4) also have a bearing upon the problem. They have found that the attitudes of mothers toward their infants and children change as the infant and child change developmentally.

While currently available data on the problem are scarce, what is available points clearly to the significance of the infant as a determiner of maternal behavior. The present study was undertaken to extend our knowledge of this aspect of the mother-child relationship.

# CHAPTER II

## PROCEDURE

The purpose of the present study was to explore the relationship between overt infant behavior and the response of child directors to this behavior.

### The Subjects

The subjects for the study were thirteen senior girls in Home Economics who were living in Withycombe Home Management House as a requirement for their B. S. Degree*. All of the girls had had at least three courses in child development, although their fields of study were varied, i.e., foods, clothing, Home Economics education, family life, etc. Each subject was child-director for a five-day period. The infant was six months old at the beginning of the study and nine months old at the close of the study.

### Design of the Study

The study required each child director to be observed in three caretaking situations: bathing, dressing, and feeding. The observations were designed to keep the situations as normal as possible. All of the observations occurred in Withycombe Home Management House,

* Seventeen senior girls lived in the Home Management House winter and spring quarters of the academic year 1959. However, only thirteen were used in the observations for this study as the infant was unexpectedly removed before the spring quarter was completed.

Oregon State College. The observations were recorded in the infant's room, the bathroom, the living room, and the dining room of the Home Management House.

Direct observation of mother-infant interaction was used in measurement with the behavior of the infant and the mother being recorded at five-second intervals in terms of preconceived categories. Two observers were used in making the observations.* Each observer recorded independently for 73 minutes per subject. This gave a combined total for both observers of 1762 five-second intervals per subject. There were two observations within the 73-minute period - a 25-minute A.M. feeding situation and a 48-minute P.M. bathing, dressing, and feeding situation. By having each observer record the behavior of each mother-child pair, constant observer error was reduced.

The fact that the infant was six months old at the beginning of the study and nine months old at its completion introduces the question of maturational effects in the data. There was no way to control for error due to this factor. The effects of the infant's maturation were especially noticeable in her physical growth and maturity, and her efforts to control the situations which surrounded her.

The fact that only one infant was involved in the study should have served as a control for much of the variability in infant behavior one would find in studies using natural mothers and their infants.

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* Mrs. Carol H. O'Neill was the co-observer. She used the maternal behavior data in her study of Personality Characteristics as Correlates of Maternal Behavior in a Noncontinuous Mothering Situation. (12)

In fact, it was only by using one infant that data could be gathered to answer the question "Does essentially the same infant behavior affect different mothers in the same way, or will these mothers respond differently to this behavior?".

## Measurement

The measuring instruments. A preconceived system of categories used in systematic, direct observation provided the basis for measurement in this study.

Six situational categories structured the design of the study: I Holding the Infant, II Bathing her, III Dressing her, IV Feeding her, V The infant and mother Out of Contact, and VI The infant and mother in Some Place Other than that suggested by the first four categories. Only situations II, III, and IV were required to appear in the data. Detailed definitions of these categories appear as Appendix A.

Infant and maternal behavior categories were designed to enable the observers to record systematically the mother-child interaction.

The categories identifying the infant's behavior were designed to be exhaustive studies of activity. These infant behavior categories included items which recorded play, vocalization, demonstrations of affection toward a mother, frustration, resistance to a mother, and lack of activity on the part of the infant. Operational definitions were developed to permit reliable observations. These categories with their definitions may be found in Appendix B.

The categories defining maternal behavior were designed to measure the mothers' overt behaviors toward the infant and feeling tones accompanying this behavior. The categories included such overt behavior as talking, playing, controlling, looking, etc., and the feeling tones of warmth, anxiety, hostility, and neutrality.

The feeling tone categories were considered to be extremely important in the measurement of maternal behavior, for they provided a measure of the quality of that behavior. According to recent literature, it is this qualitative aspect of maternal behavior which is of significance in the child rearing-personality development process (2, 8, 10, 11, 18, 19, 20).

The categories used in this study to measure the overt behavior of the mothers and infant represented a modification of those developed by Rheingold for her study of maternal care in hospitals (17). The categories used to measure feeling tone, and the situational categories, were added to Rheingold's original system for purposes of this study.

The maternal overt response categories and the maternal feeling tone categories and their definitions may be found in Appendices C and D.

The method of recording. Mother and infant behavior were recorded each five seconds. Each observer attempted to complete a total of 876 five-second observations for each subject, or a combined total of 1752 such observations. The recording was made on a specially

marked chart blocked into five-second intervals. Each page held 16 minutes of observation. The subject's name, date and session, i.e., 25-minute or 48-minute, were written at the top of each page of observation. Each observer used a stop watch which was taped to the top of a clip board.

The mother's response was always recorded in the upper left corner of the block. The feeling tone accompanying this response was recorded next to the mother's response. The infant's behavior was always recorded in the lower right corner. The situation was recorded at the outside left corner of the interval in which the action of the situation was initiated. An example of the observation sheet with an explanation may be found in Appendix F.

A five-second interval was used to facilitate recording. When longer intervals are used to measure interactive behavior, so much interaction takes place that it becomes impossible to identify and record the action which is actually occurring.

Since more than one behavior could occur at the same time, for example, a mother could be looking, talking and playing with an infant simultaneously, a category preference list was compiled to determine which behavior had priority for recording when this occurred. Such a list enabled the observers to reach agreement on which behavior was to be recorded when two or more occurred simultaneously. In the preference list, maternal behaviors were ordered according to the relative importance they are thought to assume in the child-rearing process. The Preference list appears as Appendix E.

## The Reliability of Measurement

Observer training. As soon as the categories were constructed, the two observers committed their definitions, symbols, and their order of preference to memory. Practice observations with the categories began in the home management house the early part of winter term, 1959. The observers recorded simultaneously but independently, for approximately one hour each day for two weeks. The subjects were child directors who were in the home management house, but who were not to be used in the study.

During these practice observations the observers compared their records for accuracy. When disagreements appeared consistently around a particular category, further clarification of that category was undertaken. In this sense the initial category system was under revision for these two weeks. When the observers felt agreement was nearing an acceptable level, they observed for purposes of demonstrating final reliability.

Observer-Agreement. Observer reliability is generally considered as being synonymous with observer agreement when two observers are observing simultaneously but independently. Tests of reliability were applied at intervals during the practice sessions. The observers agreed to start the final data recording when the observer-agreement reached a point beyond 85 per cent.

Reliability was demonstrated for individual categories and for observers generally. In both cases per cent agreement on category

entries between observers observing simultaneously but independently was the measure of reliability.

The formula which was used to calculate individual category reliability was:

$$\frac{\text{Number of Agreements}}{\text{Total number of agreements + disagreements due to omission + } \frac{1}{2} \text{ those due to misclassification}}$$

Only half of the errors due to misclassification entered into the formula since an error in misclassification for one category of behavior indicated an error in misclassification for another category. For example, one observer records talking in a five-second interval, while the other observer records playing. Obviously one or both of the observers were in error in classifying the mother's behavior. There is really only one disagreement between observers due to misclassification in the five-second interval, but two different behavior categories were recorded and, consequently, two errors in classification have to be counted.

In computing category reliability, errors due to timing were considered as agreements. This seemed to be a justifiable procedure since in category reliability one is concerned only with the ability of the two observers to correctly identify and label interactive behavior, not with recording the accuracy of its occurrence in time.

The individual category reliability data appear in Tables I and II.

On the basis of these data it was concluded that the categories were sufficiently defined and distinguished one from the other to

TABLE I

RELIABILITY OF MATERNAL RESPONSES AND FEELING TONES, EXPRESSED IN TERMS OF PER CENT AGREEMENT, BASED ON 73 MINUTES OF OBSERVATION OF MOTHER-INFANT INTERACTION

| | Category | Frequency | Reliability |
|---|---|---|---|
| 1. | Affection | 73 | 93% |
| 2. | Plays | 181 | 90% |
| 3. | Talks | 905 | 86% |
| 4. | No Interaction | 225 | 85% |
| 5. | Looks | 441 | 79% |
| 6. | Control | - | - |
| 7. | Ignore | - | - |
| 8. | Positive Feeling Tone | 790 | 87% |
| 9. | Anxious Feeling Tone | 2 | 100% |
| 10. | Hostile Feeling Tone | - | - |
| 11. | Neutral Feeling Tone | 960 | 97% |

TABLE II

RELIABILITY OF INFANT BEHAVIOR CATEGORIES, EXPRESSED IN TERMS OF PER CENT AGREEMENT, BASED ON 73 MINUTES OF OBSERVATION OF MOTHER-INFANT INTERACTION

| | Category | Frequency | Reliability |
|---|---|---|---|
| 1. | Play with Vocalization | 122 | 97% |
| 2. | Play without Vocalization | 844 | 97% |
| 3. | Affection | 34 | 100% |
| 4. | Vocalization | 57 | 82% |
| 5. | Fuss | 140 | 93% |
| 6. | Non-nutritive Sucking | 10 | 100% |
| 7. | No Activity | 545 | 93% |
| 8. | Protest | - | - |
| 9. | Resist | - | - |
| 10. | Looks | - | - |
| 11. | Play with Other | - | - |

allow accurate, reliable observation.

It will be noted from these data that several categories in the observation schedule did not appear in the observations for reliability. These included the maternal response categories of Control and Ignore, and the feeling tone of Hostility, and the infant behaviors of Protest, Resist, Looks, and Play with Others. These categories were used, nevertheless, in the observations for purposes of data collection.

It will be noted from these data also that the behaviors which were lower on the Preference list, with the exception of No Interaction, had the lowest reliability. Also, the behavior which was highest on the Preference list had the highest reliability. It will be recalled that the behaviors which placed highest on the Preference list were always recorded when observed, while those which were lower on the list were recorded only when behaviors which were higher on the list were not observed. Apparently it was easier to record accurately those items which were more frequently used and held a high priority than it was to record items which were used less frequently.

Over-all observer reliability was based on the formula:

$$\frac{\text{Agreements}}{\text{Agreements} + \text{disagreements due to omission} + \text{those due to timing errors,} + \tfrac{1}{2} \text{ those due to misclassification}}$$

Using this formula, over-all observer reliability was calculated to be 91 per cent. Observer reliability was not rechecked during the course of the study.

Some Comments on Observational Procedure

Rapport was established with the subjects by visiting with each group as they started their one-half term in Home Management House. The purpose of the research and the role which they were to play in it were explained in detail. The girls were reassured that the observers were not passing judgment upon them. They were also reassured that the research would not in any way be related to their grade in Home Management House experience. Any questions that they had about the research were answered.

The girls were very cooperative and seemed pleased to be a part of the project.

The subject was never observed on her first day as child-director. This gave the girl some time to experience caring for the infant and to adjust to her new role before her behavior was observed for purposes of the study.

An attempt was made to keep the situations as natural as possible. However, some restrictions had to be made in order to control the observations. The girls were asked not to interact with anyone except the infant during the observation. This restriction was not always remembered by the subjects.

Also, the child directors were asked to remain in contact with the infant during the specified time of the observations. There were some exceptions to this request. During the time that the child directors were not in the room with the infant no recordings were made. The recordings were resumed when the child director and the

infant were once again in contact.

A total of 73 minutes or 876 five-second intervals of observation was planned for each observer. Occasionally outside influences occurred which prevented the observers from recording for the full 73 minutes. For example, if the infant went to sleep or if the child director interacted with individuals other than the infant, the total 73 minutes could not always be recorded. If the observers could arrange additional time with the subject to fill the gaps in observation another observation was made, but this was not always possible.

The 73 minutes were long enough to permit every girl to complete all of the required situations of feeding, bathing and dressing. When the required situations were completed, the child directors were permitted to interact with the infant in any way that they chose until the required 73 minutes were completed. Situations I (Holding) and VI (Infant in Some Other Place) accounted for most of the balance of interaction.

The observers agreed to record continuously all mother-infant interaction as it occurred. Recording was stopped and rest breaks were taken when the mother left the room for any reason.

# CHAPTER III

## RESULTS AND DISCUSSION

In examining the relationship between infant behavior and the response of a mothering one to this behavior the data were ordered according to the frequency with which particular maternal behaviors appeared in conjunction with particular infant behaviors. Technically such an approach to analysis would involve the assumption that maternal behavior appearing in conjunction with infant behavior always represented a response to the infant's behavior. Obviously, this assumption cannot be met. In some instances the infant was responding to the mother's behavior and in some instances maternal behavior was quite independent of the infant. In this sense what has been termed maternal response is really no more than maternal behavior associated in time with infant behavior. Since, however, a global analysis of the data indicated a close relationship between shift in infant behavior and an accompanying shift in maternal behavior, it seemed plausible to treat the data as if the assumption could be met.

The frequency with which particular maternal behaviors appeared in conjunction with particular infant behaviors, for each mother-infant pair, is presented in Tables III through XV.

Two approaches to the analysis of the frequency count data were taken, a chi-square analysis and a descriptive, interpretive analysis. While the frequencies within the cells of Tables III through XV clearly differ, indicating that the behavior of the mothering one

differed markedly in response to different infant behaviors, the chi-square statistic was applied to the data in each of these tables to get a statistical estimate of the extent of the differences.

Since all of the cells in the tables do not have entries, and some entries had extremely small frequency counts, only the cells which contained frequencies of five or more were included in this analysis. Also, the anxious and hostile feeling tone categories were pooled for this analysis because of the infrequency of their appearance.

The formula used in computing the statistic was

$$X^2 = \frac{(\text{Actual Frequency} - \text{Expected Frequency})}{\text{Expected Frequency}},$$

where the expected frequency was the expected mean frequency for each cell in the table. The expected mean frequency was computed by dividing the total category frequency for all cells used in the analysis, i.e., cells having a frequency of five or more, by the number of cells used in the analysis. Details of the chi-square analysis may be found in Wert, Neidt, and Ahmann (21).

The data coming from the chi-square analysis appear in Tables XVI and XVII. From these data it is clear that mothers do respond differentially to infant behavior, in both their overt behavior and in the feeling tone qualities which accompany this behavior.

The descriptive, interpretive analysis of these data add much to their meaning, and this appears under the following heading, Response Patterns of Individual Mothers.

TABLE III

FREQUENCY OF RESPONSE OF MOTHER NUMBER 1 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 189 | 493 | 80 | 7 | - | - | 85 | 504 | 1 | - | 349 |
| Play with voc. | 16 | 73 | 18 | 7 | - | - | 8 | 91 | - | - | 31 |
| Vocalization | 9 | 36 | 3 | 4 | - | - | 5 | 24 | - | - | 33 |
| Fuss | 20 | 112 | 1 | 4 | - | - | 3 | 44 | - | - | 96 |
| Protest | - | - | - | - | - | - | - | - | - | - | - |
| Non-nutritive suck. | - | - | - | - | - | - | - | - | - | - | - |
| Affection-giving | - | - | - | 33 | - | - | 1 | 33 | - | - | 1 |
| Looks-at | - | - | - | - | - | - | - | - | - | - | - |
| No Activity | 207 | 191 | 6 | 18 | - | - | 123 | 94 | 1 | - | 450 |
| Resist | - | - | - | - | - | - | - | - | - | - | - |
| Sub-totals | 441 | 905 | 108 | 73 | - | - | 225 | 790 | 2 | - | 960 |

Out of Contact - 0

* + = warm or positive response
\- = anxious response
z = hostile response
0 = neutral response

TABLE IV

FREQUENCY OF RESPONSE OF MOTHER NUMBER 2 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 272 | 124 | 94 | 3 | - | - | 25 | 72 | 1 | - | 445 |
| Play with voc. | 64 | 51 | 49 | 1 | - | 1 | 2 | 19 | - | - | 149 |
| Vocalization | 17 | 21 | 1 | - | - | - | - | 12 | - | - | 27 |
| Fuss | 51 | 31 | 3 | 5 | - | 2 | - | 20 | - | - | 72 |
| Protest | 9 | 1 | 1 | - | - | - | - | 1 | 1 | - | 9 |
| Non-nutritive suck. | 21 | 8 | - | - | - | 1 | - | 3 | 2 | - | 25 |
| Affection-giving | - | - | 1 | - | - | - | - | 1 | - | - | - |
| Looks-at | 5 | 13 | - | - | - | - | 1 | 7 | - | - | 14 |
| No Activity | 399 | 24 | 4 | - | - | 1 | 20 | 6 | 3 | - | 439 |
| Resist | - | - | - | - | - | - | - | - | - | - | - |
| Sub-totals | 838 | 275 | 153 | 9 | - | 5 | 48 | 141 | 7 | - | 1180 |

Out of Contact - 424

* + = warm or positive response
\- = anxious response
z = hostile response
0 = neutral response

TABLE V

FREQUENCY OF RESPONSE OF MOTHER NUMBER 3 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 42 | 595 | 84 | 15 | - | - | 35 | 535 | 3 | - | 233 |
| Play with voc. | 1 | 124 | 18 | 7 | - | - | - | 136 | - | - | 14 |
| Vocalization | - | 40 | 7 | - | - | - | - | 18 | - | - | 29 |
| Fuss | 1 | 54 | 4 | 4 | - | 1 | - | 27 | 4 | - | 33 |
| Protest | - | 8 | - | 2 | - | - | - | 9 | - | - | - |
| Non-nutritional suck. | - | 7 | - | 5 | - | - | - | 8 | - | - | 4 |
| Affection-giving | 1 | 1 | 7 | - | - | - | - | 9 | - | - | - |
| Looks-at | - | 1 | - | - | - | - | - | - | - | - | 1 |
| No Activity | 155 | 282 | 5 | 5 | - | - | 29 | 243 | 1 | - | 232 |
| Resist | - | - | - | - | - | - | - | - | - | - | - |
| Sub-totals | 200 | 1112 | 125 | 38 | - | 1 | 64 | 985 | 8 | - | 547 |

Out of Contact - 212

* + = warm or positive response
- = anxious response
z = hostile response
0 - neutral response

TABLE VI

FREQUENCY OF RESPONSE OF MOTHER NUMBER 4 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 225 | 320 | 126 | 6 | - | 4 | 149 | 482 | 4 | - | 344 |
| Play with voc. | 40 | 150 | 14 | 7 | - | - | 7 | 130 | 1 | - | 87 |
| Vocalization | 8 | 28 | - | 1 | - | - | - | 27 | - | - | 10 |
| Fuss | 22 | 138 | 3 | - | - | - | 1 | 92 | 1 | - | 71 |
| Protest | 6 | 12 | 2 | - | 2 | - | - | 4 | 6 | - | 12 |
| Non-nutritional suck. | 11 | 9 | 2 | 1 | - | - | 1 | 9 | - | - | 15 |
| Affection-giving | - | 12 | 2 | 13 | - | - | - | 27 | - | - | - |
| Looks-at | 1 | 8 | - | - | - | - | 10 | 5 | - | - | 14 |
| No Activity | 161 | 103 | 1 | - | - | 2 | 102 | 141 | - | - | 228 |
| Resist | - | - | - | - | - | - | - | - | - | - | - |
| Sub-totals | 474 | 780 | 150 | 28 | 2 | 6 | 270 | 917 | 12 | - | 781 |

Out of Contact - 42

* + = warm or positive response
- = anxious response
z = hostile response
0 = neutral response

TABLE VII

FREQUENCY OF RESPONSE OF MOTHER NUMBER 5 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 296 | 421 | 197 | 22 | - | 2 | 48 | 379 | - | - | 607 |
| Play with voc. | 51 | 182 | 207 | 20 | - | - | 3 | 302 | - | - | 161 |
| Vocalization | 2 | 13 | - | - | - | 1 | - | 4 | - | - | 12 |
| Fuss | - | 24 | 3 | - | - | - | - | 19 | - | - | 8 |
| Protest | - | - | 3 | - | - | - | - | 3 | - | - | - |
| Non-nutritional suck. | - | 2 | - | 1 | - | - | - | 3 | - | - | - |
| Affection-giving | - | 3 | 2 | 4 | - | - | - | 9 | - | - | - |
| Looks-at | - | - | - | - | - | - | - | - | - | - | - |
| No Activity | 109 | 45 | 2 | 3 | - | - | 26 | 21 | - | - | 164 |
| Resist | - | - | - | - | - | - | - | - | - | - | - |
| Sub-totals | 458 | 690 | 414 | 50 | - | 3 | 77 | 740 | - | - | 952 |

Out of Contact - 60

* + = warm or positive response
\- = anxious response
z = hostile response
0 = neutral response

TABLE VIII

FREQUENCY OF RESPONSE OF MOTHER NUMBER 6 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 421 | 315 | 45 | 2 | 1 | 11 | 7 | 66 | 21 | 9 | 706 |
| Play with voc. | 93 | 78 | 27 | 2 | 1 | 1 | 3 | 26 | 4 | - | 175 |
| Vocalization | 40 | 26 | - | 2 | - | 3 | - | 2 | - | 1 | 68 |
| Fuss | 55 | 70 | 1 | 1 | - | 17 | - | 3 | 16 | 15 | 109 |
| Protest | 3 | 1 | - | - | - | - | - | - | 1 | - | 3 |
| Non-nutritional suck. | 23 | 24 | 1 | 5 | - | 1 | 2 | 6 | 6 | - | 45 |
| Affection-giving | - | 1 | 10 | 1 | - | - | - | 9 | - | - | 3 |
| Looks-at | - | - | - | - | - | - | - | - | - | - | - |
| No Activity | 314 | 89 | 3 | 6 | 1 | 12 | 8 | 16 | 5 | 9 | 403 |
| Resist | - | - | - | - | - | - | - | - | - | - | - |
| Sub-totals | 949 | 604 | 87 | 19 | 3 | 45 | 20 | 128 | 53 | 34 | 1512 |

Out of Contact - 25

* + = warm or positive response
- = anxious response
z = hostile response
0 = neutral response

TABLE IX

FREQUENCY OF RESPONSE OF MOTHER NUMBER 7 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 174 | 531 | 153 | 41 | - | 5 | 2 | 569 | - | - | 337 |
| Play with voc. | 34 | 230 | 137 | 24 | - | - | - | 270 | - | - | 155 |
| Vocalization | 5 | 6 | 1 | 1 | - | - | - | 7 | - | - | 6 |
| Fuss | 5 | 11 | 2 | - | - | - | - | 8 | 5 | - | 5 |
| Protest | - | - | - | - | - | - | - | - | - | - | - |
| Non-nutritional suck. | 5 | 12 | 3 | 1 | - | - | - | 7 | - | - | 14 |
| Affection-giving | - | 4 | 4 | 4 | - | - | - | 12 | - | - | - |
| Looks-at | - | - | - | - | - | - | - | - | - | - | - |
| No Activity | 155 | 168 | - | 1 | - | - | 1 | 58 | - | - | 267 |
| Resist | 6 | 21 | 3 | 1 | - | - | 1 | 22 | - | - | 10 |
| Sub-totals | 384 | 983 | 303 | 73 | - | 5 | 4 | 953 | 5 | - | 794 |

Out of Contact - 0

* + = warm or positive response
- = anxious response
z - hostile response
0 = neutral response

TABLE X

FREQUENCY OF RESPONSE OF MOTHER NUMBER 8 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 291 | 233 | 127 | 3 | - | 2 | 5 | 270 | - | - | 391 |
| Play with voc. | 43 | 134 | 27 | 1 | - | - | - | 112 | - | - | 93 |
| Vocalization | 11 | 44 | 12 | 1 | - | - | - | 45 | - | - | 23 |
| Fuss | 22 | 152 | 10 | 3 | - | 1 | - | 145 | 2 | - | 41 |
| Protest | 6 | 39 | 3 | 1 | - | - | - | 30 | 2 | - | 17 |
| Non-nutritional suck. | 4 | 19 | - | - | - | 1 | - | 20 | - | - | 4 |
| Affection-giving | - | - | 10 | 2 | - | - | - | 8 | - | - | 4 |
| Looks-at | - | 1 | - | - | - | - | - | 1 | - | - | - |
| No Activity | 321 | 83 | 17 | - | - | - | - | 224 | - | - | 197 |
| Resist | 2 | 11 | - | - | - | - | - | 12 | - | - | 1 |
| Sub-totals | 700 | 716 | 206 | 11 | - | 4 | 5 | 867 | 4 | - | 771 |

Out of Contact - 110

* + = warm or positive response
- = anxious response
z = hostile response
0 = neutral response

TABLE XI

FREQUENCY OF RESPONSE OF MOTHER NUMBER 9 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 326 | 100 | 11 | - | 35 | 6 | 29 | 20 | 14 | 13 | 460 |
| Play with voc. | 96 | 71 | 17 | - | 25 | 3 | 11 | 9 | 17 | 19 | 178 |
| Vocalization | 16 | 4 | - | - | - | - | 2 | - | - | 2 | 20 |
| Fuss | 44 | 26 | - | - | 8 | 5 | - | - | 9 | 23 | 51 |
| Protest | - | - | - | - | - | - | - | - | - | - | - |
| Non-nutritive Suck. | 26 | 19 | - | - | - | - | 9 | 1 | 9 | 1 | 43 |
| Affection-giving | - | - | - | - | - | - | - | - | - | - | - |
| Looks-at | 4 | - | - | - | 1 | - | - | - | 1 | - | 4 |
| No Activity | 399 | 27 | - | - | 25 | 1 | 384 | 6 | - | 28 | 802 |
| Resist | 11 | 11 | - | - | - | - | - | - | - | 3 | 19 |
| Sub-totals | 922 | 258 | 28 | - | 94 | 15 | 435 | 36 | 50 | 89 | 1577 |

Out of Contact - 0

*
+ = warm or positive response
- = anxious response
z = hostile response
0 = neutral response

TABLE XII

FREQUENCY OF RESPONSE OF MOTHER NUMBER 10 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 211 | 615 | 142 | 6 | - | 6 | 19 | 514 | 23 | - | 462 |
| Play with voc. | 31 | 172 | 52 | 1 | - | - | - | 115 | 4 | - | 137 |
| Vocalization | 10 | 33 | 4 | - | - | - | - | 15 | 4 | - | 28 |
| Fuss | 1 | 28 | 3 | - | - | - | - | 17 | 5 | - | 10 |
| Protest | - | 21 | 8 | 2 | - | - | - | 24 | - | - | 7 |
| Non-nutritive suck. | 10 | 40 | 2 | - | - | - | - | 16 | 6 | - | 30 |
| Affection-giving | - | - | 10 | 4 | - | - | - | 14 | - | - | - |
| Looks-at | 8 | 29 | - | - | - | - | 5 | 13 | - | - | 29 |
| No Activity | 151 | 97 | 2 | - | - | 3 | 3 | 34 | 14 | - | 208 |
| Resist | 3 | 13 | - | - | - | - | - | 2 | - | - | 14 |
| Sub-totals | 425 | 1048 | 223 | 13 | - | 9 | 27 | 764 | 56 | - | 925 |

Out of Contact - 7

* + = warm or positive response
- = anxious response
z = hostile response
0 = neutral response

TABLE XIII

FREQUENCY OF RESPONSE OF MOTHER NUMBER 11 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 285 | 155 | 81 | 4 | - | 3 | 7 | 72 | 21 | - | 442 |
| Play with voc. | 107 | 63 | 22 | 4 | - | - | - | 26 | 6 | - | 164 |
| Vocalization | 41 | 41 | 1 | 2 | - | - | 2 | 7 | 8 | - | 72 |
| Fuss | 61 | 42 | 6 | - | - | - | - | 10 | 12 | - | 87 |
| Protest | - | - | - | - | - | - | - | - | - | - | - |
| Non-nutritive suck. | 17 | 6 | 1 | 2 | - | - | - | 5 | - | - | 21 |
| Affection-giving | - | - | 4 | - | - | - | - | 4 | - | - | - |
| Looks-at | 6 | - | 6 | - | - | - | - | 5 | - | - | 7 |
| No Activity | 606 | 142 | 8 | 2 | - | - | 20 | 45 | 22 | - | 711 |
| Resist | 3 | 2 | - | - | - | - | - | - | - | - | 5 |
| Sub-totals | 1126 | 451 | 129 | 14 | - | 3 | 29 | 174 | 69 | - | 1509 |

Out of Contact - 0

* + = warm or positive response
\- = anxious response
z = hostile response
0 = neutral response

TABLE XIV

FREQUENCY OF RESPONSE OF MOTHER NUMBER 12 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 236 | 363 | 38 | 4 | - | 3 | 29 | 196 | 1 | 1 | 475 |
| Play with voc. | 64 | 114 | 14 | - | - | - | - | 67 | - | - | 125 |
| Vocalization | 35 | 53 | 4 | - | - | - | - | 24 | - | - | 68 |
| Fuss | 22 | 64 | - | - | - | 1 | - | 23 | 4 | - | 60 |
| Protest | 47 | 159 | 10 | 2 | - | - | - | 54 | 2 | 6 | 156 |
| Non-nutritive suck. | 7 | 10 | - | - | - | 3 | - | 2 | 1 | 1 | 16 |
| Affection-giving | - | 3 | 3 | 1 | - | - | - | 6 | - | - | 1 |
| Looks-at | 28 | 24 | 1 | 1 | - | - | - | 9 | - | - | 45 |
| No Activity | 167 | 146 | - | - | - | - | 57 | 40 | - | - | 330 |
| Resist | 12 | 24 | - | - | - | 3 | - | 9 | 3 | - | 27 |
| Sub-totals | 618 | 960 | 70 | 8 | - | 10 | 86 | 430 | 11 | 8 | 1303 |

Out of Contact - 0

* + = warm or positive response
- = anxious response
z = hostile response
0 = neutral response

TABLE XV

FREQUENCY OF RESPONSE OF MOTHER NUMBER 13 TO THE BEHAVIOR OF THE INFANT

| Infant Behavior | Overt Maternal Behavior | | | | | | | Feeling Tones Accompanying Maternal Behavior * | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Looks | Talks | Plays | Affection | Ignore | Control | No Interaction | + | - | z | 0 |
| Play without voc. | 171 | 155 | 5 | - | - | 3 | 13 | 157 | - | - | 190 |
| Play with voc. | 30 | 73 | 22 | 2 | - | - | - | 86 | - | - | 41 |
| Vocalization | 48 | 92 | 3 | - | - | - | 11 | 52 | - | - | 102 |
| Fuss | 4 | 13 | 1 | - | - | - | - | 7 | - | - | 11 |
| Protest | - | - | - | - | - | - | - | - | - | - | - |
| Non-nutritive suck. | 1 | 2 | - | - | - | 2 | - | 2 | - | - | 3 |
| Affection-giving | 1 | 2 | - | 2 | - | - | - | 4 | - | - | 1 |
| Looks-at | 2 | 16 | 4 | - | - | - | 9 | 8 | - | - | 23 |
| No Activity | 340 | 118 | 4 | - | - | 1 | 20 | 49 | 1 | - | 433 |
| Resist | - | 6 | - | - | - | - | - | 1 | - | - | 5 |
| Sub-totals | 597 | 477 | 39 | 4 | - | 6 | 53 | 366 | 1 | - | 809 |

Out of Contact - 576

*

+ = warm or positive response
- = anxious response
z = hostile response
0 = neutral response

TABLE XVI

CHI-SQUARE VALUES FOR OVERT RESPONSE OF INDIVIDUAL MOTHERS TO THE INFANT'S BEHAVIOR*

| Subjects | df | Chi-Square Values |
|---|---|---|
| 1 | 20 | 1127.4278** |
| 2 | 28 | 437.7531 |
| 3 | 28 | 478.9231 |
| 4 | 32 | 843.9740 |
| 5 | 16 | 388.5511 |
| 6 | 24 | 417.7326 |
| 7 | 18 | 293.1406 |
| 8 | 24 | 547.3901 |
| 9 | 24 | 615.4711 |
| 10 | 36 | 801.8773 |
| 11 | 18 | 208.3896 |
| 12 | 32 | 221.9463 |
| 13 | 18 | 365.6044 |

TABLE XVII

CHI-SQUARE VALUES FOR FEELING TONES ACCOMPANYING THE BEHAVIOR OF INDIVIDUAL MOTHERS*

| Subjects | df | Chi-Square Values |
|---|---|---|
| 1 | 5 | 331.13817** |
| 2 | 7 | 92.5424 |
| 3 | 7 | 129.1591 |
| 4 | 16 | 665.9790 |
| 5 | 5 | 205.9643 |
| 6 | 12 | 264.3557 |
| 7 | 14 | 715.6167 |
| 8 | 8 | 128.3841 |
| 9 | 12 | 199.0276 |
| 10 | 18 | 220.77875 |
| 11 | 14 | 68.0654 |
| 12 | 18 | 138.7392 |
| 13 | 6 | 215.0746 |

* All statistical computation was done by the Department of Statistics, Oregon State College.

** All of these values are significant beyond the .001 level of confidence.

In making this individual analysis it became apparent that the situation in which the behavior was occurring also had its influence upon the behavior of the mother and the infant. The nature of this influence has been analyzed and also appears in this chapter.

Response Patterns of Individual Mothers

From the frequency response tables, Tables III through XV, the wide range in individual response patterns of mothers to a single infant is evident. Some mothers were predominantly Lookers, e.g., mothers 2, 6, 9, 11, and 13, while others were predominantly Talkers, 1, 3, 4, 5, 7, 10. Some mothers played with the infant, 5, 7, 8, 10, while others played very little, 6, 9, 12, 13. Some mothers were affectionate, 1, 5, 7, while others rarely showed affection toward the baby, 2, 9, 12, 13.

In spite of these differences, some general trends in the response of mothers to the infant can be noted. For example, Look, Talk, and Play were the most frequent responses to all active infant behavior. Affection most frequently appeared in response to the infant behaviors Interactive Play with and without Vocalization, and Infant Affection-giving. Affection was given least often when the infant was Resisting or just Looking. Controlling behavior on the part of the mothers most often occurred during a feeding situation,

although it also occurred during Non-nutritive sucking when the mothers would remove the infant's fingers from her mouth. Very few of the subjects deliberately Ignored the infant, and the category No Interaction occurred essentially around the bottle feeding situation when the infant was Playing without Vocalization or was evidencing No Activity.

While the mothers' overt behavioral responses were extremely interesting, both in their variation and their patterning, overt behavior was not examined in detail. The focus was upon the feeling tones accompanying these behaviors. Such a focus seems justified in view of current research findings on the significance of the emotional quality of mother-child interaction on personality development (1), (2), (11), (18).

An inspection of the frequency count tables for variations between mothers on feeling tone qualities showed the same wide range in individual response patterns as was observed for overt behavior. Some mothers were essentially warm, positive people in their response to the infant, e.g., mothers 3, 4, 7, 8, while others were essentially neutral, 2, 6, 9, 11, 12. Other mothers showed very little anxiety or hostility in their interaction with the baby, 1, 5, 8, 13, while still others showed a good deal of such feeling, 6, 9, 10, 11. An attempt to summarize these data appears as Figure 1.

Figure 2 presents a classification of infant behavior according to the responses it elicits in the mothers.

| RANK | Ss WARM or POSITIVE | Ss ANXIOUS or HOSTILE | Ss NEUTRAL |
|---|---|---|---|
| High | #3 985 | #9 133 | #9 1577 |
| | #7 953 | #6 87 | #6 1512 |
| | #4 917 | #11 69 | #11 1509 |
| | #8 855 | #10 56 | #12 1304 |
| Medium | #1 790 | #12 18 | #2 1180 |
| | #10 764 | #4 12 | #1 960 |
| | #5 740 | #3 8 | #5 952 |
| | #12 430 | #2 7 | #10 925 |
| | #13 366 | #7 5 | #13 809 |
| Low | #11 174 | #8 4 | #7 794 |
| | #2 141 | #1 2 | #4 781 |
| | #6 128 | #13 1 | #8 771 |
| | #9 36 | #5 0 | #3 547 |

Figure 1. Subjects Ranked According to Frequency Count for Feeling Tone

The discussion which follows deals with the relationship between the infant's behavior and response of the mothers. While much of this will center around frequency count data, general impressions gained during observation which seem relevant will also be included. The frequency count data referred to in this discussion appear in the frequency count Tables III through XV, and in Figures 1 and 2.

All of the mothers exhibited positive feelings toward the infant, but some exhibited much more than others. Mother 3 had the highest frequency of positive responses, while mother 9 had the fewest. Most of the positive feelings occurred around the infant behaviors that have been classified as encouraging.

Group A: Behaviors which seem to bring more positive responses from the mothers.

1. Play without vocalization (during active mother-infant play)
2. Play with vocalization
3. Vocalization
4. Affection-giving

Group B: Behaviors which seem to bring more anxious and hostile responses from the mothers.

1. Fuss
2. Protest
3. Non-nutritive sucking
4. Controlling

Group C: Behaviors which seem to encourage more neutral responses from the mothers.

1. Play without vocalization (during infant bottle feeding)
2. Looking
3. No activity (during infant bottle feeding)

Figure 2. Infant Behavior Classified According to the Maternal Feeling Tone It Tends to Elicit

While mothers tended to respond in a positive way to the infant's encouraging behavior, they were not so consistent in their response to frustrating and neutral behavior. For example, mothers 3 and 4 were most consistently positive to all of the infant behaviors classified as encouraging, but they became increasingly neutral in their response as the infant became more quiet. These mothers also evidenced some anxiety when the infant's behavior was frustrating. Mother 7 was mostly positive to any active overt infant behavior,

whether encouraging or frustrating, but she was largely neutral whenever the infant was inactive. This was especially true during the feeding situation. Mother 8 was more positive than neutral to all of the infant's behaviors. None of these mothers evidenced hostility or showed much anxiety; they also ranked lower in neutrality than the rest of the subjects.

All of the mothers, with the exception of mother 5 had some moments of anxiety. Only mothers 6, 9, and 12 were hostile toward the infant. It is noteworthy, however, that very little anxiety or hostility occurred in the presence of infant behavior classified as encouraging. On the other hand mothers tended to become more nervous or irritable when the infant's behavior was frustrating. This may illustrate how patterns of interaction are built up between a parent and child. The infant's behavior may possibly excite irritation or anxiety in the parent and in response to the parent's behavior the infant may become increasingly frustrating, thus forming a "vicious cycle" of undesirable relationships.

The five mothers who evidenced the most anxiety and hostility in response to the infant's behavior were mothers 6, 9, 10, 11, 12. Mother 9 was the most anxious and hostile subject of the group. She had the least number of positive responses and the highest number of neutral responses. She was the only subject to have a high frequency count of Ignore and the only mother who did not show the infant affection during entire observation periods. Nearly any kind of infant behavior seemed to upset her.

Mother 6 also showed upset to most infant behavior. While mothers 10 and 11 showed a good deal of upset, they confined it largely to the infant's frustrating behavior, especially her fussing. Mother 12 had to cope with more infant protest than any other subject. Her hostile responses were directed only to this aspect of the infant's behavior.

Fussing seemed to be the most upsetting infant behavior of all. All of the subjects had to cope with fussing at some time during the period they were observed and, in general, their response to this behavior was probably the best indication of their ability to cope with frustration. The amount of fussing with which mothers had to cope varied from 18 times for mother 13 to 188 times for mother 8. Interestingly enough, the frequency with which fussing had to be faced had little to do with the nature of the mother's response to the fussing. For example, mother number 8 had to face this kind of behavior 188 times, yet she evidenced upset (anxiety) on only two occasions. Mother 4 was similarly positive in her response to fussing. In 164 instances she responded only once with anxiety. Mother 6, on the other hand, was predominantly neutral in her response to 144 intervals of fussing, with 31 intervals of anxiety or hostility punctuating the neutrality of her behavior.

It is clear from data such as these that individual mothers respond differently to similar behavior on the part of the infant, which in turn points up the fact that the behavior of a mother toward her child is not only a function of the child's behavior, but is also

a function of what she brings to the situation personally. This, coupled with the effect of the immediate situation on both the mother and child, makes it clear why it is so difficult to predict maternal behavior.

In passing, it is of interest to note that the infant's Non-nutritive sucking scores were the highest (50 times) for those mothers who had a high frequency of anxious or hostile responses.

All of the mothers had intervals of neutral response. There seemed to be a general tendency for all of the mothers to become more neutral in feeling tone when the infant became less active and quiet. This predominantly neutral response occurred consistently during the feeding situation. The most consistent infant behavior at this time was Play without Vocalization, and No Activity, as the infant became quiet and sucked the bottle.

There were five mothers who were more neutral than positive in their responses to the infant, mothers 2, 6, 9, 11, 12. In addition to the neutrality of their behavior, mothers 6 and 9 were also anxious and hostile to much of the infant's behavior. While mothers 2, 11, and 12 were also predominantly neutral in their response to the infant, mother 2 showed almost no anxiety or hostility, mother 11 evidenced anxiety around infant behavior that was frustrating, and mother 12 was both anxious and hostile around infant behaviors that were classified as frustrating. Generally speaking, the subjects who were more neutral than positive in their response to the infant had more upset than those subjects who were more positive than neutral.

Within this group of thirteen subjects there were four mothers who were neither particularly positive nor particularly neutral, mothers 1, 5, 10, 13. These subjects had a slightly higher frequency count of neutral response than positive response to most of the infant behaviors. However, each of these subjects was dominantly positive to some kinds of infant behavior. These mothers also varied widely in their anxiety-hostility scores. For example, mother 1 was predominantly positive to the infant's encouraging behavior, but she was predominantly neutral in her response to the infant's fussing and less active behavior. She appeared to be very calm with the infant, evidencing anxiety in only two intervals. Mothers 5 and 13 reacted positively toward active behavior on the part of the infant, regardless of whether it was encouraging or frustrating. However, both of these mothers also became neutral as the infant became quiet. These two subjects showed less anxiety than any of the other mothers. Although mother 10 was more neutral than positive in her behavior, she also was more positive to active infant behaviors and more neutral to quiet infant behaviors. She was easily frustrated and responded with upset to all classes of infant behavior. While this mother was one of the four who showed the greatest anxiety, she was never hostile.

From these data it is clear that there was wide variation in the response of mothers to the infant. Some were predominantly talkers while others were predominantly lookers. Others were predominantly positive while others were predominantly neutral. Some evidenced a good deal of upset; others did not. Characteristically active,

encouraging behavior on the part of the infant brought about positive response in mothers, while quiet behavior on the part of the infant brought about neutrality of response in mothers. Frustrating behaviors such as fuss, protest, resist, etc., tended to bring about upset in the mothers in the form of anxiety or hostility, although there were notable exceptions to these patterns (see p.38). The diversity of maternal response is one of the most striking features of this research. Much needs to be done in identifying the underlying factors.

The Situation as a Determiner of Behavior

It will be recalled that the observations for this study took place within specified situations. Three situations were required: Bathing, Dressing, and Feeding. Two others were optional; if the situations occurred, the behavior between mother and infant was recorded within them. These were situations where the mother was Holding the infant at times other than Bathing, Feeding, or Dressing, or when the infant was in some other place. The question asked here is whether the behavior of the mothers differed in these different situations.

In attempting to answer this question focusing on the feeling tone or qualitative data was followed. For each situation tables were prepared which summarized the attitudes mothers displayed in the several situations. Since different mothers were observed for differing lengths of time, frequency count data have been changed to proportions in order to make the data comparable for all mothers.

General impressions gained during observation, background information, etc. will be brought into the discussion where relevant.

TABLE XVIII

SITUATION I: THE MOTHER HOLDING THE INFANT AT TIMES OTHER THAN BATHING, FEEDING OR DRESSING

| Ss | Number of Observations | Feeling Tones Given in Proportions | | | |
|---|---|---|---|---|---|
| | | Warmth | Anxiety | Hostility | Neutrality |
| 1 | - | - | - | - | - |
| 2 | - | - | - | - | - |
| 3 | - | - | - | - | - |
| 4 | - | - | - | - | - |
| 5 | 138 | .42 | - | - | .58 |
| 6 | - | - | - | - | - |
| 7 | 195 | .84 | - | - | .16 |
| 8 | 368 | .40 | - | - | .60 |
| 9 | 146 | .03 | .03 | .05 | .89 |
| 10 | 18 | .50 | - | - | .50 |
| 11 | - | - | - | - | - |
| 12 | 100 | .20 | - | - | .80 |
| 13 | - | - | - | - | - |

As indicated in Table XVIII, Situation I did not occur frequently. It was only as the infant matured and was able to sit alone, roll over and attempt to move under her own power that the mothers began holding her in their arms or on their laps at times other than bathing, feeding or dressing.

Interestingly enough, in view of the activity of the infant in this situation, the feeling tone tended toward neutrality more than it did toward positive response. Mother 7 was the only girl who was dominantly positive. Only mother 9 exhibited anxiety and hostility

during this situation, which fits with the relative absence of positive feeling tone and the preponderance of neutrality in the rest of her behavior.

Since the Bathing, Feeding, and Dressing Situations were required to occur, the frequency count for these is much higher and every mother is involved.

TABLE XIX

SITUATION II: THE MOTHER BATHING THE INFANT

| Ss | Number of Observations | Feeling Tones Given in Proportions | | | |
|---|---|---|---|---|---|
| | | Warmth | Anxiety | Hostility | Neutrality |
| 1 | 551 | .55 | - | - | .45 |
| 2 | 101 | .07 | .009 | - | .92 |
| 3 | 157 | .85 | - | - | .15 |
| 4 | 143 | .87 | .02 | - | .10 |
| 5 | 110 | .63 | - | - | .37 |
| 6 | 159 | .14 | .02 | - | .84 |
| 7 | 119 | .91 | - | - | .09 |
| 8 | 123 | .81 | .02 | - | .17 |
| 9 | 178 | .06 | - | .03 | .90 |
| 10 | 126 | .66 | .06 | - | .28 |
| 11 | 166 | .10 | .05 | - | .84 |
| 12 | 171 | .30 | - | - | .70 |
| 13 | 72 | .58 | - | - | .40 |

Most of the mothers and the infant seemed to enjoy the Bathing Situation. Eight of the mothers, 1, 3, 4, 5, 7, 8, 10, 13, were more positive than neutral in their behavior when bathing the infant. Of these eight subjects three, 4, 8, 10, showed some anxiety. No hostility was shown by any of these eight in this Situation.

Five of the mothers, numbers 2, 6, 9, 11, 12, were more neutral

than positive. Of these, numbers 2, 6, and 11 showed some anxiety. Number 9 evidenced hostility but no anxiety, and number 12 was neither anxious nor hostile but proportionately more neutral than positive.

Each of the mothers approached the bathing situation in a different way. Some of them let the infant have a long bath. If she was permitted, the infant thoroughly enjoyed her bath and had a splashing good time. Much of her protest occurred when she was removed from the bath. Some of the mothers bathed the infant carefully, but quickly, with little time for play. A few gave the infant no opportunity to play.

Since the bath was scheduled for the hour just before dinner, several of the mothers were fearful that they would not be finished with child care responsibilities before dinner time, and this may have influenced the data.

Apparently there were factors in the Dressing Situation which caused it to be less pleasant than the Bathing Situation for most of the mothers. Only two subjects, 5 and 13, failed to evidence some upset. Interestingly enough, all of the subjects maintained their same relative positions with respect to positive and neutral feeling as they evidenced in the Bathing Situation. Apparently, while the Dressing Situation brought about feelings on the part of the mothers that the Bathing Situation did not, there were sufficient factors in common, or the consistency of maternal response was sufficiently strong, to reflect the same general response tendencies in each.

TABLE XX

SITUATION III: DRESSING THE INFANT

| Ss | Number of Observations | Feeling Tones Given in Proportions | | | |
|---|---|---|---|---|---|
| | | Warmth | Anxiety | Hostility | Neutrality |
| 1 | 386 | .56 | .003 | - | .44 |
| 2 | 187 | .13 | .005 | - | .86 |
| 3 | 303 | .71 | .02 | - | .26 |
| 4 | 302 | .68 | .01 | - | .30 |
| 5 | 275 | .61 | - | - | .39 |
| 6 | 364 | .04 | .04 | - | .91 |
| 7 | 297 | .69 | .01 | - | .30 |
| 8 | 230 | .79 | .009 | - | .20 |
| 9 | 333 | .02 | .06 | .09 | .83 |
| 10 | 254 | .60 | .05 | - | .35 |
| 11 | 334 | .11 | .07 | - | .81 |
| 12 | 309 | .34 | .01 | .01 | .63 |
| 13 | 158 | .53 | - | - | .47 |

The general impressions were that the infant's behavior was frequently frustrating to the mothers during the Dressing Situation. The infant enjoyed her bath and disliked being dressed. She disliked having garments pulled over her head. She often stiffened her back, kicked or cried while being diapered.

The Feeding Situation has been the focus for many important studies of infancy and mother-infant relationship. A few of the authors of studies of this nature are Freud (6), Spitz (18), Bowlby (1), Goldfarb (8), Brody (2), Escallona (5), and Levy (11). All of these authors emphasize the importance of the quality of the mother's relationship with the infant during feeding, as an indicator of the mother's general attitude toward child-rearing, as an indicator of the

TABLE XXI

SITUATION IV: FEEDING THE INFANT

| Ss | Number of Observations | Feeling Tones Given in Proportions | | | |
|---|---|---|---|---|---|
| | | Warmth | Anxiety | Hostility | Neutrality |
| 1 | 815 | .33 | .001 | - | .67 |
| 2 | 855 | .10 | .006 | - | .89 |
| 3 | 848 | .51 | .001 | - | .48 |
| 4 | 1121 | .40 | .004 | - | .58 |
| 5 | 1084 | .33 | - | - | .67 |
| 6 | 900 | .03 | .03 | .04 | .90 |
| 7 | 582 | .39 | .01 | - | .60 |
| 8 | 742 | .40 | - | - | .60 |
| 9 | 923 | .01 | .02 | .05 | .92 |
| 10 | 684 | .23 | .03 | - | .74 |
| 11 | 871 | .05 | .03 | - | .92 |
| 12 | 875 | .20 | .007 | .005 | .78 |
| 13 | 947 | .25 | .001 | - | .74 |

over-all mother-infant relationship, and as a predictor of the personality development of the child.

The results of this study of the Feeding Situation are interesting in light of this consistent focus. The data in Table XXI show a change in the response pattern of every subject during the Feeding Situation toward more neutral behavior. The frequency of positive responses dropped for every subject and the frequency of neutral responses increased for every subject. It is noteworthy, however, that the amount of upset on the part of mothers around the Feeding Situation was comparable to that in the Dressing Situation.

Certain factors which occurred during the Feeding Situation may have influenced these results. The Feeding Situation was the least

active of all, and there was a general tendency for the mothers to become more neutral as the infant became quiet or inactive.

There were also elements of frustration. During the Feeding Situation the infant found new ways to control her environment other than by Fuss and Protest. For example, she attempted to control the situation by holding the nipple of the bottle in her mouth but not sucking, by turning her head away from the bottle or food, by pushing the bottle or spoon away, by spitting out food she didn't like, or by clenching her jaws so that she couldn't be fed. During the last few observations she was able to push the bottle out of her mouth and sit up whenever she wished. It was around behaviors such as these that upset in the mothers took place, and these kinds of behaviors increased with the growth of the infant.

In the actual process of feeding, the infant was given solid foods first. Until she was about seven months old and strong enough to sit in the high chair by herself, she was held on the mother's lap. After being fed solid foods the infant was given a bottle. During this time the infant was always held. This was the period of time which held the least interaction between the mother and infant. The infant became quiet as she sucked. Play without vocalization was frequent during this period. She would kick one leg, pat the bottle or hand of the mother holding her, or she would look at the mother or someone else in the room. As she became more relaxed all movements would tend to stop except sucking. During the early observations,

when she was younger she frequently went to sleep at this time.

The mothers responded to the bottle feeding in different ways. Many used this time to rest. All of them made themselves comfortable in a large chair or on the davenport. Sometimes they closed their eyes or looked out of a window or at the infant, and sometimes they watched the observers or visited with other girls who might have come into the room. It was during bottle feeding that the highest proportion of No Interaction between the mother and infant occurred.

It is difficult to evaluate these data in view of the emphasis that has been put upon the feeding situation as the prime indicator of the quality of the mother-infant relationship. Was the relative lack of effect around the situation a function of the infant's age or of the lack of emotional involvement on the part of the students in comparison with real mothers? Was the lack of effect healthy or unhealthy? With respect to how the infant was held, Brody's comments about the holding of infants is relevant. She points out that

> ....holding an infant for feeding was no guarantee of his experiencing physical security during his meal, but where his being held did appear to increase his or his mother's physical ease, the feeding was more likely than otherwise to be a satisfying one, because mothers who could provide good physical support were usually adequately sensitive. Where despite physical distance from the infant the mother maintained contact with him by vocal or visual means, this contact was also observed to increase the satisfying quality of the feeding episode.
>
> It appears that a mother may choose to breast feed, may try to give good physical support to her infant and may try to feed on a demand schedule--all popular and important criteria for adequate feeding--and yet unknowingly offer little satisfaction to her infant in the process. In all of these aspects of feeding looms

> the problem of a mother's motives in adopting any of the procedures, and of her consciousness of conflict in this motivation. Direct observation may not reveal the presence of conflict, but a mother's capacity to make the early feeding experience of her child satisfying can probably be assessed if the observer bears in mind the three sets of criteria that have been brought forward: the first relates to the mother's sensitivity to the infant's needs; the second to her use of physical space, time and communication during the feeding; and third to her choice of feeding methods and motives for her choice. (2, p.321)

Obviously no conclusions along these lines can be drawn.

Since Situation V, Infant Alone, did not involve interaction between mother and infant, it was not included in the present analysis.

TABLE XXII

SITUATION VI: INFANT IN OTHER PLACE

| Ss | Number of Observations | Feeling Tones Given in Proportions | | | |
|---|---|---|---|---|---|
| | | Warmth | Anxiety | Hostility | Neutrality |
| 1 | - | - | - | - | - |
| 2 | 185 | .12 | - | - | .88 |
| 3 | 233 | .85 | - | - | .15 |
| 4 | 144 | .82 | - | - | .18 |
| 5 | 181 | .64 | - | - | .36 |
| 6 | 305 | .19 | .02 | .003 | .79 |
| 7 | 559 | .45 | - | - | .55 |
| 8 | 179 | .80 | - | - | .20 |
| 9 | 172 | .02 | .01 | .03 | .93 |
| 10 | 663 | .55 | .02 | - | .43 |
| 11 | 381 | .18 | .04 | - | .78 |
| 12 | 297 | .25 | - | - | .75 |
| 13 | - | - | - | - | - |

Situation VI turned out to be an "extra time" situation in the sense that if additional time was needed to complete the desired 73 minutes of observation after the Feeding, Bathing, and Dressing Situations were observed, Situation VI was brought into play.

In this Situation the mothers did not maintain the relative positions they evidenced with respect to feeling qualities in other Situations. There is evidence to suggest that this lack of patterning is closely related to whether or not the mother played with the infant or let the infant play by herself during this time. If the mother watched rather than physically interacted with the infant her behavior tended toward the neutral side. If she actively played with the infant her behavior tended toward the positive side.

On the basis of these data, it is evident that the feeling tones accompanying maternal behavior vary with the Situation in which the mother and infant are interacting, though patterns of response for individual mothers tend to remain somewhat constant. It is likely that this variation is due, at least in part, to the variation in infant behavior within the various situations. Whatever the causative factors may be which lead to different behavior in different Situations, the fact that the Situation is a determiner of behavior should be considered in designing future research studies of mother-infant interaction.

Some Problems Encountered in this Study

Many of the factors which influenced these data, or were thought

to be sources of error in the data, have been discussed previously. There are, however, certain factors inherent in this type of research that have not been previously discussed.

Factors involved in the observational procedure undoubtedly affected the behavior of the mothers. For example, the presence of the observer probably altered the situation between mother and infant, although there is some question as to the seriousness or the extent of this alteration (9). Rheingold has stated the accepted position when she says, "Admittedly the observer's presence, which is required by this method, will alter the mother's usual behavior." (16, p.14)

Also, there was the problem of determining who was the initiator or the stimulus to a particular interactive sequence and who was the responder. One can never be sure of this and observations made in terms of discrete five-second intervals do little to enhance understanding. It was only after the data were tabulated and ordered that patterns became discernible.

The recording of overt maternal behavior did not seem to be a particularly difficult problem in this study. However, there were many problems involved in recording feeling tones. The cues which were used to identify these were often subtle, and it took a great deal of discussion on the part of the observers in order to arrive at a consensus.

Of the feeling tones which were recorded, the observers felt that the positive was the easiest to record. This quality seemed

to require more responsiveness on the part of the subject and, consequently, the cues were more apparent. The facial or vocal expression during a positive response indicated a sense of rapport, lack of tension, confidence, and a general warmth of attitude toward the infant. The depth and sincerity of this positive response were factors which could not be analyzed from these data.

The feeling tones of anxiety and hostility were the most difficult to identify reliably. Part of the problem was in the lack of opportunity to observe a great deal of this kind of behavior in preliminary observations. Lack of experience in discrimination and identifying cues made these observations difficult. In addition, many of the cues used to identify anxiety were the same cues used to identify hostility. For example, biting the lip and clenching the hands were common to both.

There were also intervals during which maternal behavior appeared neutral but was difficult to record as such. At times the observers felt that while the mothers were expressionless, they were far from being without feelings. What and how deep their subjective feelings were cannot be answered. The general tendency for mothers who were predominantly neutral in most of their interaction with the infant to also have a high score on anxiety or hostility is a case in point. It is likely that some of these expressions of objective neutrality were masks to cover feelings of insecurity. The observers had no choice but to take the mothers' external cues at face value.

The above factors affected the accuracy of these data to a certain degree, but their influences were probably not so strong as to make the data invalid.

# CHAPTER IV

## SUMMARY AND CONCLUSIONS

### Summary

The primary purpose of this study was to explore the relationship between overt infant behavior and the response of child directors in a Home Management House to this behavior. The response of the mothers was analyzed in terms of a chi-square analysis, which was used to determine the extent to which the mothering ones responded differentially to various infant behaviors, and a descriptive, interpretive analysis designed to explore the response patterns of individual mothers. Also, an analysis was made of the effect of the situation on the behavior of the infant and the mothers.

The subjects for the study were thirteen senior girls in Home Economics who were living in Withycombe Home Management House, and the six-to-nine-month old infant who was living in the house at that time. The observers recorded individually on different days for 73 minutes. The observation time was broken down into one twenty-five-minute feeding session and one forty-eight-minute bathing, dressing and feeding session. If the observations of bathing, feeding and dressing did not require the full 73 minutes, the infant and mother were observed for the balance of the time wherever they happened to be.

Direct observation of mother-infant interaction was used in measurement, with the behavior of the infant, the behavior of the

mother and the feeling tone accompanying maternal behavior being recorded each five-second interval in terms of preconceived categories. The situations in which the interaction was occurring, i.e., Feeding, Bathing, Dressing, etc., were also noted. Two observers were used in the study, and by their systematic rotation were able to control constant observer error. The reliability of individual categories of behavior, and of the observers in general, were demonstrated before observations for purposes of data collection were undertaken.

The observations were designed to keep the situations as normal as possible. All of the observations occurred in Withycombe Home Management House, Oregon State College.

## Conclusions

The results of the chi-square analysis indicate clearly that mothers respond differentially to the behavior of the infant in both their overt behavior and the feeling tone qualities which accompany that behavior. Each chi-square value computed was significant beyond the .001 level of significance.

The analysis of the data in terms of the response patterns of individual mothers showed marked individual differences among the subjects in their maternal behavior and in the feeling tone qualities accompanying their behavior. Some mothers were talkers

while others were lookers; some mothers played a lot with the infant while some played with her very little; some were affectionate, others were not. Some mothers were essentially warm, positive people in their response to the infant while others were essentially neutral, non-affective people. Other mothers showed very little anxiety or hostility toward the baby while others displayed a good deal of such feeling.

In general, those subjects who were the most positive in their response were more talkative, affectionate, and responsive or sensitive to the needs of the infant. The most positive mothers had the least number of neutral responses and were in the low and medium groups for anxious response. None of the more positive mothers exhibited hostility toward the infant. The subjects who were most neutral had a tendency to evidence more upset, i.e., they tended to evidence more anxiety and hostility than the more positive mothers. In general, these mothers seemed less confident in their child care activities than the more positive mothers. Also, they looked more and talked less than the more positive mothers.

The results of the study also indicated that certain infant behaviors seemed to stimulate the mothers in different ways. For example, most of the subjects responded more positively and more

actively to infant behavior which was happy, active, playful and affectionate. Most of the subjects became more neutral, less responsive and less active when the infant was quiet or unresponsive, especially in the feeding situation.

The results also indicated that the situations which structured the observations influenced the behavior of the mothers to some extent, although individual patterns of maternal behavior seemed to show a consistency from situation to situation. For example, those mothers who were generally most positive in their response to the infant were consistently the most positive in the three required situations, and the mothers who were most neutral to the infant behavior were consistently more neutral than positive in these three situations.

The dressing and feeding situations seemed to cause more of the subjects to have intervals of frustration or upset than the bathing situation. The increased maternal frustration probably resulted from the frustrating behavior which the infant displayed, e.g., her fussing, protesting, resisting, etc. The neutrality of behavior increased consistently for every subject during the feeding situation.

The evidence seems clear from these data that the infant's behavior did affect the responses of the persons interacting with her. The evidence is equally clear, however, that the response to the infant was not only a function of the infant's behavior but was also a function of what the mother brings with her to the situation.

This, coupled with the effect of the immediate situation on both the mother and child, suggests why it is so difficult to predict maternal behavior.

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# APPENDICES

# APPENDIX A

## SITUATIONAL CATEGORIES

These categories were used to indicate the situation in which the mother-child interaction occurred.

| Symbol | Title | Definition |
|---|---|---|
| I | Holding Infant | This situation is restricted in that it will be recorded only when Situations II, III, and IV are not involved. This situation will be recorded when the child-director holds the infant; picks her up; or rocks the infant. |
| II | Bathing Infant | The child-director bathes the infant. |
| III | Dressing Infant | The child-director dresses or undresses the infant; this includes any change of clothing. |
| IV | Feeding Infant | This includes nutritive sucking as well as feeding solid foods. |
| V | Infant Alone | The infant alone in bed or any other place; can be asleep or awake. The place must be recorded. |
| VI | Infant in Other Place | Child-director is with the infant in some place other than that covered by the situations listed above. The place must be recorded. |

# APPENDIX B

## INFANT BEHAVIOR CATEGORIES

These categories define infant behavior. One behavior category was recorded each five-second interval.

| Category Symbol | Category Title | Category Definition |
|---|---|---|
| P | Play | Baby playing. This includes any type of play with toys, hands, clothing, kicking, splashing in water without making vocal sounds. |
| Pv | Play with vocalization | Same as above except infant making vocal sounds. |
| L | Looks | Infant is looking directly at the child-director. This does not include playing, protesting, giving affection. |
| F | Affection giving | Infant smiles, laughs, coos, touches, kisses, hugs. This category is scored if infant's behavior is directed toward the child-director. If directed toward someone else it will be recorded as Play with Other (Po). |
| J | Fuss | Infant whines, whimpers, or in some way complains of discomfort; this is often accompanied by an unhappy facial expression. |
| K | Protest | Crying, pulling away, body stiffening. |
| V | Vocalize | Infant vocalizing only, no physical activity. |
| S | Non-nutritive sucking | Any form of sucking, on hand, fingers, toys, clothing which is not nutritive. |
| R | Resistance | Infant controls, resists. Throws head back, pushes food away with hand, spits food out. |
| N | No Activity | Infant lying quietly but awake. The infant is displaying none of the above categories. |
| X | Other | All other behavior not included in these categories. The behavior must be recorded. |

# APPENDIX C

## MATERNAL OVERT BEHAVIOR CATEGORIES

| Category Symbol | Category Title | Category Definition |
|---|---|---|
| F | Affection | All overt behavior of warmth when the child-director pats, touches, smiles, comforts, or snuggles her face into infant's neck. There must be physical contact between child-director and infant. |
| R | Controls | Child-director appears to modify, redirect, restrict or in some way control the infant's behavior. |
| P | Plays | Child-director gives a toy to the infant or adjusts toy; shakes rattle, plays peek-a-boo; bobs head up and down or brings head close to infant. |
| T | Talks | Restricted item. This is only recorded when child-director is talking directly to infant. This item includes other sounds made directly to the infant. Talking not directly to the infant will not be recorded. |
| L | Looks | Restricted item. This is only recorded when child-director is showing no other behavior than looking directly at the infant. It will not be recorded if it occurs with other behavior. |
| G | Ignores | Child-director fails to respond to infant behavior directly. The ignoring may be due to unawareness of infant's stimulations or a conscious decision to ignore. |
| N | No Interaction | Appears to be no overt interaction between infant and child-director. |
| X | Other | All behavior that occurs and is not covered by one of the above categories. The other behavior must be recorded and used if relevant to the study. |

# APPENDIX D

## MATERNAL FEELING TONES CATEGORIES

One feeling tone accompanied each maternal behavior category. These feeling tones were not overtly observed behavior but rather the general quality or feeling the mother displayed toward the infant.

| Symbol | Title | Definition |
|---|---|---|
| + | Positive | Includes all behavior which have positive feeling tones about them; pleasant, happy, affectionate, warmth, enjoyable. |
| - | Anxious | Behavior which contains cues that suggest the presence of anxiety or insecurity, e.g., body tenseness, random body movements, feeling tones in language, nervous mannerisms, hesitations, and other indications of a lack of self-confidence. |
| Z | Hostile | Non-accepting behavior which shows anger, hostility, or rejection demonstrated by such cues as voice qualities, flushing of face, clenching fists, facial features, etc. |
| 0 | Indifferent | Lack of obvious cues to these other three qualities; the cues being so slight that the observer is not certain that both observers will agree to the behavior feeling tone. |

# APPENDIX E

## THE PREFERENTIAL LIST OF MATERNAL BEHAVIOR CATEGORIES

The maternal behaviors deemed more important in the child-rearing process are higher on the list, while those of lesser importance are lower on the list.

1. Affection
2. Controls
3. Plays
4. Talks
5. Looks
6. Ignores
7. No Interaction
8. Other

# APPENDIX F

## SAMPLE OBSERVATION SHEET

The Roman numeral indicates the situation in which all this behavior occurred. Each square represents one five-second interval. The first letter in the top part of each square indicates the maternal behavior. The second letter indicates the feeling tone accompanying that behavior. The letters at the bottom of each square indicate the infant behavior.

NAME Subject

DATE

SESSION 48 or 25

IV

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| Lo | P+ | T- | F+ | Lz | | | |
| P | P | S | S | K | | | |
| | | | | | | | |
| | | | | | | | |

The sample observation occurred during the Feeding Situation (Situation IV). Moving from left to right the record would read:

| | |
|---|---|
| Maternal behavior: | Looks with neutral feeling |
| | Plays with warmth |
| | Talks anxiously |
| | Gives affection with warmth |
| | Looks with hostility |
| Infant behavior: | Plays |
| | Plays |
| | Sucks |
| | Sucks |
| | Protest |