THE DEVELOPMENT OF AN ORDINAL SCALE FOR OBSERVING ADAPTIVE RESPONSES IN THE HOSPITALIZED TODDLER

BY

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CHAPTER I

INTRODUCTION

One of the primary goals of nursing care which is planned for the one and one-half to three year old child in hospital is to prevent the occurrence of mal-adaptive behavior. This goal can be accomplished by providing care that will assist him in gaining or retaining the ability to deal with stress in a way that is conducive to his physical health and psychosocial growth and development. There are many theories and hypotheses that nurses may use to guide them in their care of young children, but critical analyses and studies which test theories are few.

Case studies[1,2] demonstrate that nurses may use the behavior of a child as the basis of their nursing intervention. A study by Denyes notes that nursing care, based on a four year old child's adaptive responses as reflected by his behavior, resulted in an increased ability to deal constructively with "threatening new experiences imposed by hospitalization."[3] His behavior during re-admission six weeks

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[1]Sara Arneson, "Changes in a Toddler's Mode of Adapting to Separation From His Mother During Daily Relationship Experiences With One Nurse" (unpublished Master's paper, School of Nursing, University of Wisconsin, 1967).

[2]Norma Dobson, "Nursing Care of a Toddler Who Had Failed to Thrive" (unpublished Master's paper, School of Nursing, University of Wisconsin, 1967).

[3]Mary Jean Denyes, "A Preschool Child With Hirschsprung's Disease Uses a Nurse to Gain Ego Strength" (unpublished Master's paper, School of Nursing, University of Wisconsin, 1967), p. 44.

later indicated that he had retained the adaptive devices he had gained during the previous hospitalization.

A comparative study of the pre- and post-hospital behavior of sixty children who were hospitalized with or without their mother was done by Fagin.[1] The conclusions of the study were based on the sixty mothers' responses to a series of descriptions of behaviors. Each mother selected those that most closely described her child's behavior. Fagin's study stimulated further the writer's interest in devising an instrument which could be used in the categorization and quantification of a child's behavior in order to determine his adaptive responses. The scales from Fagin's study[2] were not used because they did not provide all ranges of behavior observed in the hospitalized child. Had quantification been more rigorous in her study, relationships between behaviors in different situations--between eating and sleeping situations, for instance--might have been found.

In light of the case studies and Fagin's study, behaviors appear to be a productive way of assessing a child's adaptive responses. Theories and hypotheses used in nursing care might be more rigorously studied and tested if there were a tool to measure the child's behavioral responses to nursing intervention. An example of a testable hypothesis of both practical and theoretical import might be: Nursing

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[1]Claire M. Fagin, The Effects of Maternal Attendance During Hospitalization on the Post Hospital Behavior of Young Children: A Comparative Survey (Philadelphia: F. A. Davis Co., 1966), p. 67.

[2]Ibid., pp. 91-98.

intervention in the form of encouragement to express overtly his feeling is more effective in assisting the young child's adaptation to repeated illness and the treatment regime entailed in the hospital experiences than only meticulous physical care and diversional therapy.

In attempting to plan a study of the responses of the young child to specific elements of nursing intervention the writer was unable to find an appropriate instrument with which to measure behavioral responses.

Statement of the Problem

A tool is needed which quantifies the behavior that reflects the young child's adaptive responses so that research can be done to test current theory and develop new theory to guide nursing practice in the care of young children.

Theoretical Framework

When devising an instrument to quantify the behavioral responses of the young hospitalized child, the research worker must be cognizant of the range of behavioral possibilities which are manifest in him in a variety of situations. Adaptation can be inferred from behavior which is an attempt to maintain physiological and psychological equilibrium. Adaptation implies an ability for growth, learning and creativity; it "enables expansion of the organism while protecting its integrity."[1] The adaptive response is positive when growth occurs and equilibrium is maintained. Failure to achieve or maintain growth-permitting equilibrium can be considered negative adaptation. Many

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[1]Nathan Ackerman, The Psychodynamics of Family Life (New York: Basic Books Inc., 1958), p. 70.

writers[1] infer negative adaptive responses in the young child from the following types of behavior: increased crying, changes in patterns of eating, sleeping and toileting, restlessness, hyper-irritability, hyperactivity, withdrawal, immobilization and increased use of primitive gratifications (thumbsucking, rocking, masturbation). Concomitantly, there is exhibited little of the child's usual exploratory, constructive or autonomous behavior. Failure of positive adaptation can occur when stress is sufficiently intense or prolonged.[2,3]

In this study behaviors will be used to make inferences about adaptation. The behavior of a child is affected by his level of social, cognitive, language and motor skills. The older child and adult because of language skills may indicate his response to crises by verbal as well as non-verbal behavior. However, the young child's lack of verbal skills requires that his adaptation be assessed through his non-verbal behavioral responses.

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[1]John Bowlby, "Grief and Mourning in Infancy and Early Childhood," The Psychoanalytic Study of the Child, XV (1960), pp. 9-32.
Dane G. Prugh et al., "A Study of the Emotional Reactions of Children to Hospitalization and Illness," American Journal of Orthopsychiatry, XXIII (1953), pp. 70-106.
James Robertson, Young Children in Hospitals (New York: Basic Books Inc., 1958).
Anna Freud, "The Role of Bodily Illness in the Mental Life of Children," The Psychoanalytic Study of the Child, VII (1952), pp. 69-81.
Helen Gofman et al., "The Child's Emotional Response to Hospitalization," Journal of Diseases of Children, XCIII (1957), pp. 157-164.

[2]Ackerman, op. cit., p. 42.

[3]William Langford, "The Child in the Pediatric Hospital--Adaptation to Illness and Hospitalization," American Journal of Orthopsyciatry, XXXI (1961), pp. 667-682.

The writer, interested in the adaptation of the toddler to illness and hospitalization, decided that the quantitative instrument should relate the adaptive responses as reflected by the behavior of the young child to the unique needs of toddlerhood for physical and psychosocial development. The most useful theory of personality development using this approach is that formulated by Erikson.[1] He conceives of the psychosocial growth of the individual as occurring through successive levels that he calls stages. Each of the eight stages has a crisis, or a heightened focus on one problem, which must be resolved successfully for the individual to achieve his developmental potential. These developmental crises are described as a "series of alternative basic attitudes"[2] such as trust versus mistrust in the infant followed by autonomy versus shame and doubt in the toddler.

When discussing the alternative attitudes Erikson uses the term "sense". For example, he says that the toddler struggles to gain a sense of autonomy. When acquired this sense pervades "the surface and depth, consciousness and the unconscious."[3] He elaborates further to clarify the two alternative basic attitudes which can become built into the personality during the toddler stageof personality development.

> From a sense of self-control without loss of self-esteem comes a lasting sense of good will and pride which encourages autonomy; from a sense of loss of

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[1]Erik H. Erikson, Childhood and Society (New York: W. W. Norton and Co., Inc., 1950), pp. 247-274.

[2]Ibid., p. 251.

[3]Ibid.

> self-control and foreign overcontrol comes a lasting propensity for shame and doubt.[1]

The responses of the child to developmental crises may be considered positive or negative in their effect on the child's psychosocial growth. Within Erikson's framework growth-producing, autonomous behavior results from building autonomy on a foundation of trust. Positive adaptive responses contribute to the child's ability to successfully solve subsequent crises facing him. These responses demonstrate the child's ability to depend on adults for help when he needs it and his need to explore and develop his abilities independently as his body grows and matures and he has the energy to do so.

The alternative or growth-limiting tendency of the toddler stage of development is shame and doubt. Behaviors that indicate the toddler's inability to find positive growth-producing solutions for the crisis confronting him suggest this sense of shame and doubt. Negative adaptation is suggested by behaviors such as a decrease, loss or absence of trust and an inability to develop his skills and explore his world autonomously.

Erikson also points out that life is not only a sequence of "developmental crises but also of accidental crises. It is hardest to take when both types of crises coincide."[2] The coincidence of the accidental and the developmental crises will have an impact on the

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[1] Ibid., p. 254.

[2] Erik H. Erikson, "Youth and the Life Cycle," Children, VII, No. 2 (March-April, 1960), p. 44.

young child's sense of trust and autonomy which will become observable in his behavioral responses to the crises.

The toddler at home who suddenly jams his finger in a door and does not protest would not be responding in a manner expected at this age. However, a toddler who has an injection when surrounded by strange people in the midst of a threatening, unfamiliar and little understood environment might 'normally' not have the energy or the courage to protest. While it may be true that the negative responses of the young child to an accidental crisis, such as illness and hospitalization, may be 'normal' (in the sense that many children may respond with negative responses as defined in this paper[1]) they are not positive adaptive responses in a developmental sense, unless they are used only temporarily to conserve energy and/or to remobilize resources for further struggle with the problem. Hence the decision as to whether or not behavior is positive or negative will be based on whether it is positive or negative in the context of developmental crises.

The incorporation of concepts about adaptation within Erikson's theory of psychosocial development results in the conclusion that

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[1]Freud, "The Role of Bodily Illness . . . ," op. cit., pp.69-81.
Katherine Jackson, "The Problem of Emotional Trauma in the Hospital Treatment of Children," Journal of the American Medical Association, CXLIX (1952), pp. 1536-1538.
John Bowlby, "The Nature of the Child's Tie to His Mother," International Journal of Psychoanalysis, XXXIX (1958), pp. 350-373.
A. M. Kaplan, "Manifest Anxiety in Hospitalized Children," Journal of Clinical Psychology, XV (July, 1959), pp. 301-302.
James Robertson, Film: A Two-Year-Old Goes to Hospital (London: Tavistock Child Development Research Unit, 1953).

positive adaptation assists the child's quest for autonomy while negative adaptation, if permitted to persist, contributes to the child's sense of shame and doubt.

In literature previously cited and the writer's clinical observation, negative adaptation appears to be reflected by two contrasting forms of behavior. On the one hand, there are children who respond to the coinciding crises (developmental and accidental) with immobility and withdrawal, while others respond with hyperactive, overtly aggressive and pseudo-independent behavior. Neither type of behavior provides much satisfaction or conserves energy, nor are they growth-producing for the child. Both types threaten his relationship with himself and with those significant others needed by him to reach his full growth potential. One may raise the question whether or not one extreme of behavior fosters more rapid return of the toddler to his trusting, autonomous behavior. Since these appeared to be divergent kinds of mal-adaptation it was decided that the instrument designed to quantify behavior should include these two extremes but keep them separate to allow careful examination of them.

The middle range of the instrument, which will be a scale, will include the toddler's developmentally healthy autonomous, trustful responses. The extremes of the scale incorporate behaviors that depart from the positive adaptive behavior of the middle range. The following is a schematic diagram of the proposed scale.

A			B			C
1	2	3	4	5	6	7

A - lack of seeking autonomy, decreased or absent trust (1,2)

B - autonomy with trust (3,4,5)

C - pseudo-independence, hyper-activity, marked aggressiveness, decreased or absent trust. (6,7)

Purpose of the Study

The purpose of this study is to develop and test scales to measure behavior that will indicate positive or negative adaptive responses of the one and one-half to three year old child.

Objectives of the Study

1. To select situations which most children of this age will encounter at home and in the hospital (e.g., mealtime) during which behavior can be observed and scaled.

2. To isolate descriptions of the behavior of toddlers, from literature and from reports of clinical observations, that will be representative of the range of adaptive and mal-adaptive responses.

3. To develop a behavior scale for each situation indicating positive and negative behaviors in relation to responses of the toddler to developmental crises.

4. To utilize the scales in the analysis of observations of children's behavior, which were made by a non-participant observer, to test for reliability between coders.

5. To determine sensitivity and validity of the scales by comparing scaled behaviors with: a) the behavior of the same child when clinically predictable changes in behavior are anticipated, for example, prior to and following an operation; b) the behavior of a child as described in clinical observations and analysis of them, such as those found in process recordings which include nursing diagnoses made by pediatric nurse specialists.

CHAPTER II

METHODOLOGY

All behavior of the child cannot be efficiently observed. Hence, five behavioral situations were selected from the literature[1,2] and from clinical experiences during which behavior could be observed. Those behavior situations chosen were those which occur daily in the life of the child and were his behaviors in response to:

1. mealtime and snacks,
2. rest and sleep,
3. toileting,
4. separation from and return of meaningful persons, and
5. adults that indicate the child's emotional dependence or independence.

Behavior Items

After the above situations were selected, a search for items of observed behaviors which related to them was made. To accomplish this purpose the writer reviewed: the literature; process recordings written by nurses after participant-observational experiences with children between the ages of eighteen and thirty-six months; and, "on-the-spot" verbatim recordings of the behavior of children in the

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[1] Prugh et al., p. 87.

[2] Fagin, p. 24.

same age range. One-hundred and fifty-eight items of observed behavior were compiled. The following items illustrate those compiled.

> Initial refusal to eat followed by active interest in feeding.
>
> Shows resistance to going to bed by crying, screaming and trying to get up.
>
> Unable to sit still long enough to use potty. Usually wets the floor in his need to be moving.
>
> Quickly reaches out to significant adult for comfort.
>
> Assumes a mute and watchful vigil when significant person leaves him.

The selected items were placed separately on 3 1/2 x 1 1/2 inch white cards. The reverse side of the cards were randomly numbered for purposes of identification. All items regardless of situation were shuffled thirty times in a hand over hand fashion and piled together.

Scaling the Items

The judges[1] were given a set of written directions by which to sort the item cards (Appendix I), the item cards and a work sheet. The work sheet had each of the five situations listed as above. The basic seven point scale was marked with three areas which were labeled A, B and C. Each area had a brief description as follows:

> A - 1,2 - dependence; passiveness or withdrawal; decreased trust.
>
> B - 3,4,5 - independence in non-threatening situations; seeks or accepts support from familiar adults; appropriate autonomy.

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[1] Florence G. Blake, Professor of Pediatric Nursing, Director Graduate Program in Pediatric Nursing, University of Wisconsin; and Mrs. Charles Elson, Specialist, Child Development, Preschool Laboratory, Department of Home Economics, University of Wisconsin.

C - 6,7 - Pseudo-independence; refusal of help from adults; marked aggressiveness; hyperactivity.

Many of the behavioral items which were copied directly from the sources already noted, contained references to behaviors observed more commonly in hospitals, for example, injections. It was pointed out by one of the judges that since these clearly implied an accidental crisis rather than a developmental crisis there was a problem in sorting the items. That is, a behavior which might not be aberrant in an accidental crisis resulting from increased stress would be aberrant in the home setting where the child was coping only with the problems commonly associated with developmental crises such as falling and hurting his knee. The items were changed in terminology so that they would relate to home situations, but the behavioral responses of the child remained the same. This permitted the judges to make decisions about the behavior in the context of developmental crises.

Working independently of one another, the judges sorted the items as directed by the written directions. Only those items on which there was complete agreement[1] on situation and on ordinal position within the situation were retained. Approximately 85 percent of the original items were retained (Appendix II).

The intent of the scale was to define both positive and the two types of negative adaptation in behavioral terms. The technique used by the judges was the method for scaling equal appearing intervals[2] as

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[1]See Appendix II for level of agreement by judges.

[2]William J. Goode and Paul K. Hatt, Methods in Social Research (New York: McGraw-Hill Book Co., Inc., 1952), pp. 262-265.

determined by judges who were well versed in a knowledge of toddlers' behavior. The behavioral items were considered to be rationally related to specific behavioral situations and to have a specific ordinal relationship within the situation. The judges' decisions offered logical validation of ordinal relationships of behaviors which can be interpreted in terms of adaptive responses of the young child to developmental crises.

There were as many as sixteen items that both judges agreed on under one point on a scale. It was necessary to abstract the common factors of the behaviors indicated on the items to make a useful description of a point on a scale (see Appendix III for example of original items under points on a scale). Further, there were some instances when the behavioral items available to the judges varied in content about related behavior. For example only meals were included under some points on the scale which relate to eating. In others, only behaviors relating to snacks appeared. When this was noted, both were included in each item which related to this scale. The writer made the items more explicit so that the judges could select the particular point on the scale on which they believed it fell. This editing did not affect the limits of the scales. The end result of the summarizing and editing procedures was descriptions of characteristics of behavior under each of the points on the scales. The scales were returned to the judges for their final approval. There was one point on a scale where there was no item. One of the judges wrote a description for this scale which was approved by the second judge. The completed scales appear in Appendix IV.

Training For Use of the Scales and Checking for Reliability

The data to be scaled were written recordings of direct observations of hospitalized children. The observations were recorded by the writer on the general pediatric unit of a large general hospital and on the toddler unit of a children's hospital which is part of a large university medical complex. Both hospitals were in the same midwestern city. The ages of the children on admission to the hospital ranged from eighteen to thirty-four months. All children were admitted to the hospital for elective operations. Two children were hospitalized without their mothers and distance precluded visiting. The remaining five children had one of their parents present a minimum of ten hours per day and one mother "roomed-in" with her child. The number of days the children had been in hospital at the time of the first observation ranged from one to seven days. Each observation period was fifteen minutes in length. A total of forty-four fifteen minute observations were made on the seven children.

Directions for use of the scales were written. The writer and the person being trained (a graduate student in pediatric nursing) separately used the directions to select the units of response and situation from written observations on one child. There was complete agreement on seven units selected and also on situation. However, the 'trainee' said that she was making judgments which could have been avoided by clarification of the directions. The directions were made more explicit in regard to delineation of units of response.

Data from another observation period were used to test the directions with a second graduate student and the writer. The selection of

unit of response, situation and scoring were done separately. There was complete agreement in each of the three choices to be made on five units. Therefore, the writer concluded that the directions were adequate.

Training For Use of the Scales

The writer had noted that the most difficult step in the use of the scales was establishing the unit of response. Three graduate students of pediatric nursing were selected as coders. It was decided to train coders in two separate stages: first, the coding of unit of response and of situation; and second, the scoring of the units.

The writer and the coders met for approximately one and one-half hours. First, the directions for the use of the scales were read by each person. Then each coder read each of four fifteen minute observations to identify unit of response and situation. Independently, they noted their decisions on each observation. Then their decisions were compared. Although there was no disagreement on situation when the unit of response was agreed upon, there was disagreement on the sentence which introduced the description of the unit of response. A decision was made which was mutually agreed upon: the unit of response was to begin when the child was first observed to make a behavioral response and not when the stimulus for the response occurred. The final draft of the directions appears in Appendix V.

By definition a unit of response began when the child's responses were most immediately involved with one of the five situations and ended when the child responded to a need or stimulus presented by another person which related to another one of the five situations.

For example, as a child began to be prepared for sleep, the unit of response related to that situation. Then the mother offered a snack to the child which he accepted. This ended the unit of response on the sleep and rest scale and initiated the unit of response which related to eating. As the child finished his snack he asked to go to the toilet, which ended the unit of response on eating and initiated one on toileting. After the toileting the mother helped the child prepare for sleep which ended the unit on toileting and began a unit on sleep-related responses. Hence, one period of observation may have contained one or many units of response. A sample observation appears in Appendix VI.

Reliability Procedure

Reliability was determined on unit of response and situation separately from scoring on the scale. Twenty observations were used for the reliability check on unit of response, and twenty-four observations were scored to determine reliability on scaling. All reliability statement are based on the coder's agreement with the writer.

Agreement was said to occur when there was complete agreement on the beginning and ending of unit of response, complete agreement on situation and complete agreement on scoring. If the coder scored the unit of response on number four of the scale and the writer on unit three, they were said to disagree on scoring.

Sensitivity and Validity of the Scale

Then this question arose: "Does the scale reflect changes in behavior which interpret a child's varying adaptive responses?" To

seek answers to this question, observations of behavior were collected in situations where the writer's clinical experience made it possible for her to predict a change in adaptive responses.

The accidental crisis provoked by an operation makes demands on the child's body which leave little energy for positive psychological adaptation. Therefore his behavior could be expected to reflect marked change which would be scored as mal-adaptive under normal conditions of health. Pre-operatively the child's behavior should be predominantly positively adaptative.

The scales were used by the writer and three other graduate students of pediatric nursing to score the recorded observations of four children who underwent operations. The observations were made in two hospitals by the writer during three fifteen minute periods prior to the child's operation and three fifteen minute periods within twenty-four hours after his operation, exclusive of the period in the recovery room. In both hospitals the children remained in the recovery room until fully conscious. No observation was made post-operatively until at least four hours after the child's return from the recovery room. Appendix VII contains a description of the age, diagnosis, operation, date of admission, date of operation and the presence or absence of the children's mother.

The situations observed pre-operatively included any of the five for which scales had been developed. However, post-operative observations were repeated until situations occurred which 'matched' the pre-operative ones. For example, a pre-operative eating situation was matched with a post-operative one. There were behaviors that occurred

incidentally during the observations and therefore could not be matched with one from the other period. The matching of situations prevented differences from pre- to post-operative scores from varying due to differences in situation.

The observations were scaled by the writer and three coders. The results of the scaled behaviors identified from observation data collected during the pre-operative period were compared with those obtained during the post-operative period. This was done to determine if the expected change in the behaviors occurred and whether or not the changes reflected the shift in adaptation which was expected. Determination of the mean of the scores from the three coders and the writer was the statistic used to make the comparisons.

Further validation of the scales was planned by finding answers to this question: "Do the scales reflect the positive or negative adaptive status as validated against clinical observations and judgments?" Comparisons between process recordings, which included the nursing diagnosis, and the scaled behavior observed during the same time period had been planned but were not made because of time limitations.

CHAPTER III

FINDINGS OF THE STUDY

Reliability

The reliability on selection of unit of response based on a comparison of the units as determined by each of three coders to those of the writer ranged from 76.6 to 91.4 percent (Table 3). The average agreement was 85 percent on the basis of sixty-nine units.

TABLE 3.-- The percentage of agreement on units of response in selected observations of children

Coders	A	B	C	Average of Agreement
Unit of Response	91.4%	87%	76.7%	85%

Percentages based on 69 units of response as identified by the writer.

Coder C did not break the observations down into as many parts as did the writer which resulted in the low agreement between coder C and the writer. Of forty-four fifteen minute observation periods the greatest disagreement for two coders occurred in one of them. While one coder had complete agreement, the second disagreed on four of eight units and the third on seven of eight units. This observation included the total bed-time ritual of a child which was related only to the sleep and rest situation by one coder. The other coders broke

down the ritual into isolated parts and related them to toileting and snacks as well as to sleep or rest situations.

The agreement on situation, when there was concurrence on unit of response, was high (Table 4). Of all situations selected there was only one disagreement when a coder selected emotional response to adults and all others selected the situation as related to rest and sleep.

TABLE 4.-- The percentage of agreement on situation when unit disagreements are deleted

Coders	A	B	C	Average of Agreement
Situation	100%	100%	98%	99.3%

Percentages based on 69 units of response.

The percentage of agreement on scoring of units of response agreed upon ranged from 68.5 to 85.7 percent (Table 5). The range of

TABLE 5.-- The percentage of agreement on score and on scale area of the scores

Coders	A	B	C	Average of Agreement
Score*	68.6%	77.1%	85.7%	77.1%
Scale area	97.1%	97.1%	100%	98.1%

*There was no greater range than one point on scoring.
Percentages based on thirty-five units of response.

scale position was no greater than one point on any of the units of response scored. When the scores were collapsed to scale area the findings were somewhat different (Table 5). Scale area A included

scores 1 and 2, scale area B included scores 3 to 5 and scale area C included scores 6 and 7. Of the thirty-five units of response scored there were only two coders' scores which did not agree with those of the writer on area and those were both a disagreement of one point (2 and 3) on the scale.

The behavioral situations of eating and emotional dependence accounted for one-half of the units of response in the behavior sampled. The situations of sleep and rest accounted for one-quarter of the units of response selected. The remaining one-quarter of the units selected involved situations related to separation or toileting. The percentages of disagreement were similar for each of the behavioral situations. No one behavioral situation presented more difficulties in scoring than another.

The percentage of agreement reached acceptable levels for all three decisions required to convert recorded behaviors to scale position. The agreement on selection of situation and the area of the scale approaches 100 percent. Identification of the unit of response presented the least reliable data but the percentage of agreement exceeded an acceptable level.

Sensitivity of the Scale

The change of each child in a comparison of his pre-operative and his post-operative behavior by behavioral situation is shown in Table 6. Children M. A., M. M. and S. W. showed a distinct change from the middle area of the scale to area A, the lower range of the scales. These three children had a mean score difference of no less

TABLE 6.-- The mean scores* for coders of each pre- and post-operative observation periods for four children

Child M. A.							
Score	1	2	3	4	5	6	7
Scales							
Eating		x		o			
Sleeping	x						o
Toileting							
Separation							
Dependence	x			o	o		

Child M. M.							
Score	1	2	3	4	5	6	7
Scales							
Eating	x			o			
Sleeping	x		x				
Toileting		x	x	o			
Separation							
Dependence	x		o	o	o		

Child D. P.							
Score	1	2	3	4	5	6	7
Scales							
Eating	x	x			o		
Sleeping	x						
Toileting							
Separation	o						
Dependence	x	o	o			x	

Child S. W.							
Score	1	2	3	4	5	6	7
Scales							
Eating	x	x	o	o			
Sleeping		x	o				
Toileting	x						
Separation			o				
Dependence		x	x o	o			

Key: o - pre-operative; x - post-operative

*The range of scale position of the four coders was no greater than one point.

TABLE 7.-- The mean and difference of the means of pre- and post-operative behavioral scores for four children

Mean scores	Pre-operative	Post-operative	Difference
Children			
M. A.	5.0	0.92	4.08
M. M.	3.25	1.63	1.62
D. P.	2.35	1.9	0.45
S. W.	3.29	1.83	1.46

than 1.46 from the pre- to the post-operative period. Child D. P. showed the least change in mean behavioral score from prior to her operation to the period following it (Table 7). This child was also the only one whose pre-operative behavioral score fell in the area of the scale which was interpreted to be mal-adaptation.

CHAPTER IV

DISCUSSION OF THE FINDINGS

The level of reliability on unit of response and the comments by the coders suggest that determining the unit of response is the most difficult step in the use of the scale. Reliability was determined on a total of sixty-nine units of response. This total was a combination of units of response coded at two different periods of time. The first group of units (thirty-four) had an average agreement of 82.3 percent while the second average of agreement was 87 percent. More important was the fact that the range of agreement was smaller in the second group: 67.6 to 94 percent in the first versus 85.7 to 88.5 percent in the second. This suggests that the written directions are adequate for acceptable reliability on selection of unit of response. It is recommended that samples of the behavior to be divided into units of response be used to familiarize coders with the system as well as the written directions.

The information on reliability in the study is on written data. It is possible that the scales might now be used in the clinical setting. This would require more training of the coders because they would be unable to refer to written directions. Films, which can be reviewed, may be useful in the training of coders. This data can be repeated to clarify areas of agreement and disagreement. Two of the coders volunteered the suggestion that it would have been less

difficult for them to select the unit of response had they directly observed the child's behavior in the clinical setting. Behavior is immediately perceived in the clinical setting and the affect of the child is much easier to discern from direct observation than from a written description of his behavior. They agreed that more training would be needed to code ongoing behavior and some system of recording shorthand would have to be devised. The unit of response could be redefined as a set period of time when coding directly observed behavior. This definition of unit of response would result in more than one situation occurring in a unit of response.

The selecting of situation appeared to present little difficulty to the coders. There was only one disagreement on the selection of situation and the reason for this is not clear. The coder selected the general situation of emotional dependence while others selected sleep. This appeared to be more an error in writing down the selection than in decision making. This conclusion was drawn because the selection was markedly inconsistent with the other selections made by that coder. From the limited sample used in carrying out this study there was no indication that coder's decision in selecting the situation affected the reliability if the written directions were followed carefully.

The level of agreement on selection of score was 77 percent and the variation in agreement ranged approximately from 67 to 86 percent The level of agreement was based on a comparison of each of three coder's scores with those of the writer. Agreement was said to occur when the coders and the writer agreed on the same score for the unit

of response being scaled. The level of agreement reflects the fact that coders had no training in the use of the scales or scale positions. The written directions and the scales themselves were the basis for their decisions. It is reasonable to assume that discussion of definitions and training would increase the reliability of scoring.

There is a marked contrast between reliability on exact score position and reliability based on agreement on the scale area. Of the total of four persons each scoring thirty-five units of response there were only two disagreements on scale area. The directions for use of the scales (Appendix IV) contain no references to scale areas. This suggests that the scales would produce reliable data when classification was by scale area.

The testing of the scales for sensitivity was based on the premise that the behavior of a child would change from a period prior to an operation to a period after the operation. While making the observations, the change was apparent to the writer; there was decreased interaction with the environment and decreased autonomous activity. The mothers of three of the children supported the writer's impressions by such comments as: "M. really needs to be babied today," and "I can't believe this is the same rough and tumble tiger we contended with yesterday."

Three of the children showed a clear cut move to the lower end of the scales generally and in each specific situation where there were matching situations for each period (Table 6). One child (D.P.) showed the same tendency but her mean score of change (Table 7) was

low. The mean score of behavior before operation was also lower than those of the other children observed. The child (D.P.) had been in hospital without her mother for one week prior to observation. The tendency to score at the lower end of the scale prior to operation may be at least partially accounted for by this deprivation. Her behavior at mealtimes was in marked contrast to other behavior observed pre-operatively. She was enthusiastic, hungry and showed unusual (for her) independence in her eating. After the operation her behavior at mealtime fell to the same low point on the scale as did S. W.'s who also had palatoplasty. The other contrast in her behavior was that which related to emotional dependence. Prior to her operation, she showed a great need for the support of a nursery school teacher who seemed to be a significant person to the child. The day after her operation she acted as if she were trying to make herself believe that she was independent and unafraid; she was hyperactive in spite of the physical trauma she had undergone. It might be hypothesized from her behavior that her level of independence, already low before her operation, was depressed still further by the operation and defended against with denial and flight into activity.

The writer was impressed by the change in the bedtime behavior of M. A. in relation to his other responses the day before operation. The child had been admitted to the hospital three times during the preceding year. His mother said that she always left for home after her child had fallen asleep on other admissions because she could not stand hearing him cry when she left. She went on to say that "This is the hardest time he has ever had going to bed." The scale was sensitive to this marked contrast in M.'s behavior.

The development of the scale was based on the concept that autonomy and shame and doubt are alternative solutions to the toddler's natural developmental crisis. It was suggested that the behavioral responses of the child would reflect the alternatives of this natural developmental crisis. The three children who had their mother with them pre-operatively dêmonstrated a range of behavior which reflected positive adaptation. This suggests that with the support of the mother, the toddler can make positive adaptive responses even when faced with the accidental crisis precipitated by admission to a hospital. The operation caused a shift in behavior to the lower end of the scale indicating negative adaptation. This behavior reflected the child's need for increased support and care to help him conserve energy for healing and to regain his equilibrium. Had his needs not been responded to appropriately it may be hypothesized that the child's sense of shame and doubt would have been increased and he would have been slow to regain his growth-producing behavior. In contrast the child who did not have her mother present showed negative adaptation prior to her operation. The operation had a further negative effect on her adaptation. The scale therefore appears to indicate behavioral changes that reflect the toddler's adaptation and that could be used as a basis of nursing intervention.

The results of scoring of the data demonstrated that the scales were sensitive to behavioral changes that occurred at the time the young child confronted the physiological and psychological stress of an operation. The scale results reflected no overlap between pre- and post-operative mean scores. The clinical data discussed above lend support to the hypothesis that the scale reflected reality.

The data from the limited sample of behaviors did not support conclusions about the relative sensitivity of one situation scale over another. Although the fewest responses were made in the situations of toileting and separation this does not rule out their potential use. The sample of observations was small which precludes conclusions related to these situations. Also the writer selected specific situations to observe in order to match as many pre- and post-operative responses to those situations as possible. Therefore the sample of behaviors could have been biased and not representative of all toddlers in hospital. Only further use of the scale can provide data to determine which of the situations selected for this study will be useful in reflecting significant behavior.

Limitations of the Study

Two judges sorted the behavioral items and contributed to the development of the scale. The validity of the scales would have been greater had the additional knowledge of more judges been utilized.

The data for scoring of behaviors were obtained by the writer. The reliability of this data was not tested against data which were collected independently by a second observer. Therefore, no comparison of differences in data collection could be made by means of scaling and comparing the observations made by two observers.

The sample of observations was limited to seven children scheduled for an operation. A larger sample would have provided a more stable basis for the testing scales for both reliability and sensitivity. It may also have provided evidence for retaining or discarding any of the five situations selected or have suggested other situations which should be scaled.

Reliability was developed on the basis of four coders who were graduate students of pediatric nursing. As their orientation to behavior may have been similar, the present reliability can only be presumed for such a population. The relatively high agreement between the coders may have been due to their similar frames of reference rather than to the directions and training which was provided for coding.

Training of the coders for unit of response and situation was limited. There was no training for scoring. It is anticipated that training would have increased the reliability in the use of the scales. This was due to limitation of time which was available to the writer.

Summary and Conclusions

A scale was developed to score the behavior of children between the ages of one and one-half to three years of age. The findings suggest that even with the limited training given the coders for this study, the findings disclosed an acceptable level of reliability. The most critical problem was the development of specific criteria for delineating the unit of behavioral response which was to be scored. Of the five situations for which scales were developed there was insufficient evidence to retain or reject any one of them. Therefore, at this point in the development of the scales the writer recommends that all situations be retained. There was ample evidence to support the hypothesis that the scales were sensitive to the behavioral changes resulting from the physical trauma of an operation. The clinical observations supported the hypothesis that the scaled behaviors do indeed reflect the level of the child's adaptation.

The next step in testing the use of the scales is to attempt to code ongoing behavior in the clinical setting. Undoubtedly, definitions will need revision and specific training activities identified.

The scales appear to be a potentially useful instrument for transposing behavior into an ordinal position on a scale within the framework of positive and negative adaptation in light of the psychosocial development of autonomy in the toddler.

APPENDIX

APPENDIX I

DIRECTIONS GIVEN TO THE JUDGES FOR SORTING OF BEHAVIORAL ITEMS

Assume that the seven point scale on the work sheet relates to the expected behavior of a healthy toddler during situations that occur as part of his struggle to resolve the natural or developmental crisis of the period (as in Erikson). The middle area (3-5) of the scale will contain those growth producing, adaptive behaviors you would expect of a child from one and one-half to three years of age. The lower area (1-2) includes those behaviors which seem to be maladaptive and tend toward the extreme of withdrawal and immobility. The upper area (6-7) includes those behaviors which seem maladaptive and tend toward pseudo-independence, hyper-activity and/or increasing levels of aggressive behavior.

The behavior items which you have been asked to sort on the scale have been written in terms of the child at home or in usual community settings. Unless another person is indicated (as a familiar or unfamiliar person or adult) the behaviors are those which occur while the child is in the care of his mother.

The question as to whether or not the child has progressed to a certain level or has regressed to that level will not be answered by most items; it is hoped that it would fall at the same point on the scale regardless of this.

The cards on which behavior items are written have been well shuffled. The number on the opposite side of the card is random and for identification only

Sorting

1. Place cards with behavior items into one of five situations. Discard (and return) those which cannot be placed in any of the situations. See lower left corner of work sheet for the situations.

2. After separating items into situations take one pile at a time and separate them into one of the three general scale areas, A, B, C. Items which cannot be placed in a scale area are to be returned as a group of items which cannot be scaled.

3. After taking items from each area, place them in an ordinal relationship to each other under the numbers. There are no decimal points on the scale and therefore you will be forced to sort them under one of the seven designated numbers.

4. Clip the items under each number together and label with the cards provided, e.g., Separation, A #2. All discard items can be returned together.

The situation (or category) is being defined in the paper as the stimulus of the behavior, e.g., if the stimulus is food then eating is the category even if the absence of mother is noted in the item. The only problem which may arise is that related to play and those items which are related to interaction with other adults or mother and emotional independence.

APPENDIX II

TABLE 1.-- A list of the number of items placed by the judges in each situation, the number of disagreements by score and situation, and the total percentage of agreement for each situation and scoring.

Response Situation	#Items	#Disagreement on Score	#Disagreement on Situation	Percentage of Agreement
Eating	19	1	-	94.7
Toileting	14	2	-	85.2
Rest and sleep	18	2	-	88.9
Separation and return	33	5	4*	73.9
Adults or emotional dependence	45	7	4*	75.6
Total	129	17	8*	85.66

*The same four items were included as items in both situations and counted as disagreements in both situations.

APPENDIX III

A SAMPLE OF ITEMS RETURNED BY THE JUDGES AFTER SORTING THE BEHAVIORAL ITEMS

Agreement on Items

Eating Responses

1. -Poor appetite, never seems hungry. Often refuses to eat. Sometimes drinks from cup, needs to be fed at all meals.
   -Insists on familiar caretaker feeding him and asks for a bottle at bedtime although when mother present he drinks from a cup only and feeds self.

2. -Eats small amounts at meals, never asks for second helpings or food between meals except for candy and pop.

3. -Drinks from cup at mealtimes. Needs some help to eat, uses fingers frequently. Accepts some help with feeding.

4. -Accepts mealtime readily, usually hungry and eats most of what is served. Has snacks at snack time and seems to enjoy them.
   -Shows independence and delight in eating.
   -Feeds himself with utensils. Enjoys meals.
   -Eats most foods, has a few dislikes but they are not a problem in day to day diet. Enjoys food and mealtime.
   -Able to let familiar person help him with his meals when help is required.

5. -Eats a great deal and is very hungry. Often asks for second helpings and for snacks between meals. Eats more than most children.
   -Initial refusal to eat followed by active interest in feeding.
   -Rejects some foods but will often eat some of them. Resists new foods. Often fusses at mealtimes.
   -While cared for by unfamiliar person he eats well using fingers and utensils; he refuses help with food he cannot cup up himself.

6. -Very finicky about foods, many food aversions, resists all new foods. Refuses milk, meat, vegetables often.
   -Is greedy and aggressive during mealtimes when cared for by unfamiliar person.

7. -Poured milk into food and messed a great deal at mealtimes.
   -Unable to tolerate sitting still for meal more than several minutes without messing or walking around.

Disagreement items

1. -Drinks fluids from a cup by himself. Feeds himself almost entirely using a spoon and his fingers. Enjoys company at meals.

APPENDIX IV

THE COMPLETED SCALES

Response of the Child to Toileting

1. -No bowel or bladder control. Is not bothered by wet diapers and is unsuccessful in using the potty.

2. -The child's bowel training is started. He may be successful in using the potty when a familiar person encourages him. Does not signal his need to use potty. He wets his diapers night and day and has occasional bowel movements in diapers.

3. -The child urinates in potty when placed on it at intervals. Uses the potty for bowel movements. Wets diapers daily and is wet at night. Does not ask to go to the potty with any consistency and needs help with clothing.

4. -Dry during the day with occasional accidents when involved in play. Wets at night occasionally but may awaken to void. May need help with clothing and accepts it. May need to be reminded to use the potty.

5. -The child may tell a familiar person that he is going to the toilet and does so by himself unless he needs help with his clothing. Retains bowel and bladder control almost all the time.

6. -The child does not tell anyone when he needs to go to the toilet. He shows annoyance when he is helped with his clothing by wiggling and perhaps reaching for an object nearby. He sits on the potty when he is placed before it but immediately gets off it to keep moving. Hence he wets the floor or his clothing.

7. -The child never tells anyone he has to go to the toilet. He resists physically and/or has a temper tantrum when he is placed on the potty even when he has been dry during the preceeding two hours. He struggles to prevent help in being redressed. He wets or soils immediately or soon after being redressed.

Response of the Child to Eating

1. -The child does not appear hungry and eats poorly. He shows little interest in feeding himself meals or snacks. He may prefer bottle feeding to cup feeding and to feed self to a very limited degree.

2. -The child eats small amounts of meals and snacks and does not ask for second helpings. Does not ask for food between meals except for pop or sweets. Needs some help with feeding (e.g., drinking fluids from a cup) as well as in preparation of food for eating.

3. -The child eats well. Drinks from a cup at meals. Feeds self with fingers and uses utensils sometimes. Accepts help with preparation of food for eating, but doesn't ask for it.

4. -The child accepts meals and snacks readily and shows enjoyment in eating. He may have some food dislikes, but they do not affect his daily diet. Shows independence and delight in eating and accepts help in preparation of his food readily.

5. -The child eats a great deal and appears very hungry as shown by requests for second helpings and snacks. May initially resist eating at meals or snacks, but this is followed by an active interest in eating. Will accept help with the preparation of food for eating from familiar person, may reject assistance from unfamiliar persons.

6. -The child tends to be greedy and aggressive during snacks and meals. He actively resists limits being set on his behavior or help offered in preparing his food. He may be finicky about foods and actively resist new foods in his diet as well as refusing things in his daily diet (e.g., milk, meat, bread).

7. -The child appears unable to sit still for meals or snacks without messing in food, getting up to play or wander, or interfering with others who are eating. He may respond to any adult who attempts to place reasonable limits on his activities by hyper-activity, temper tantrums or similar behavior.

Response of the Child to Rest and Sleep

1. -The child passively accepts being placed in bed. Uses self-comforting devices such as rocking, sucking or rubbing when placed in bed for rest or sleep. Does not seek people for comfort but may use a familiar object, such as a blanket or shoe, for comfort. May assume a watchful vigil and sleep only when very tired.

2. -The child dawdles when rest or sleep is mentioned and does not participate in getting ready for bed. He uses self-comforting devices or familiar objects when placed in bed. He turns away from adults who attempt to comfort him.

3. -The child may need comforting when placed in bed for rest or sleep, but settles easily and sleeps well. May awaken and call for attention but settles readily if soothed.

4. -Goes to bed willingly and settles easily for sleep. May awaken for attention or toileting and returns to sleep readily.

5. -The child protests going to bed by crying and/or calling to get up but usually settles 15-20 minutes. Sleeps well although he may awaken for toileting or attention. He may protest briefly at this time, but does go to sleep again.

6. -The child shows a great deal of resistance to going to bed for rest or sleep by crying, screaming and/or trying to get out of bed. The child may awaken during the night and when he does so he has difficulty returning to sleep.

7. -Resists going to bed even when tired and protests loudly by trying to get out of bed and/or tantrums. External controls (e.g., gentle but firm holding of body or limbs) may be needed to help him rest or he may sleep when exhausted without this help.

Response of the Child to Separation From and Return of a Familiar Person

1. -The child may cry mournfully and assumes a mute and watchful vigil when familiar person leaves him. He seeks familiar objects for comfort and/or uses self-comforting behaviors in preference to people. His exploratory activity is minimal and he passively accepts changes in his environment without seeking support. When a familiar person returns he does not reach out to her for comfort but accepts her comforting passively or turns away from her.

2. -The child becomes more tense when separated from a familiar person and then turns to objects or self-comforting behaviors for awhile in preference to people. He does not make eye contact with adults in his environment. The child may also attach himself to any person in the environment without showing overt distress when separated from the familiar person. He is unable to play without the support of a familiar person. He responds to the return of a familiar person by ignoring her advances briefly followed by actively seeking comfort.

3. -The child protests separation from a familiar person but returns to play with toys. May involve self in separation play (e.g., hiding and finding objects) when familiar person prepared to leave him or does so. The child will gradually accept the support of other persons following separation. The child may reject the familiar person on her return (especially mother) if she has been absent for more than a day.

4. -The child is able to protest separation from a familiar person, grieve and initially rejects all unfamiliar persons who attempt to comfort him. May attempt to master separation in play. Is able to greet and accept the return of familiar person following her absence and protests any separation, however brief, from her.

5. -The child protests loudly to separation from familiar person and tries to prevent her from leaving. Can let her go after some explanation and will return to his play or activity. May attempt to master separation through play. Shows delight at the return of the familiar person after her absence.

5. -The child protests separation from familiar person or becomes tense and hyper-active. Spends much time exploring the environment during separation and is very active. Often rejects support proffered by unfamiliar adults and acts as if he is self-sufficient even when he is in need of care and comfort, and may continue this briefly on the return of familiar person.

7. -The child protests separation from familiar person and becomes hyper-active and may be aggressive. He acts as if he wanted to do everything by himself and protests any interference by unfamiliar adults even when energy is markedly decreased and he needs comfort. Usually continues hyper-activity and pseudo-independence for some time after the return of the familiar person.

Responses of the Child Indicating Emotional Dependence on Adults or Independence

1. -The child is quiet and withdrawn. He is unable to use help or physical comfort from unfamiliar people in order to play or relax. Instead he uses familiar inanimate objects or self-comforting behavior rather than people for comfort. Or, when with a familiar person the child clings constantly to her and wants her help in activities that he can do for himself.

2. -The child is quiet and tense, shows little interest in play and may use self-comforting behavior or inanimate objects rather than unfamiliar persons for support. Or, he follows a familiar person around much of the time and seeks her attention when she is not obviously busy.

3. -The child avoids eye contact and interaction with unfamiliar persons. Will seek comfort from familiar person. Accepts help with problems (such as dressing) but may not actively seek it. Is able to play and will explore his environment when familiar person is close by.

4. -The child overtly expresses anger, fear or discomfort to familiar person. He seeks familiar person for comfort when unhappy or tired. He plays for long periods near other children or with adults. He attempts to please familiar adults. He is able to wait for short periods for pleasure or satisfaction.

5. -The child overtly expresses anger, fear or discomfort to any nearby person. He is relatively self-sufficient but seeks help when he needs it. He plays for long periods by himself or near other children. The child will confidently explore the environment with a familiar person and accepts or asks for their help when he needs it.

6. -The child shows marked provocative behavior toward familiar and unfamiliar persons. He is better able to play and carry on daily activities when clearly stated limits are set for him. He rejects the support of adults even when he needs it (at least initially) with an air of bravado. He is hyper-active although his attention span is not long.

7. -The child shows almost constant activity until exhausted and resists support proffered by adults. Plays aggressively and may strike out at other children or adults. He is unable to use adult support to reduce his need for activity or to help himself relax. Does not tolerate setting of limits. He reacts to reasonable limits with increased activity or temper tantrums.

APPENDIX V

DIRECTIONS FOR USE OF THE SCALES

The five situation scales were developed to measure the behavioral responses of a child from one and one-half to three years of age. At this time the sample of responses is taken from observations of a child for fifteen minute periods in varying situations. The five scales include:

1) Responses of the child to mealtime or snacktime. When his behavior is primarily even if briefly focused on these activities this scale is to be used.

2) Responses of the child to sleep or rest. Those responses that occur as a direct result of the child going to bed for sleep or rest are included here.

3) Responses of the child to toileting. Those behaviors which reflect the status of the child's toilet training (or lack of it) or his responses to actual toileting should be included here.

4) Responses of the child to separation from or return of a familiar[1] person. Those responses that occur as a direct result of the activities of the familiar person fall into this situation and hence may include a period following separation or return when this is the stimulus for the child's responses. Separation means that the familiar person goes out of sight of the child.

5) Responses of the child to an unfamiliar or a familiar adult that indicate the child's emotional dependence or independence. This category included all those behaviors that a child uses when there are adults in his environment because the adults are available if the child is able to or wishes to use them. This scale is not to be used when the primary, even brief, response of the child falls into one of the above four situation scales.

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[1]The term "familiar person" as it is used in the scales refers to the parent of the child or some other person who has a significant relationship with him. It does not include a person whom the child has only seen occasionally but one to whom the child turns to for support and in whom his behavior demonstrates his trust.

The unit being scaled is called the unit of response. A unit of response is said to begin when the child's behavioral responses primarily involve one of the situations above and end when the response is no longer primarily a result of that situation. For example: as a child expresses delight at seeing his dinner arrive the eating unit begins. He eats well for a few minutes and then begins to mess in his food. His mother tells him that if he is finished he may leave but that he is not to mess in his food. He continues to eat with brief periods of messing. Then he gets up and goes to play with a truck. The unit of response related to eating ended when he left the table. Although an interaction with his mother occurred it did not end the primary focus of his behavior.

The focus of the scales is on adaptive responses or the behavior of the child. Therefore the unit of response starts when the child makes the first behavior related to the situation. For example, C's mother suggests that she has to go home. C turns to his mother, clutches her skirt and begins to cry "No, no home!" The unit begins with the child's response, not the mother's statement. This prevents the judge from inferring responses from stimuli which is not the purpose of the scales. They are used to scale the behavior of the child as it is observed or recorded.

The scale requires that the unit of behavioral response be determined and then that two decisions are made about the unit. The first decision is the situation category and the second is the position on the scale. If the response cannot be placed into one of the five behavior situations it cannot be scaled. Once the situation has been selected by the judge, the scale for that situation is used.

The judge will then select the numerical area on the scale that most closely describes the responses of the child in the unit of behavior. A behavior is either 1 or 2, it cannot be 1.5. If there are two areas on the scale containing responses like those described in the unit of response then the judge must select the one which better or more closely reflects the child's behavior.

APPENDIX VI

SAMPLE OF OBSERVATION USED IN SCALING OF BEHAVIORS

7:25 pm--M is in his room with his mother who has gone to the sink. "O.K. M, it's time to get some of that dirt off before you go to bed." Mother lifts M onto the rocking chair near the sink and begins to wash his hands. He laughs gaily and in a sing-song voice he chatters "Uppie, uppie . . . owie . . . no face . . . " and objects further by turning his face away and trying to squirm out from under the cloth. As his mother washes his hands he sings "Mummie . . . mummie . . . " and continues to wiggle. While his mother turns to the sink M slides quickly off the chair and heads out of the door. His mother intercepts him outside of the door and carries him back giving her grinning boy a hug on the way. She plunks M on the chair and finishes the washing. Having finished she picks M up and carries him to the bed.

- M stretches out on the bed as his mother notes his wet diapers and tells him that she must change them. He turns to his side and softly repeats "Mummy . . . mummy . . . mummy . . ." to himself. "O.K. fella," his mother states and M rolls over to his back to have his clean diapers put on. Then he grins broadly and scoots back to his side. "O.K. M, that's enough! Just hold still and we'll get these things on you for the night." M turns back over and then kicking playfully at his mother's breast with his foot he says "Ha, ha . . . boobie . . . boobie . . . boobie . . ." "O.K. M, that's enough of that,

sometimes you embarrass your mother," she says firmly as M giggles gleefully. Mrs. A picks up a glass of orange juice and M sits up quickly on the bed looking at the glass. Mrs. A offers the juice to M who says very firmly, "No, not!" He sits looking around the room. Mrs. A puts the glass on the table commenting "This is just one of M's things. He knows that juice is the last thing before sleep and unless he's dead tired he refuses it at first." M then points at the glass and commands "Duice!" He takes the cup away from his mother, who had started to hold the glass for him to drink, and begins to drink slowly from it. He looks sleepy now, but says very solemnly, "Not nightie," to his mother. He picks up a small truck from the bed after shifting the glass to one hand. "What's da?" he asks his mother.

- His mother replies that it is a truck with a hippopotamus. "Doggie, doggie, doggie" he insists upon looking at the zoo animals. He grins at his mother and shouts "Wuff, wuff, wuff . . . doggie!" "Alright, I guess it can be a doggie if you like M," his mother smiles at him as he drinks his juice. Mrs. A gets a sheet and brings it to the bed. "No!" objects M as he sees it. "You don't have to have it on just now M. I'll put it on the bottom of the bed for you and if you need it later it will be there." M nods and finishes the juice, passing the glass to his mother. "Am ti, ti," he says quietly to his mother. "You're tired. You've had a long day." M bounces up and down on the bed playfully. "Alright M, it's time for you to lay down now." He says a few whispered words which the observer can't hear. Then M sits up, pulls his mother's face close to his, kisses her and announces, "Love du." His mother thanks him as she helps him lie down on his pillow. He closes his eyes and is quite relaxed.

APPENDIX VII

TABLE 2.-- Characteristics of sample of four children observed prior to and following surgery.

Child	M.A.	M.M.	D.P.	S.W.
Age in months	25	29	23	18
Parent	yes	yes	no	yes*
Diagnosis	bladder neck obstruction	strabismus	cleft palate	cleft palate
Operation	cystoscopy	correction of strabismus	palato-plasty	palato-plasty
Date of admission	5/14/68	5/9/68	4/26/68	5/7/68
Date of operation	5/15/68	5/10/68	5/1/68	5/8/68

*Mother "roomed in" with child.

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