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SCALE: SOCIAL AND PERSONAL  
RESPONSIBILITY DOMAINS.

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THE CHILDREN'S ADAPTIVE BEHAVIOR SCALE:  
SOCIAL AND PERSONAL RESPONSIBILITY DOMAINS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for  
the Degree Doctor of Philosophy in the Graduate  
School of The Ohio State University

By

Diane Reeder Ewing, B.S. Ed., M.A.

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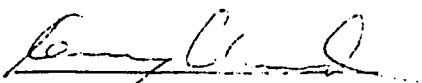
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To Tom and Justin  
Don't argue with the expert.

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Henry Leland has introduced me to a great deal of theoretical and practical knowledge concerning mental retardation, but he has also given me much more than that. He has provided the opportunities to experience and to become committed to the ongoing effort to reduce the incidence of mental retardation in our society. When he accepted me as one of his students, he agreed to teach me what he could about the clinical practice of Developmental Psychology, but he also stressed that he would try to convince me that my skills would be best utilized in the fields of Mental Retardation and Developmental Disabilities. He has succeeded.

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CHAPTER I  
INTRODUCTION

The Children's Adaptive Behavior Scale is being developed to provide an effective and efficient means of assessing the developmental and adaptive processes of handicapped children. To establish the coping successes and failures of each child, specific areas of maladaptation or delay will be sought. This approach has very successfully been implemented with the existing American Association on Mental Deficiency's (AAMD) Adaptive Behavior Scale (Nihira, Foster, Shellhaas, and Leland, 1974) for older children and adults. Now, through the financial backing of the Office of Education (Handicapped)<sup>1</sup>, development of a scale has been initiated to provide similar data on infants and preschool children--The Children's Adaptive Behavior Scale (CABS). The primary objective of this study is the development of two parts of this scale--those of Socialization and Personal Responsibility. Some of the other areas which will be dealt with by researchers are: Independent Functioning, Physical Development, Language, Early Cognitive Development, Play Activity, Number and Time Concepts, and Self-Direction.

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Mental Retardation is the most common handicapping condition found in children today and research emphasis will be placed primarily in that realm. Nonetheless, other representatively "at risk" children will also be included. These are: cerebral palsied children, premature infants, babies with low APGAR scores, visibly developmentally delayed children, and children with autistic behavior patterns.

The American Association on Mental Deficiency's definition of mental retardation was revised in 1973 to read "significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period" (Grossman, 1973; Leland and Smith, 1974). Subaverage general intellectual functioning usually is taken to mean a low intelligence quotient, and "significantly" subaverage functioning would be a score that is at least two standard deviations below the mean.

The definition of adaptive behavior as put forth by AAMD refers to the effectiveness with which the individual copes with the natural and social demands of his environment. This coping behavior is conceived in terms of the degree to which the individual is able to function and maintain himself independently, and the degree to which he meets satisfactorily the culturally imposed demands of personal and social responsibility.

The implication that the degree of retardation depends not only on inherent characteristics of an individual, but also on the social and cultural norms of the particular environment to which the individual is attempting to adapt, is an important factor. Leland (1964) presented a five-level classification system for adaptive behavior which ranges from Level 1 (mild, negative deviation from population norms) to Level 5 (extreme, negative deviation from population norms). To establish a precise understanding of this adaptive behavior concept as it relates to the classification and rehabilitation of mentally retarded individuals, the Adaptive Behavior Project was established in 1963 at Parsons State Hospital and Training Center, Kansas. The objectives of the project were to identify and assess the culturally and socially imposed standards of acceptable or unacceptable behavior from the community point of view, and to explore and assess the basic attributes of the coping behavior of the mentally retarded. The final product of the project was the development of an instrument providing quantitative descriptions of individual coping behavior.

Mercer (1965) in discussing the "social system perspective" of deviant behaviors, describes mental retardation as a label emerging from an interpersonal process in which one individual or social group makes a value

judgment about the behavior of others. The individual's behavior is judged in relation to the expectations of that individual's social group. In this way, the degree of retardation depends not only on the person's inherent characteristics, but also on the social and cultural norms of the particular environment to which he is attempting to adapt. Doll (1966) and Sarason (1959) have also criticized the overemphasis given to intellectual functioning in defining mental retardation during the past decades, and have strongly advocated the consideration of cultural factors as important criteria.

Recognizing that any clinical estimation is at best an approximation of the possible meanings of a group of behaviors, and at worst is often a diagnostic statement based on the evidence of only one or two supposedly "key" behaviors, the current effort still seeks to avoid the utilization of the assessment of adaptive behavior for labelling purposes. Rather the aim is to set up a prototypic method for looking at behaviors and broad lines of community expectations (Leland and Shoae, 1975) with community success being the basis for the priorityzing of different areas of functioning. It will separate necessary behaviors from preferred, and preferred from those behaviors necessary only to a particular living milieu.

Nihira (1970) describes social maladaptation as referring to a general dimension that involves destructiveness, rebelliousness, untrustworthiness, antisocial behavior and manners, and psychological disturbances which indicate negative attitudes toward one's own social environment.

In a factor analytic study which grouped 931 adult retarded into seven "natural" cluster groups, it was discovered that many retarded with equal levels of deficiencies in their organization of skills and abilities are not necessarily equal in their emotional maturation, and are expressing themselves in different forms of undesirable behavior reactions.

There are three types of uses for the Adaptive Behavior Scale (ABS). First is direct reporting of behavioral skills and coping strategies with the important information being what the individual does now, what precedes this behavior, and what the expected or desired succeeding behavior should be. In this respect the scale indicates ongoing behavior and suggests its place in the broad lines of growth and development of the individual as well as further indicating the next step or the next type of behavior toward which change should be directed. It does not establish a prescription or provide all the intervening steps--it simply indicates milestone points. Secondly the ABS is a functional instrument for program evaluation, and thirdly it

aids in diagnosis and classification where "labelling" becomes advantageous as a means of acquiring needed assistance.

It was believed by the members of AAMD who voted to add the stricture that a person must be deficient in coping skills or adaptive behavior as well as intellectually deficient to be considered mentally retarded, that individuals who are managing the demands of situations effectively in areas outside of scholastic achievement should not be labelled as mentally retarded. Since the act of labelling a person may have many negative as well as positive effects, it was considered prudent to channel the resources available for this group to those who are "visibly retarded". As Leland and Smith (1974) state it, the concept of visibility is related to survival for the mentally deficient. In a statistical curve, where most individuals behave rather invisibly, it is the people on the lower end of the curve to whom visibility is destructive. The fact that they appear abberant oftentimes leads to their being "put away" in institutions or at least out of the public eye. On the other hand, as long as they remain invisible they are treated as though they are fairly normal.

In our society ignorance or slowness in mental functioning is often joked about but is not usually considered dangerous or distasteful. However, a person who behaves



in socially unacceptable ways, e.g. exhibiting little or no control in acting out behaviors, or eating sloppily with fingers, etc., can bring about such disfavor from other members of society that the guardians of that individual are pressured to do something about changing the status quo. When such behaviors are coupled with a low intelligence quotient, they have often been a signal to others that "nothing could be done", and institutionalization was instigated both for the protection of the individual and for society. Having been in several of these so-called protective institutions, the writer is in no doubt about the party for whom protection was considered most important.

Leland (1964) suggests that the major differences between the mentally retarded child and any other child is that the former is unable to utilize the cues and stimuli from his environment as appropriate guides to behavior without the help of others in making those cues figural for him. He simply does not know that cues are present to help him make a decision about a situation, unlike the bright but emotionally disturbed child who misuses the cues. It is the child's inability to enter a situation, draw appropriate inferences from it, and establish a behavior course based on those inferences that is characteristic of retardation (Edmondson, deJung, Leland, and Leach, 1974). Although the child certainly has

cognitive abilities that can be expanded upon (this being the crucial defense against the die-hard belief that nothing can be done about a retarded individual's maladaptive behavior patterns), it is necessary, through proper clinical intrusion to force the child to think (Leland and Smith, 1965). The mentally retarded child's reception of information, his perception and his information storage and retrieval will all be different from that of the normal child. Because of this, the child almost inevitably has communication problems which lead to more failures in identifying and utilizing cues. These of course lead full circle to further communication deficiencies.

Cognitive processes and capacities develop spontaneously with maturation, so if a child is not helped to recognize and use environmental cues, this development either does not occur or proceeds slowly, or in a modified way. This, in fact, is why it is so crucial to establish what the child is doing as early as possible. Given a multitude of social, intellectual, or physical factors that might retard a child's overall development, the sooner in the child's immature state that these factors are identified and dealt with the more successful the child will be in coping with social communication (Leland and Smith, 1974).

The two areas of adaptive behavior which are most important to a child's ability to fit in with his family, peers, and other social contacts are his social adaptation and his extent of personal responsibility. It is sad if a child of four is not toilet trained or cannot eat with a spoon, but that is the problem primarily of the child's caretakers. When a child throws a rock in a window or repeatedly pulls down or steals merchandise in the market place, obviously other people become directly concerned and involved. The social definition of adaptive behavior implies that the way society views a child as he functions in a variety of adaptive situations is an important consideration.

When a child is identified by a community as a problem both because of maladaptive behavior and because of overall significantly subaverage intellectual functioning i.e. mental retardation, it is already late in the child's development. It is at this stage that the existing AAMD Adaptive Behavior Scale has been most helpful in establishing priorities for future learning. Now, however, with the development of the Children's Adaptive Behavior Scale, the emphasis will be heavily placed on mediation not remediation of the child's interaction with his environment. The goal is to identify existing deficiencies

and to work full-scale on lessening these while delimiting the appearance of future deficiencies to the fullest extent possible--especially the most visible ones.

Knoblock and Pasamanick (1974) have stated that clinical manifestations of abnormal and atypical development in infants always present problems of diagnosis and prognosis. Causes of deviation, the developmental outlook, and curative or ameliorative therapy must be sought. Considering the outlook, the possibilities of treatment, and the family situation, the question of what must be done has to be asked. For normal infants in a normal environment, development is methodical, orderly, and timed; they go through stages which follow each other with such regularity that they are, in the main, predictable. "This is the true meaning of man's genetic endowment. The human infant becomes a human adult, a person uniquely shaped by the hereditary, biopsychosocial and cultural factors which have impinged upon him since the species and individual evolved, grew, and developed" (p. 129).

Even the abnormal infant follows human development: no matter how distorted, the progressions still are recognizable as characteristic of man alone. In the abnormal infant, some degree or retardation is nearly always the most obvious symptom, but not necessarily in all areas simultaneously, or to the same degree in each area of

behavior. Secondly, development is distorted; behavior patterns may be deformed or hypertrophied, or they may fail to appear. The amount of retardation and distortion depends upon the nature of the etiologic factors, their severity, and the time of their occurrence in the child's life cycle. Interference with intellectual functioning prevents full expression of those behaviors which are most uniquely human.

There are three major advantages that the adaptive behavior approach has over others (Leland and Shoae, 1976). First, information is derived directly from parents, teachers, and other persons working and living with the children. Second, reported maladaptive behaviors are based on specific experiences in natural settings and therefore provide more information for establishing priority needs for change. Third, the adaptive behavior approach, which involves finding out how a child copes with the natural and social demands of his environment, immediately provides for broad screening and case identification so that infants can be brought into corrective programming at the earliest possible time.

Infant education, especially the education of handicapped infants, requires a rapid means of identifying the child's adaptive and social adjustment in terms of potential relationships with peers, to new school situations,

home situations, and the general manner in which he learns to survive in his community setting. The concept of the handicap implies an existing failure in adaptation, thereby increasing the importance of immediate intervention efforts. The earlier the intervention in cases of recognized handicap or delay is established, the greater is the likelihood of preventing further disabling effects. Thus the Children's Adaptive Behavior Scale is being designed for use with children from two weeks to six years of age. It is difficult to reliably assess the social development of infants under one month of age because of their rapidly fluctuating state changes (Wolff, 1959). Therefore, only babies of one month and older will be included in this area of scale development.

Programs for handicapped children such as the First Chance Network, and Head Start will be target users of this scale. With the broader understanding of the children that are served through these organizations, more effective curriculum and program plans can be initiated.

As was reported by the developers of the CABS (Leland and Shoae, 1976) three problems emerge in working with handicapped infants and preschool children:

"(1) there is a problem in identifying the handicapped population within the younger age group; (2) there is a problem in establishing education, treatment, and training priorities; and (3) there is a problem in determining the

most appropriate skills and training activities required for the most efficient usage of available manpower" (p. 3).

Problem one involves the determination that a handicapping condition actually exists because developmentally delayed and potentially disabled infants do not always present clear physical symptoms which could be determined through a physical examination. In these cases, psychological instruments are needed to compare a child's development with those of his peers. It is also necessary to follow a child's progress over time to determine his individual pattern of development. Because it measures and records specific behaviors within a coping demand system, the adaptive behavior instrument becomes an important measurement tool in the establishment of behavioral priorities.

Problem two, the determination of training priorities becomes important when it has been determined that there is a reason for special concern. Since items in the CABS are based on developmental expectations and levels of difficulty, it provides these data both quickly and efficiently. Upon determining the adequacy of a child's current coping abilities, the administrator has only to look to the next progressively more advanced behavior to begin designing a training milieu which will promote its

attainment. Furthermore, the CABS is sensitive to small degrees of change and easily lends itself to short-term planning in keeping with the growth pattern of the infant.

By thus determining the training needs of handicapped children, the Children's Adaptive Behavior Scale directly meets some of the needs of problem three, the establishment of appropriate skills and training activities required for the efficient usage of available manpower.

The major benefits expected from the research on the Children's Adaptive Behavior Scale will first be the downward extension of the AAMD Adaptive Behavior Scale (Nihara et al., 1974), giving better continuity of planning and program organization across the whole range of handicapped children; and second the improvement of specific information on handicapped children for the establishment of more appropriate and rapid programming and training.

The Children's Adaptive Behavior Scale will be used by a wide variety of individuals, including professional and subprofessional personnel such as mental hygiene, psychological, and social work technicians, home trainers, child development workers, etc. Thus the use of the measure will make it possible for a range of individuals working directly with children to evaluate them and know when more professionally trained individuals are needed in the helping situation.



Working primarily with the literature reported in Chapter II, an item pool will be drawn up of behaviors which have been found to mark a child's progression in social development. The behaviors will be separated into two categories, i.e. Socialization which will include personal awareness, body contact, and personal interaction; and Personal Responsibility--moral development and altruistic behaviors.

The next step after an item pool has been culled, will be the development of questions created to behaviorally assess the child's skills within each of these two domains. Following this initial development, the scale will be administered to two infants or children for each of the following age groups by months: one, three, six, nine, twelve, eighteen, twenty-four, thirty, thirty-six, forty-eight, sixty, and seventy-two. The purpose of this initial administration is to ensure that items are ordered in such a manner that the children's adaptive functioning can be measured, and to ensure that the person conducting the assessment can understand the items as they are stated. The items will then be examined with respect to their hierarchical nature in assessing adaptive functioning and rearrangements will be made if that ordering is faulty. If certain items require interpretation by the administrator,

revisions will be made to minimize this occurrence. In addition, if gaps are discovered in the course of this initial testing, new items will be created to fill them.

At this point the two aforementioned domains of the Children's Adaptive Behavior Scale being developed in this study will be ready for evaluation. A sample of infants and children who fit into the appropriate age groups will be sought. The experimental group will consist of one full-term child having a deficient APGAR at birth, one Down's Syndrome child, one cerebral palsied child, and one prematurely-born child in each of the age groups from one month on (a sample of forty-eight infants). At six months children who are visibly developmentally delayed will be included (a sample of ten infants). At three years and older, emotionally disturbed children with autistic-like behavior will be added (a sample of four). A fuller discussion of these selections can be found in Chapter III. The experimental group of sixty-two children will be matched with a control group of children selected by age, sex, socioeconomic status, and the absence of any noticeable developmental deficits.

Data on the first version of the social domains of the Children's Adaptive Behavior Scale will then be collected from both groups. At this time, detailed item analysis (Guttman, see Chapter III) will be carried out to determine

whether each item discriminates between those children designated as handicapped and those regarded as normal. The ordering of the items will also be checked to assure their proper placement. Recommendations will then be made for future refinements of these two domains of the scale.

## CHAPTER II

### REVIEW OF THE LITERATURE

There are innumerable factors impinging on the process of socialization of any one child. In this literature review it will be possible to only touch upon the myriad elements that are known or hypothesized about the dynamics of this phenomenon. The child's own inherent characteristics and the way in which they interact with environmental stimulations will be the first area considered. In any measurement endeavor it must be kept in mind that each individual not only has developmental milestones to reach and surpass, but that he does so much more or less easily depending on his own natural behavioral tendencies.

It is not as difficult for a quiet, relatively inactive child to learn impulse control as it would be for his more active counterpart whose energy seems to know no bounds. Conversely, the active child who is naturally outgoing finds it far less of an ordeal to establish friendships in a new situation than would a shy youngster. It is just such differences as these that make it so challenging to try to understand the qualitative as well as quantitative differences among children simply through asking a set of prescribed questions, such as those of the Children's Adaptive Behavior Scale.

After the area of individual differences has been touched upon, a general overview of children's social development will be presented. Given this broad developmental map, the writer will then concentrate on various, more specific factors involved, such as attachment, maternal attitudes and their influence, separation anxiety and the fear of strangers, and the development of dependency in children.

A second section of this literature review will focus on the development of peer relationships during the preschool years and will cover some of the important variables which have been found to relate to peer acceptance. These two sections will contain much of the information from which the general socialization domain items will be formulated.

The third and final section presented will be on moral development during the preschool years. Some interesting data which has been collected about the internalization of parental norms will be discussed in the light of their implications for disciplining techniques. This portion of Chapter II will constitute the basis of item selection for the Personal Responsibility Domain of the Children's Adaptive Behavior Scale.

### Individual Differences

Knoblock and Pasamanick (1974) discuss the inescapable interaction between the organic constitution of an individual and his environment.

"Personal-social behavior is greatly affected by the temperament of the child and by the behavior of the parents or others by whom he is reared. The range of individual variation is wide. Nevertheless, maturity factors and the degree of intactness of the central nervous system play a role in the socialization of the child" (p. 14).

The intactness of the central nervous system depends on a multitude of factors, but except for specific genetic ones, environmental factors are more crucial determinants of differential behavior, and are largely socioeconomically derived. The mother's life history has an important effect on the gestation of her infant and the interaction between host and environment continues postnatally, with socio-cultural factors influencing the psychologic level of integration, not only through cultural and educational opportunities, but also through the effects of disease and malnutrition on the biologic substrate. Consideration of the interaction between genotype and phenotype is essential in diagnosis and prognosis even though it often appears to be ignored in the discussions of particular clinical entities.

Even though intimate interrelationships exist among the different facets of behavioral development, each aspect demands separate analysis and study for adequate differential diagnosis and prognosis. However, all are evaluated concurrently in the course of the developmental assessment. It is not possible to say "Now we are evaluating intellectual potential; next we will do the neuromotor examination." Both are aspects of a neurologic examination. The infant cannot be fragmented into psychometric and neurologic halves, or into any other independent subdivisions. Neuro-motor integrity and maturational status are inextricably intertwined.

In like manner, while this writer will be emphasizing two broad areas of social development as aspects demanding separate analysis and study in children (Socialization and Personal Responsibility), it should not be in any way forgotten that these areas are at the same time inextricably a part of all other phases of development. Certainly, intellectual, physical, and educational determinants have pervasive effects on a child's social development. But, it is by separately examining behaviors displayed in the normal course of social development that one can determine the individual areas wherein development has gone awry.

Scientists and clinicians must respect the complex set of internal organizers with which the child enters the world, and realize that a full understanding of the child's development must include a comprehensive statement of the ecology of the nature of progressive interactions with the world around him/her. It is how the child incorporates that world through progressive experiences that must form the basis of fully understanding the child's progressive development (Friedlander, Sterritt and Kirk, 1975).

Kuo (1967), Gottlieb (1966) and Schneirla (1963) hold that the sequence and outcome of behavior is probabilistically determined by the critical operation of various endogenous and exogenous stimulative events. Any environmental change in behavior (Waddington, 1957) is bounded by the genotype. It controls whether an early experience will have few or great effects. Just as learning ability is inherited, so too are some children buffered from environmental changes while others are less so.

In the Berkeley Growth Study (Bayley, 1956), where observations were made of the same children over time, individual patterns were found to be the rule. Not only did structure and function develop and become differentiated from each other, but they did so at varying rates. These differences of timing occurred for different aspects of one child, as well as between children. It was concluded that



the pattern of growth in each child is unique. He can be compared with his peers and with his own past history, but oftentimes explanations of the causes of his deviations can be found only after the fact, and can be ascribed at that time to either inherent characteristics or environmental experiences.

Escalona (1973) speaks of the different kinds of experiences an inherently active or passive infant may require in order to develop optimum social contacts. She believes that predominantly inactive babies (four to twelve weeks old) are more attuned to oral activity and visual attention to the immediate environment. These babies tend to activate part of their body rather than the whole; they have more focused visual and auditory attention, and are generally more modulated. Only inactive babies were capable of self-soothing by means of oral activity.

Active infants, on the other hand, tend to mobilize their behavioral repertoire in response to much less stimulation than inactive infants. The active infant's behavior is also more frequently focused on the environment rather than on his own body.

The consequences of these different reaction tendencies are as follows: The level of stimulation given active infants in an ordinary home is generally enough to induce the frequent occurrence of behaviors that pave the way

to further developmental progress--even if the infant gets little social attention beyond that entailed in routine care. Routine caretaking contacts are stimulating enough to elicit social responsiveness at whatever is the child's most mature level, even if the caretaking adult seldom combines these routine procedures with playful social interchanges. The same is true of the mere presence of objects and toys within reach and sight. The active infant is so object-oriented that he will investigate his surroundings without much if any encouragement.

Inactive babies, at least up to eight months, need more specific provocation to stimulate object manipulations. They require more complex bodily coordinations (different positions), and social responsiveness beyond the simplest varieties. They require more specific stimulation to make the expected gains in visual-motor coordination, in vocalization, and in communication than do active infants.

Escalona describes the tendency of institutional caretakers (and many mothers) to act on the principle that young infants should only be approached when they appear to be in need e.g. when they are crying. Since inactive babies react to discomfort less intensely, they often are approached, tended, and played with less often than are active infants in the same setting. Along these same lines,

Schaffer (1966) demonstrated that temporary developmental losses due to hospitalization were significantly more severe for inactive rather than active infants.

Escalona (1973) concludes that active infants are less dependent on an optimal social and physical environment for the stimulation they need to maintain developmental progress; while inactive babies are more able to maintain their own equanimity and to overcome upset and distress without the attentions of others. So, for inactive infants the developmental consequence of less than optimal social and physical environments is likely to be that these infants who most require it receive a minimum of stimulation as compared with the active infants who are more likely to compel attention.

Schaffer and Emerson (1964) discussed the differences between cuddlers and noncuddlers in infancy. Cuddlers were described by their mothers as having the following kinds of behaviors: He "cuddles you back;...snuggles into you." Noncuddlers' behaviors that were cited were: He "gets restless when cuddled, turns his face away and begins to wiggle;...fights to get away" (p. 2).

Noncuddlers were soothed when in distress by walking or carrying the child around or by giving him food, not by rocking. The noncuddlers still very much regarded their mother as a safe haven when they were frightened, but they

established proximity either through looking at the mother or standing near, rather than by being held. The non-cuddlers don't resist all forms of physical contact for they love to be swung and played with, but they protest greatly when their body movements are being restrained.

Noncuddlers seem to be well ahead of cuddlers in motor development, and it was hypothesized that the noncuddlers' restlessness appeared to provide a drive to motor functioning which resulted in increased achievement in this sphere. It was also concluded that the noncuddlers' avoidance of close physical contact was not peculiar to social relationships either to the mother or to others. It appears to be a congenital difference which affects a wide range of functions--apparent in non-social as well as social situations.

Murphy (1962) presented data on the manner in which inherent temperamental differences affected a child's coping abilities in given settings. She suggested that children of low sensory sensitivity, low autonomic reactivity, low drive, and good developmental balance will function smoothly and naturally with moderate encounters with the environment. They will display control, mild gratification, and little compulsion to obtain more intense or a wider range of satisfaction. Their ease both of

gratification and of control will help them to avoid guilt and hostility-arousing conflict with the environment.

By contrast, children of high sensitivity, high drive, high autonomic reactivity, and good developmental balance will make active, vivid, quick contact with opportunities; maximize their use of them with a wider range of coping techniques, and show evidence of a high level of gratification. But their high drive will lead to more conflictual encounters with the environment. Other things being equal, the flexibility and adaptive resources implied in their good balance will help them to solve problems resulting from these conflicts, with a resulting frustration-gratification balance on the positive side. But their greater tendency to get into conflict with the environment is apt to lead to a more complex emotional life, and more fantasy.

When high sensitivity and high drive are accompanied by developmental imbalance, the danger of unpleasant sequelae of encounters with the environment will be greater. If the high drive precludes a capacity for delay, a child may deal with these possibilities by cautious or slow entrance into new situations, a tendency to be selective, and to maintain safety within a narrow range. But gratification will be pursued energetically within this range and can be intense when difficulties are mastered.

When high sensitivity is combined with high autonomic reactivity (especially with slow recovery), and with high drive but marked developmental imbalance involving deficiency, especially in the adaptive areas, the child will have great coping difficulties; he may have difficulty in the use of delay, selection, and other ways of controlling the impact of the environment, and be prone to disappointment except when he finds exactly the right scope for his areas of good equipment. It is one of the major goals in the development of the Children's Adaptive Behavior Scale to help delineate a child's abilities as well as his deficits so that finding exactly the right scope for a child's areas of good equipment is an integral part of designing a training program for him. One widely held belief, shared by this author, is that "success breeds success" and it is on this philosophical premise that work with developmentally delayed children should be based. To do this, an understanding of each child's individual pattern of growth and development is essential.

### Socialization

"Man is a social creature. The purpose of infancy is to equip him to come to grips with the realities of social living. Hence, the successful adaptation of the four year old child can be measured by his social independence..." (Bardwell, 1970).

The most important event in the first year of a child's life is the development of the bond of love between the child and his mother. As the first intense human relationship, it sets the pattern for all future relationships (Wenar, 1971). If the initial interaction is warm and loving, the child will approach other attachments with love and trust. If the relationship is empty, frustrating, or frightening, the child will be wary of closeness and may very well find the beginning of an emotional commitment a very threatening proposition.

Socialization is defined as the learning of acceptable modes and standards of behavior (Wenar, 1971). But it is a universal observation that children often have little inclination to do much of what their parents and culture tell them to do. The child generally comes to behave acceptably only in order to gain parental affection or to prevent the loss of affection. Thus, the bond of love is at the core of parental discipline and adds greatly to its effectiveness.

The neonate does not respond to people; he responds to stimulation. He has no real understanding of the world, but he does have a genetic endowment or preprogramming which makes him particularly responsive to the kinds of stimulation which are properties of human beings, i.e. movement (Walters and Parke, 1965), the light and dark contrasts in a face (Spitz and Wolf, 1946), the particular pitch of a human voice (Wolff, 1963), etc. He also is endowed with a physical and behavioral repertoire which makes him attractive to the person(s) who will be responsible for caring for him. Therefore, in the absence of pathology in the infant or in his caretaker(s), a very natural bonding takes place. The baby is interested in people, and usually in turn, they are interested in him (Wenar, 1971).

White (1975) sets goals for the first seven months of life which come under three headings: 1) Giving the infant a feeling of being loved; 2) Helping him develop specific skills; and 3) Encouraging his interest in the outside world by stimulating his curiosity. Through these first seven months nature makes it relatively easy to do well by a child. Infants and caretakers are so well programmed that, by and large, attachment takes place easily, quickly, and to the mutual satisfaction of the child and his parents.



Eight to twenty-four months is the period which White (1975) feels is the most important time in a child's life as far as intellectual performance is concerned. Now, when the child's burgeoning curiosity and the locomotion it takes to satisfy that curiosity are coalescing, it takes more thought and effort to provide those experiences which will aid the child most in developing his intellectual capabilities. White proclaims that the reason we do not see dramatic evidence of poor development in the first year of the lives of most children who will do poorly later is simply that they have not yet actually developed the deficits.

However, the two-year-old is a rather complicated, firmly established social being. He/she can be already either badly spoiled and very difficult to live with, or completely alienated from people. The two-year-old is a sophisticated social creature.

"His social world for the most part revolves around his primary caretaker; and ordinarily he has worked out with her an extraordinary contract full of ifs, ands, and buts which describe a great deal about the various possibilities for him within the home. He's learned how much he can get away with with his mother, and whether or not she's a generally friendly person" (White, 1975, p. 112).

He has learned all the subtle clues that help him to identify what his mother's mood state is at any given moment. He's usually learned a whole other set of information about his father and his brothers or sisters. He may have, at age two, developed into a marvelous human being who is a pleasure to live with, a mini-companion who is good for all sorts of genuinely pleasant experiences; or more sadly, he may have developed into an overindulged child who constantly pesters his mother. He may become, in other words, extraordinarily difficult to live with and regularly unpleasant. Or, even sadder, he may have been so consistently turned off of people that he has become an isolate, one who never has had the pleasure of a free and easy rewarding relationship with other human beings.

White says that he personally believes that the social contract a child and his caretaker have established in the first two years is relatively hard to subsequently alter or modify against its established direction. "I think that what children acquire in that first two years is the first set of social skills and attitudes they will begin to use with all people--with other family members, and with other children as they enter into true peer relations" (p. 128).

### Birth to six weeks

Newborns are not sociable in any ordinary sense of the term. However, two simple signs of sociability do emerge routinely during the first six weeks of life. The first is a tendency which may begin as early as the first week for the baby to look toward the eyes of the person holding him. The second is the appearance of the first modest "smiles" while doing so.

Wolff (1963) in studying the smiling behavior of infants for the first thirty days of life found that the first clear indication of a "social smile" appeared during the third week when a high-pitched voice more consistently elicited a smile than any other stimuli. At about three and one-half weeks the baby seems to subjectively change from staring at a human to establishing eye-to-eye contact. During the fifth week a silent, nodding head consistently elicits smiling, but behaviors have a mechanical, almost impersonal quality to them. It seems that one of the universally integrated human behaviors is the tendency to smile at human faces (or things that look like them), especially when such a face is between six and twelve inches away (Wolff, 1963; White, 1975).

### Six weeks to three and one-half months

In the period of six weeks to three and one-half months, easy and frequent social smiling seems to arrive

along with a very strong interest in looking at the human face. Most anybody is able to get a two or two and one-half month old baby to smile regardless of whether or not the baby has had any previous experiences with them. This suggests a rather interesting notion from the point of view of the survival of the species. A defenseless baby needs to have some guarantee of a positive response from another creature who can help assure its survival. The smile is a very powerful force in winning over an older human.

Most home-reared babies do begin to smile regularly during the third month and often will begin to do so as early as six or seven weeks (White, 1975). Social smiling, above all, reflects a total, unqualified engagement on the part of the baby--so designed as to melt all but absolutely frozen hearts. A baby of three to four months smiles as he comes to recognize the specific arrangement of stimuli which characterizes people. He smiles to show his pleasure in the predictability and pleasure this gestalt of stimuli signifies for him. If humans continue to bring surcease from discomfort, and entertainment through the exciting stimulation they provide, he will continue to smile. In their own turn, adults will go out of their way to further delight the child, and this fact is one of the strongest guarantees that an attachment will be formed. The interaction is mutually satisfying.

Piaget (1952) maintains that in the first months of life recognition of the familiar brings pleasure to the infant. More and more, research is indicating just how aware and competent new infants are in organizing their world, and we begin to see their emerging understandings as consciously pursued goals (Stone, Smith, and Murphy, 1973). As the facial features, body contours, voice and dress of the primary caretaker gradually become integrated into a distinctive whole, the infant signals his delight with his social smile (Bowlby, 1958). To the infant who is trying to understand a largely unknown environment, the appearance of a known element brings a special sensation of pleasure.

During the first three months the child, in addition to smiling often, is also capable of showing rage (White, 1975). This probably is a response to significant physical discomfort, but there is nothing personal about it, i.e. it is not directed at any one person in particular, the way anger would be. As well as rage, a child from six weeks to three and one-half months feels well-being, usually evidenced with a full smile; neutral emotions, manifested by a sober and alert expression; feelings of gross discomfort which are shown by fussing; and an emotional state which is labelled as a feeling of intense concern. This is most evident when the child stares

steadily at his own hand or finger movements. It does not appear that the staring reflects worry, but rather a serious, studious interest.

Three and one-half to five and one-half months

By three and one-half months a child's mother is more able to elicit a smile from the baby and more able to continue doing so for long periods of time. The baby's special relationship with her seems to have begun. Sometime during the fourth and fifth months the baby regularly becomes excited and will actually giggle. It is also possible to see a response to being tickled. White (1975) believes that the effectiveness of the tickle is primarily dependent upon the "ticklee" becoming socially aware that another person is producing the stimulations. In addition to these behaviors, the child develops a collection of socially acceptable means of getting and holding the attention of another person, particularly an adult, e.g. cooing, banging a rattle, smiling, etc. The baby should still be crying strongly when he is uncomfortable. A lack of crying at this stage may mean the child has learned that the only pay-off from crying is fatigue (White, 1975). The child should have the basic expectation that others will help him if he calls out to them. Murphy (1973) studied thirty-one babies between sixteen and thirty-two weeks of age; and the same babies at preschool, latency,

prepuberty, and late adolescence to establish the outcome of early mother-child relationships. She found that developmentally balanced children coped with their world by protesting moderately when things went wrong. Protesting babies developed into active copers at the preschool stage. Developing a capacity to protest, to communicate discomfort, dislike, or needs is a part of active coping; as are developing some tolerance for frustration, some capacity for delay, and some capacity to struggle to meet one's own needs. Well adapted babies were also actively demanding and/or definite in terminating or resisting what they did not want.

#### Five and one-half to eight months

A baby five and one-half to eight months old (White, 1975) is growing interested in the world of sound. He is beginning to form a discriminating attitude toward people. There should also be some signs that the mother is more important to the child than others. The baby may begin to hesitate, be shy, or fear strangers. A smile should initially be harder to elicit.

#### Eight to fourteen months

At eleven or twelve months (White, 1975) the child makes his first clear requests for assistance from his mother, usually for milk or food, but sometimes for help when he is, for instance, stuck while climbing. He likes

to hug and be hugged, and there is a marked increase in his friendliness to well-known people. At the same time he is less gregarious with strangers--exhibiting more apprehension and shyness, although this is less obvious in familiar settings. By twelve months, the child should be beginning to pay attention to the verbal command "No!"

Some important emerging social competencies at this age are: 1) using an adult as a resource; 2) showing pride in achievement; and 3) engaging in make-believe or role-play behavior (White, 1975). As the child passes his first birthday he may use an adult as a resource when he has found something too difficult to do by himself. This is an important advance socially, and bodes well for future development. He may also have begun to try to use an adult as the easiest means of accomplishing a goal, or in order to monopolize the adult's attention. Neither of these latter developments are acceptable, and they should be eliminated through nonreinforcements as quickly as possible.

At this time the child is beginning to look for praise for accomplishments, which is a positive sign of his own pride in achieving. He also begins his first make-believe play, e.g. dolls, or trucks. He likes to include adults in this play and the social reinforcement he receives from such an interaction is highly beneficial.



Fourteen months to two years

"Having become attached to the mother in the first year of life, the toddler turns his back on her, literally and figuratively. He ventures out and explores the world in a spirit of self-reliant enterprise. He not only seizes the initiative, but also willfully asserts his right to do what he wants. His fragile ego is imperious. Inevitably he is confronted with parental No's and Don'ts and during the "terrible two's" his willfulness may be supplemented by a negativistic defiance of authority. More importantly, the lifelong process of weighing compliance against resistance begins. For their part, the parents are faced with the problem of preserving the toddler's initiative while making sure he does what they rightfully expect of him" (Wenar, 1971, p. 1).

From fourteen months to two years, the child is busy acquiring the social skills of a two-year-old (White, 1975). Some of these skills are: getting and holding the attention of an adult; using an adult as a resource; expressing affection and hostility towards adults in a variety of ways; increasing his capacity to direct the adult in various activities; exhibiting fantasy behavior on an interpersonal level; and opposition of the will of the primary caretaker. Around eighteen months, sustained stubbornness is the norm, but by age two negativism should have waned, and the child should be more reasonable. The child should be responding to speech with words of his own-- regardless of whether or not he's really saying something. He should be practicing having a conversation with others.

### Two to three years

In the third year there is a substantial and steady rise in interest in other children and true social peer interactions with them (White, 1975). A steady rise in activities outside of the home goes hand-in-hand with a lessening in intensity of the exclusive focus on the nuclear family and on the mother. Also, the eighteen-month-old child is far more in control of his emotions.

The most common social experience of the two to three-year-old is the attempt to maintain social contact with others. The second most common experience is complying with simple requests that mothers make. The third is attempting to gain another's attention. The fourth is attempting to get help from adults, and the fifth and final is the resisting of suggestions by either the mother or another child (White, 1975).

### Three to six years

Social abilities (White, 1975) of the well-developed three to six-year-old child are:

- Getting and holding the attention of adults through socially acceptable and reasonable ways. The means should be effective and the child should know when to stop.
- Using adults as resources after first determining that a task is too difficult. As the child goes from two to three he will be able to cognitively decide that something is too difficult rather than having to try it first to decide.

- Expressing affection and mild annoyance at adults and peers.

- Leading and following peers. At three years of age, the natural peer group size is still only two. It is not until ages four and five that the children can handle larger groupings.

- Competing with peers.

- Showing pride in personal accomplishments. The child comments proudly on a new skill or creation of his own.

- Engaging in role-play or make-believe efforts. Generally well developed youngsters select adult roles or fictional hero-figures for their pretending. Children who are not developing well are more inclined to include role-play that looks backward or involves more modest aspirations such as acting like a baby or an animal.

#### Attachment Behaviors

It has been hypothesized that without a specific attachment to one particular person during infancy, it is hard to learn about or have more than superficial relationships with other people (Thompson and Grusec, 1970). For example, in a study of kibbutz children, Rabin (1958) found that the children seemed to form emotional attachments all on the same level all the time. He felt that they may have needed that one intense emotional bond with their mother to be able to form deep attachments later.

Ribble (1944) studied 600 infants in institutions and hypothesized that adequate mothering (uninterrupted mothering) was essential for normal development. Without it, marasmus occurred. Goldfarb (1945) studying orphanage

reared children, and Spitz (1945) and Bowlby (1952) studying separation and lack of mothering, confirmed Ribble's conclusions. Even though conditions in institutions may be improved, infants without mothers remain markedly retarded. Spitz insisted that it was the lack of human contact which hurt so much. Goldfarb, who studied foster children who had been separated from their mothers but not placed in foster homes until after age three, found these children to have lower IQ's, to be unpopular, socially immature, aggressive, and insatiable for human contact without being able to form an attachment bond. They were also unable to keep rules and showed a lack of guilt. The children who acted as controls had been placed in foster homes before they were nine months old.

Provence and Lipton (1962) summarized differences between institutional as opposed to family-reared infants and found: The earliest signs of deficit (second month) were diminished output of vocalization in response to people and a failure to adapt to being held. The social smile appeared at the normal time, and in some remained for several months, while others became more sober. The infants developed an early and strong visual interest in adults, but this was not accompanied by the development of discriminatory behavior. There was a delay in signs of visual discrimination in response to the face of the

attendant vs. a stranger; and there was a delay in imitation of facial expressions. There were no signs of increasing attachment to one person. The infants had a small and constricted repertoire of feelings and an impoverishment of affective expressions. They were characterized by amiability and blandness; there was however, obvious though mildly expressed, pleasure in the contact with an adult. There was an absence of anxiety about strangers, with rare exceptions, and there was a failure to turn to or seek an adult when in distress or to solve a problem, and a failure to develop a sense of trust in the adult. There were no signs that the children anticipated or expected that needs would be met. Finally, the institutionalized children did not form any attachments to toys whereas home-reared children did. The home-reared children tended to generalize their attachments to humans to inanimate objects as well. However, Freud and Dann (1951) found a group of motherless children reared in a concentration camp who were not delinquent, deficient, or psychotic in their relationships to each other. Rheingold (1956) indicated that the average IQ of institutionally-reared children was within the normal limits. And, in a joint study with Bayley (1959), she found that the children were friendly, intelligent, and in no way emotionally or mentally retarded.

The fact that all children who have been maternally deprived do not show negative effects means that other explanations may be sought. Perceptual and learning restrictions may cause the deficits found so often in motherless children. Variables of handling, shock, stress, etc. are much like the "stimulus feeding" that Ribble (1944) suggests mothers provide when they stroke, hold, rock, and move in front of their infants. Mothers provide a great deal of stimulation. A child who receives stimulation can become habituated to it so he can be less or more aroused by stimulus change and can react normally to the stimuli in his environment (Hebb, 1949).

The ill effects attributed to maternal deprivation of infants younger than six months are probably due to perceptual deprivation. After six months they are caused by perceptual deprivation and the negative affective components that accompany the breaking off of an established emotional bond between mother and child. To illustrate this point, Shaffer (1958) presents his finding that infants entering a hospital under seven months of age are extremely interested in their environment. Over seven months, they show an overdependence on their caretakers.

Bowlby (1958) suggests that young children become attached to the social objects to which they are first exposed. With primates, Harlow (1973) has found the same

phenomena to be true, and he goes to great lengths to discuss just how strong the attachment to mother, sibs, or peers can become. He indicates that all five affectional systems (infant-infant; infant-mother; adult male and female; mother-infant; and father-infant) are affected by early social restrictions.

Bowlby's ethological approach to attachment and dependency has influenced the work of Ainsworth and Wittig (1969) and Schaffer and Emerson (1964a) who reject the innate vs. acquired approach to behavior. Although the fact of becoming attached is nearly universal or "environmentally stable" in most higher animal species, the identity of the attachment object is "environmentally labile" depending on the presence and appropriate eliciting behavior of that object during certain periods of the baby's development.

In humans the earliest attachment behaviors would appear to be crying and smiling, followed by the development of lifting of the arms to be picked up and finally when the child can move, either crawling or walking to the attachment figure (Ainsworth and Wittig, 1969). During moments of stress the child makes closer contact and hides behind the mother, clings to her skirts, or climbs into her arms.

Bowlby's (1958) belief is that the critical period for social attachment is between six weeks and six months--beginning with the first social smile and ending with the fear of strangers. However, one drawback to this theory is that all children who are attached do not necessarily become afraid of others; and the fear of strangers can predate attachment (Ainsworth and Wittig, 1969; Shaffer and Emerson, 1964a).

Bowlby emphasizes that the psychoanalytic theory of relief from distress is not the only means of explaining the origins of mother love. In terms of species-specific behaviors, he talks about those instinctual ones which are so adaptively appropriate that evolution has made their appearance highly probable. Without dividing responses into the two groups of learned and unlearned, he nevertheless explains their differences in terms of a continuum. At one end learned behavior may play a minor role while species-specific behaviors which are easily elicited or learned under ordinary circumstances take a more major part in determining a response. Bowlby has delineated five species-specific behaviors which he believes play an important role in the development of attachment. These are: sucking, visual and locomotor following, clinging, crying and smiling. While each follows its own course in development, all are integrated into a cohesive attachment network. Attachment is described as the process of



both mother and infant behaving so that they maintain proximity to one another. The attachment is specific in that both mother and child recognize each other and show reciprocal attachment and caretaking behavior almost exclusively to one another.

At first the infant spends most of his time in close proximity to the mother. As he grows older, he begins to spend more time away from the mother, moving in a circle of ever increasing radius. At any alarm the infant rejoins the mother and she moves to retrieve him. He also runs to her if she begins to move away, or if she signals that she is about to do so. The degree of separation that will be tolerated before attachment behavior is activated increases with age, mainly because competing systems, e.g. exploration, become stronger. Because attachment behavior depends upon the recognition of a particular mother, perceptual factors loom large in eliciting it.

In her work with Ganda infants, Ainsworth (1963) found that the strength and security of the child's attachment to the mother was not related to her warmth (amount of affection), or to the scheduling of feeding, or to whether she was the exclusive caretaker. However, the greater the total amount of time the mother spends in caretaking and other interactions with the child, the more securely attached he is.

In most instances the infant does become attached to the person who feeds him and provides other comfort and stimulation. Schaffer and Emerson's (1964a) finding that an infant can become attached to individuals who play with the child but who don't participate in his caretaking does not demonstrate that feeding per se cannot produce attachment, but that other factors can also be sufficient. In Schaffer and Emerson's experience attachment to a non-nurturant individual is never the child's only attachment, and the attachment to nurturant figures always develops first.

Ainsworth (1964) discusses five sequential phases in the development of social attachment.

1) The indiscriminating phase, in which the infant is unresponsive to social stimuli per se. This stage ends with the advent of the social smile.

2) The phase of differential responsiveness, in which the baby begins to discriminate between his mother and other people. He will be comforted more readily by his mother, or he may cry when held by others.

3) The phase of differential responding at a distance. At about twenty to twenty-four weeks the baby cries when his mother leaves the room and greets her when she returns. It is not always so much the mother's leaving which seems to cause the baby distress as it is his helplessness in

preventing her from leaving. If he can crawl after her, he is not so distraught.

4) Active initiative phase. The infant establishes, sustains, and renews contact with his mother. He follows her, lifts his arms to be held, etc. During this period (between about twenty and forty weeks) he is somewhat reserved with strangers but not anxious. He selectively seeks familiar figures. He also takes the initiative in exploring his physical environment while using his mother as a "secure base" from which to explore.

5) Phase of stranger anxiety. The child clings to the mother and is typically upset by strangers. However, another person may serve as a protective shield during the mother's absence.

Ainsworth believes that the process of forming an attachment is orderly, with the phases always following the same sequence and extending over a period of time.

Schaffer and Emerson (1964a) followed a group of Scottish babies from early infancy to eighteen months of age, and charted the developmental course of their attachments. In an early phase, called "indiscriminate attachments" the infants protested over separation, but the protest was not related to the identity of the person from whom they were being separated. This behavior was present in some of their infants from the very beginning,

peaked between four and five months, and began to wane as specific attachments began to regularly take place at about seven and eight months.

They found that fear of strangers emerged, on the average, about one month after the appearance of specific attachments, although about one-fourth of the group showed fear of strangers before they evidenced specific attachments. Following the evidence of specific attachments, there was an increase in the number of attachment figures.

Schaffer and Emerson report wide individual differences among infants with respect to the age at which specific attachments begin, the number of persons to whom attachments are formed, and the intensity of the attachments. Intensity of attachment was not related to: scheduling of feeding, age of weaning, duration of weaning, age of toilet training or the severity involved, or the sheer availability of the mother. Intensity of attachment was related to the degree to which infants were exclusively cared for by one person.

Factors which did strongly relate to intensity of attachment were maternal responsiveness and amount of interaction. The mothers who responded immediately when their babies cried had infants who were more firmly attached, as were the mothers who gave the child a great deal of attention and time. Furthermore, the infants of the more

attentive mothers showed greater visual attention to and manual manipulation of test objects at six months.

The kind of interaction did not make much difference; some mothers interacted primarily by giving physical contact; others by talking, smiling, and looking; and still others by directing the child's attention to other things than herself, and all these interactions seemed to be about equally effective in building attachment intensity. Also when attachments are formed to others they tend to be people who provide large amounts of stimulation to the infant. Breadth is essentially a function of the opportunities which a child has of meeting other people who will offer relevant stimuli.

Schaffer and Emerson (1964) interpret their findings on attachment during infancy with the basic tenet that any behavior of a child is a function of the level of cognitive development he has achieved. Therefore a child cannot develop a specific attachment until he can both discriminate and recognize an individual person. But even when a child can do this, he may not know that that person still exists when he is not in sight. This advance occurs when the concept of object constancy is mastered. When time concepts begin to be understood, the child should begin to respond to signs of the mother's impending departure; and he will be able to begin anticipating her

return during an absence. One example of this cognitive-developmental theory is that reactions to the death of an attachment figure should vary greatly with the age of the child, the exclusivity of the attachment bond, and his/her level of understanding of the permanence of death.

A final element to be considered in this cognitive approach to attachment is that the age of onset of specific attachments was not related to maternal behavior variables. Rather it was correlated to DQ, suggesting that the rate of maturation is more important than environmental variables in determining the point of time when attachment will develop.

#### Maternal Sensitivity

From work with human infants, the point has been made that beyond the baseline amount of interaction necessary to establish attachment, variations in the amount of interaction will produce variations in the degree of social responsiveness and the intensity of attachment behavior a young child displays (Maccoby and Masters, 1970).

According to Ainsworth and Wittig (1969), attachment is impeded when the child has no reinforcement for his behavior. He needs frequent and sustained contact with

others; sensitivity to his needs; a feeling of control over his environment; and mutual delight expressed in interactions.

Lewis and Goldberg (1969) discuss a generalized expectancy as a motivational model. They found that there was a positive correlation between maternal response to infant behavior such as vocalizations and crying, and the cognitive development of the infant as measured by response decrement. Furthermore, the correlations indicated that the latency of the maternal response and the contingency of maternal response (i.e. not whether she stimulated the infant, but whether she stimulated him directly after his own activity) were important variables in the interactions.

These investigators demonstrated that helpless or controlling behaviors were learned through the mother-infant interaction. The construct the infant develops is a generalized expectancy that his behavior has consequences in affecting his environment. The learning of this motive is dependent upon consistent reinforcements with short latencies so that the memory trace of the infant's act is still present. The infant has learned to expect environmental pay-off and this is a basis for future learning. When the infant acquires this expectation he is capable of instrumental behaviors other than those

already reinforced. The behavior of the infant becomes increasingly intentional and motivated by the expectation of producing a desired result.

Watson (1973) discusses a similar construct in the development of contingency analysis or "The Game" in young infants. If, across successive exposures of the stimulation the child's analysis confirms a contingency between a stimulus and response, the contingent stimulus and eventually the stimuli that mark the beginning of this contingency situation gain new meaning for the infant. The stimuli become releasers for smiling and cooing, and begin functioning as social stimuli.

During the first two or three months, the combination of slow response recovery and short contingency memory make it difficult for the child to repeat an effective response and remember why it was selected at the same time. But then, when someone starts to play a game with the child, e.g. repeating his vocalizations, blowing on his belly when he juggles his legs, etc., he begins to get the idea of a clear stimulus contingent on his own response. As the specific game is played a few more times, the infant experiences an increasing awareness of a clear contingency, and with that, vigorous smiling and cooing begins.



"The Game" hypothesis states that what is important to an infant is the perception of the relationship of a contingency between a specific stimulus and a specific response. It is believed that the infant can be expected to release smiling and cooing and perhaps even begin the initial stages of attachment with innumerable artificial or even mechanical situations if they should happen to be correctly arranged. Thus, "The Game" is not important to the child because people play it, but rather people are important because they play "The Game".

Ainsworth, Bell, and Stayton (1973) found that mothers who are sensitive and responsive to their babies' signals and communications tended to be also accessible rather than ignoring, cooperative rather than interfering, and accepting rather than rejecting. At home their babies engage in secure-base behavior; they intersperse exploratory play with occasional and nonanxious proximity-seeking behavior and with social interaction across a distance. The baby tends not to be disturbed by minor everyday separations. If he is free to follow he may gravitate after his mother as she moves from room to room. He does not frequently seek physical contact with his mother, and she in turn tends not to offer contact unless he seeks it. In a strange situation, the babies of sensitive mothers behave at first the way they do at home, using the mother

as a secure base of exploration. The successive stresses of the strange situation, however, reduce exploratory play and heighten attachment behavior. This whole pattern of mother-infant interaction associated with maternal sensitivity is considered to be the normal, healthy, pattern of infants toward the end of the first year of life.

The more responsive a mother is to her infant and the greater the total amount of social stimulation she provides, the more strongly attached her infant will be. Does this last?

A study by Rheingold and Bayley (1959) suggests that the attachment will not last unless the conditions that prevailed during infancy are maintained for a considerable time--perhaps into the preschool years themselves. A given pattern of a mother may weaken or strengthen the child depending on what he does with it. Of eleven babies (Murphy, 1973) whose mothers granted more than average autonomy to their children, six were active and independent at the preschool stage; but a few were rather passive. That is, some babies may need to be stimulated to be more active than they are. Murphy concluded that the checks and balances are so complex, the checkerboard of strengths and weaknesses so unique in each mother-child couple, that it is hazardous to derive simple formulas for mother-child

interactions. A mother "fits" one child but not the next; one child is entertained by an amount or quality of stimulation that overwhelms or annoys the next. There is no shortcut for getting to know the individual baby.

Fear of Strangers  
and  
Separation Anxiety

Usually between six and nine months, the child has learned to discriminate very well between adults, and he begins to be very selective about the persons to whom he remains responsive. There will usually be a decided preference for his mother. His greatest delight is in having her undivided attention. At the same time, two phenomena known as "separation anxiety" and "fear of strangers" are introduced. The child becomes upset and unhappy when his primary caretaker leaves, and usually at the same time he begins to show a genuine fear of unfamiliar people. The trust which the infant has developed from having good experiences with people, is now being carefully directed to only those individuals who have earned it (Wenar, 1971).

The one-year-old has learned that openness to love brings with it a vulnerability to hurt and distress. If the loss of love were not so painful the social development of the child would be a very different proposition.

One of the most important factors in development is the effect of the storage of early experiences on behavior and the permanence of that storage. A critical or sensitive period is a stage in development when certain kinds of experience are most likely to be stored. For instance, Hess (1959) indicates that the critical period for showing fear in infants must come where the curves of increasing ability to perceive strangers and the curve for the infant's ability to move intersect. Other variables can be implicated in the same way.

Piaget (1950) describes a time in infancy during which the self and environment are merged. If the environment is suddenly very different it is stressful until the time when the infant has become able to understand it.

Ainsworth and Wittig (1969) indicate that babies of mothers who are sensitive to their signals are able to use their mothers as a secure base from which to explore even an unfamiliar situation. But with the stress introduced by separation episodes, the baby increases his attachment behaviors. Children of mothers whose interaction has characteristically been disturbed by rejection, commonly respond to a stress with defensive proximity-avoiding behavior, which competes with and tends to block off attachment behavior. If the mother-child relationship has been made disharmonious by maternal interference or

avoidance, although the maternal rejection is either moderate or well disguised, the baby seems unable to defend himself. He reacts with great distress in separation episodes and with ambivalence to his mother during the reunion, evidencing both contact maintaining with contact resisting behaviors. The overall dimension studied thereby seems to be one on a continuum between a harmonious and disharmonious relationship.

Schaffer's (1966) incongruity hypothesis, when applied to the development of fear of strangers, is based on two propositions. 1) Fear cannot develop until a central pattern has been laid down by the individual's previous learning experiences in social situations which defines the familiar as opposed to nonfamiliar persons; and 2) The speed with which fear develops depends on the extent to which the child has had opportunities to establish the central pattern, and on the range of people, other than the mother, with whom he has come in contact.

Hunt (1960) suggests that fear of strangers does not occur in children who have always been exposed to a large number of persons, and that multiple mothering acts therefore as an inoculation against social shyness or fear.

Schaffer (1966) reports that the fear of strangers was often sudden and dramatic, but that although there were no signs of negative responses to the investigator

previous to this onset, there had been a gradual diminishing of positive responses, a "sobering of the features", which only gradually gave way during the course of the contact.

Even when the onset of fear of strangers has begun though, a baby will not inevitably show fearful responses the moment he is confronted by a stranger. The sight of an immobile stranger looking at the infant without smiling or speaking did not appear to be fear provoking. It was instead the active impinging of the stranger on the infant, particularly through physical interaction that elicited the fear response. Fear responses in relation to the unexpected can already be found in the early months of life, but it is not until the second half of the first year that such responses become linked to a particular class of person rather than to certain more primitive stimulus events.

Spitz and Wolf's (1946) classic study on maternal separation pinpointed symptoms of what they described as an early psychiatric syndrome. When the infants who were in the second half of their first year were separated from their mothers, the following symptoms resulted in about 20% of the subjects: apprehension, sadness, weepiness; retardation of development, dejection, stupor; loss of appetite, refusal to eat, loss of weight; insomnia. In

addition there was an expression on the infant's faces which was likened to adult depression.

Yarrow and Goodwin (1973) in studying the change in behavior for infants who were placed out of foster homes and into adoptive ones found much the same kinds of reactions as did the earlier Spitz and Wolf report. Fifteen percent of their sample showed no overt disturbances; 36% evidenced mildly negative reactions; 20% showed severe disturbances; and 6% showed extremely disturbed behavior in the time immediately following the change of mothers.

Relating these findings to the critical period hypothesis i.e. that vulnerability to a specific type of stimulation, deprivation, or trauma will vary at different developmental periods, Yarrow and Goodwin present the following data to promote less traumatic placement planning for children: Before three months of age, few infants show any sign of a reaction to a change in mothers. In the four and five month groups, 36% of the cases showed upset behavior, and by five months 50% evidenced disruption. In the six month group 86% manifested negative behavior, while all infants separated from their foster mothers between seven and sixteen months showed clear-cut evidence of disturbance (pp. 1032-1040).

In 1941, Shirley and Payntz studied age trends in response to separation for two to seven-year-olds, and found that there was a decline with age in the proportion of children who showed upset over parting from their mothers. Children aged two to four seemed to be fairly similar in their amount of upset, with the greatest decline in separation reactions occurring between age four and four and one-half.

The different reactions of children to the presence of a stranger all become attenuated over time. Nevertheless, from this point on and throughout the rest of his/her life, the child will never be as free or unguarded in his behavior as he was when he was an infant. Learning to trust new people is a process which gets underway each time a stranger enters the life cycle of an individual.

#### Dependency

Harlow and Suomi (1970) have pointed out that motherless mothers (primates) were abusive and rejecting toward their infants and yet the infants managed to nevertheless become attached. So too, with human infants, the ability to attach themselves through almost any channel means that almost all mother-child interactions will lead to attachments. The frequency and intensity of children's later dependent responses would be primarily a function, not of



acquisition conditions, but of eliciting conditions.

Deprivation is one of the most effective eliciting conditions for a variety of dependent behaviors.

Children of a given age often differ considerably in the intensity and frequency with which they exhibit various types of dependent behavior. Responsiveness to social influences in general are thought to form part of a larger cluster of dependent behavioral tendencies.

In their study of Scottish infants, Schaffer and Emerson (1964a) found that the infants who were most intensely attached at one age were generally not as dependent as they grew older. There is only a moderate level of short-term consistency in this behavior. In a like manner, Schaefer and Bayley (1963) tried to find different factors at later ages that directly corresponded to what is usually defined as dependency in infancy. They were unable to find even one. But they were able to pinpoint some clusters of behavior which served to order individual differences at each age level. The older the child, the higher the correlations were between age levels. The cluster they used included friendliness, sociability, and the absence of shyness. In general they found that friendliness and an absence of shyness during the preschool years did predict friendly and cooperative behavior in middle childhood, and to a lesser extent, also in adolescence.

Thus, infant socialization practices do not consistently predict dependency at preschool age. At first this seems somewhat surprising in that the warm parent provides a relatively large amount of contact comfort, and praises the child for desired behavior. All these behaviors should presumably be conditions for the establishment of a strong attachment to the parent on the part of the child, but warmth per se was not associated with either the intensity or breadth of attachment. The research (cited in Mussen, 1970, Volume II, p. 139) on the effect of warmth on the dependency of children of preschool and early school age almost universally find the two factors either not related or negatively related. Instead, dependency is more often than not positively related to parental hostility.

Sears (1963) has analyzed this problem in terms of conditions that lead to the acquisition of dependent behavior, and the conditions that lead to its performance once learned. He believes that high maternal nurturance in infancy should be associated with strong acquisition of the behavior. At a later point, frustration of this already learned behavior sequence should intensify the behavior for two reasons. First, if the mother does not give the nurturance the child wants, the child performs the actions he has learned to get such nurturance--that is, he performs further dependent responses. Furthermore,

nonreward or punishment of the dependent behavior which has been so frequently rewarded in the child's earlier experience generates conflict, and conflict energizes whatever responses occur. A rejecting parent is one who frequently withdraws himself from interaction with the child and makes himself unavailable--conditions which are proven to elicit dependent behaviors. The parent also probably frequently arouses anxiety in the child over whether he is loved, and a firmly established response to anxiety is the seeking of comfort from attachment figures or their surrogates.

Although it is possible that some dependent children may produce rejecting parents, social deprivation has been found so consistently to produce dependent behavior in children regardless of the preexisting characteristics of the child, that it can be assumed that this is true in family interaction settings as well.

Dependency is an immature response system that declines with age as a child acquires a more adaptive repertoire of behaviors to get what he wants. So among children of the same age, dependent children are those who have more slowly acquired these alternative techniques. Levy's (1943) study of overprotected boys indicated that boys who were continually provided with help and contact comfort to a degree unusual for the child's age, or who were restricted in

their opportunities to develop independently became either passively dependent if their mothers were dominant, or demandingly dependent if their mothers were submissive. This would be the kind of situation most commonly seen with institutionalized children. Not only do they have limited opportunities to become independent and to achieve alternative techniques to attain what they want, but they are also often helped much more than is necessary. Hence, the often observed general dependency of institutionalized children.

#### Peer Interaction

In trying to understand how peer and adult influences combine to effect children's socialization, research suggests that influences from these two sources are both additive and interactive in their effects on behavior. In many cases the norms of the peer group buttress those influences emanating from the adult culture. However, in some situations, peer norms are preeminent while adult influences prevail in others. The issue of cross pressures does not appear to be much of a problem in the under-six age group though, so the writer will be concentrating on dealing with the child's social development in both peer and adult realms, without becoming involved in this cross

issue. By and large it has been found that most peer values tend to be consonant with parental values anyway.

Generally, it has been found that peer interactions affect behavior additively or interactively in conjunction with inputs from the inanimate environment and with inputs from parents and other socializing agents (Hartup, 1970). Toward the end of the second year of life, babies attend positively to peers once conflicts over play materials are resolved. The toys serve as vehicles for both positive and negative social contact. At this age the larger infant will usually be the dominant one. Marked individual differences are reported by investigators (Bridges, 1933; Maudry and Nekula, 1939).

Maudry and Nekula (1939) studied the social interaction of infants up to two years of age. They found that infants between the ages of six and eight months ignored about half of each other's overtures. The social contacts that occurred were qualitatively similar to contacts made with play materials. Fighting, usually over toys, peaked between nine and thirteen months, and then declined. In a similar study using institutionalized infants, Bridges (1933) found that these babies had their fighting peak at fifteen months, but there was no significant decline until after the age of two years. Although responsiveness to peers is evident during infancy, it apparently lags behind

responsiveness to adults, perhaps because babies are less salient stimuli for the infants than are active caretakers. Adults respond to the infant's signals whereas other infants do this less regularly.

Harlow and Harlow's (1965) work on the development of social relations of rhesus monkeys is enlightening because it pinpoints some striking similarities to the social development of human infants. The first stage in rhesus social development appears to be a "reflex stage". Visual orienting to peers as well as following and other proximity-maintaining behaviors are common. The next stage involves predominantly "exploratory" behaviors. There are brief periods of gross bodily contact along with oral and manual manipulation of both animate and inanimate objects. Following this is a period of interactive play (in humans beginning in the second half of the second year). With monkeys this interaction consists of rough and tumble play, and chasing. This play increases in quantity so that it's more integrated or "mixed" and will eventually become clearly "aggressive". The wrestling, biting, and clasping found in this stage are means of establishing a dominance hierarchy.

The Harlows discovered that deprivation of peer contact, until after the stage of aggressive interaction, promoted the development of monkeys who failed to acquire

the necessary modulating and controlling systems needed later for effective social relations. Conversely, the Harlows came to the same conclusion that Freud and Dann did with their work with human children--that being in that contact with peers plays a compensatory role in social development when contact with a mother figure is atypical or lacking.

Some of the important factors in this research with rhesus monkeys were: first, there is a stagelike progression in the formation of the peer affectional system; second, contact with peers has compensatory effects when mothering is inadequate; third, isolation from peers for prolonged periods, even with adequate mothering, seems to alter the infant's capacities for subsequently relating to his peer culture.

Moving from animal to human research on peer interaction we find that during the years from two to five, social participation for children changes both quantitatively and qualitatively. With increasing age, children participate more frequently in parallel, associative, and cooperative activities and less frequently in idleness, solitary play, and onlooker behavior. Seeking praise and attention from peers also increases in absolute frequency during this period (Martin, 1964). Positive responses occur much more frequently than aggression (Walters, Pearce, and Dahms, 1957).

Charlesworth and Hartup (1967) studied the frequency of four kinds of generalized positive reinforcement in the peer interactions of nursery school children: giving positive attention and approval, affection towards others and personal acceptance, submission, and the sharing of tangible objects. Such behaviors occurred significantly more often with four-year-olds than three-year-olds, and situational variables were influential in that rates varied from classroom to classroom and from activity to activity. The most reinforcing children scattered their reinforcements widely, and the more reinforcements a child gave to others, the more he received for himself. Thus, reciprocity appears to be an important factor in childrens' relationships with one another.

Altruism increases only slightly during the preschool years. Children display helpfulness and sympathy much less frequently than they manifest simple positive social overtures. The basic social orientation at this age is still "egocentric" (Piaget, 1951).

The marked increases in sharing behavior occur between the nursery-kindergarten years and preadolescence (Handlon and Gross, 1959). Although social participation and cooperative play increase during the preschool years, so too does rivalry and competition. Leuba, (1933) found that two-year-old children were little affected by the



presence of other children working at the same task. But the output of three and four-year-olds was reduced by the distraction and rivalry elicited through the presence of others. By five, however, production is increased by having another child nearby. Presumably by this age, children are able to use rivalrous motivation in an adaptive way.

Older preschoolers participate in fewer but longer quarrels (Walters et al., 1957). Total frequencies of aggressive peer interactions tend to increase between the ages of two and four and then decline. But sex differences in aggression become more pronounced during the preschool period and modes of aggression also change. Screaming, weeping, hitting, and physical attack decline as verbal aggression increases (Jersild and Markey, 1935).

Flavell, Botkin, Fry, Wright and Jarvis (1968) discuss the changes occurring in child-child interactions during infancy and childhood. They believe these changes are closely linked with changes in sensory-motor capacities, cognitive skills, and the development of impulse controls. Young children have difficulty in taking the role of another. This capacity increases during middle childhood but is still not uncommon among preschoolers. Role taking appears to be a prerequisite for many mature peer social interactions. For example, it is inherent in cooperation

and altruistic exchanges. Increased role taking behavior does not cause altruism, or vice versa, but they do seem to occur together and may very well be functionally related.

A group of young children interacting with one another, is less likely to have obvious or pervasive norms than one composed of older children. Faigin (1958) noted some primitive norms in Israeli two-year-olds. She had six children in each of her groups and their ages ranged from nineteen to thirty-eight months. The children clearly differentiated "we" from "they" and defended each other when quarrels developed. Within each group, however, interest in role-playing activities was the most salient norm.

In studies of nursery school peer groups it has been found that the groups develop norms at least in the form of shared interests and common conventions. For example, a subgroup may be clearly aware that "we are the ones who are cowboys." There is less convincing evidence that they spontaneously produce the binding conduct-standards of older children. A young child is clearly responsive to rules, especially those coming from an adult, but children of this age do not yield consistently to group norms in common conformity tasks (Hartup, 1970).

A child's status in a group consists of the degree to which his peers wish to have something to do with him. Low acceptance sometimes implies indifference, and other times direct negative evaluation. Although peer acceptance scores are moderately stable among young children, there is still a significant relationship between age and fluctuation in friendship choices (Thompson and Horrocks, 1947).

Acceptance by peer group members is directly associated with such individual characteristics as friendliness, sociability, social visibility, and outgoingness (Hartup, 1970). In nursery schools, acceptance is positively correlated with a "friendly approach" and "associative behaviors", social visibility, peers' perceptions of friendliness, the nurturance of peers, and the frequency with which the child dispenses positive social reinforcements (Hartup and Coates, 1967).

Though they were dealing with elementary school children, Campbell and Yarrow (1961) found that popular children differed from unpopular children in the manner in which they described other children. Specifically, popular children tended to depict other children by using systematic, conceptual categories, and they were able to make particularly subtle inferences concerning the causes of other children's behavior. Such results may mean that popular children are simply brighter, but peer leaders

apparently have more "socially integrative" i.e. mature, ideologies than non-leaders. They are more socially sensitive and particularly accepting of other children. Thus popularity seems to be linked with the effective internalization of social norms. The popular child is not overly conforming or compliant, but rather appears to be willing to modulate his own behavior and to make necessary compromises toward the peaceful and efficient operation of the group.

If positive evaluation by the peer group is accomplished by effective socialization, then it could be predicted that popular children have more positive self-concepts than less popular children. However, research does not consistently confirm this hypothesis. Helper (1958) found the prediction true of boys but not true for girls. Reese (1961) believes that the relationship is curvilinear. Children with moderately high self-concepts were more accepted by their peers than those with either low or very high self-concepts. Marshall (1958) furthers the picture on self and peer acceptance by pointing out that self-acceptance is lowered by unfavorable feedback from peers, but no change follows positive feedback. Using global measures of "adjustment", Trent

(1957) listed six studies which all showed that popular children were better adjusted than less popular ones.

Piaget (1932) discusses the changes in responsiveness to peers within the broader context of changes in the child's conceptions of the "rules of the game." The child's consciousness of social rules is conceived as moving through three stages. The first is essentially a pre-social egocentric stage. During this time the child possesses no clear conception of formal social norms except for the rules and regulations laid down for him by adults. The rules in games are taken quite casually by children until they are in their sixth year. The children take great pleasure in imitating the ordered doings of their elders, but in practice they know nothing of the reasoning behind the rules' conception.

The second stage in the functioning of the social rules is marked by increasing social conformity and the increased importance to the child of social interactions with peers. He begins to regard rules as sacred and untouchable. The traditional rule is coercive and conformity is demanded of all. Piaget clearly suggests that conformity is directly related to age during this period.

Finally, at about age ten, the child begins to perceive rules as human artifacts. The rules are no longer external or coercive.

It is widely assumed that conformists are less intelligent and more rigid in their cognitive functioning than nonconformists (Crutchfield, 1955). Although this may be true for adults, research suggests that intelligence has little to do with peer conformity in children.

Crandall, Orleans, Preston, and Rabson (1958) found no significant relationship between peer compliance and IQ in either preschool or elementary school children. However, personality factors seem to play a major part in determining the autonomy or compliance a child will evidence in relationship with his peers. Personality and situational factors combined constitute the majority of variance in peer conformity in childhood.

In nursery schools the peer compliant children were generally those who were instrumental help-seekers and those who sought emotional support from their friends. Compliant children were not usually aggressive, dominant, withdrawn, achievement-oriented or approval-seekers (Crandall et al., 1958). All in all, the peer compliant children could not be described as passive-aggressive, authoritarian, or conformity-prone--characteristics which are often found with compliant adults. Rather they are outer-directed, and in Crandall's study the following statements, all of which can be seen as positive in some

settings, were used to describe the peer-compliant children as opposed to the child who was noncompliant:

- 1) Opinions are more readily influenced by others
- 2) Higher energy levels
- 3) More spontaneous and uninhibited
- 4) More distractible
- 5) More suggestible
- 6) More often seeks attention and praise from others
- 7) Warmer, friendlier
- 8) Shows more empathic sensitivity to others' feelings
- 9) More relaxed, easy-going
- 10) Less rigid or inflexible
- 11) Less of a perfectionist
- 12) Exhibits less self-pity
- 13) Finds it less difficult to admit mistakes

(In Musson, 1970, Vol. II, p. 415)

In this study it was the children who were identified as high in adult compliance who had the more stereotyped personality characteristics. These children were referred to as:

- 1) More cooperative, eager to please
- 2) Reacts less negatively to commands from others
- 3) Often a chronic worrier
- 4) More deferential to perceived superior persons
- 5) Less easily irritated by minor frustrations
- 6) Uses excuses and rationalizations less frequently
- 7) Becomes upset and anxious more readily

(Musson, p. 416)

These adult compliant children were also nonaggressive, but they tended to be much more withdrawn and achievement-oriented than did their more peer compliant counterparts. The peer compliant children are seen as

easy going, relatively non-aggressive and inclined to give and take. It is the adult compliant children who are more generally highly submissive and anxious. In this study, it was not until the children reached elementary school that the highly peer compliant children began to be less healthy than the adult compliant child.

The preceding data suggest that some important transformations may occur in the child's social development during the early childhood years. It appears that good social adjustment with peers begins with general responsiveness and sensitivity, including ready yielding to peer influences. Compliant behavior toward peers during the preschool period is actually associated with many personality characteristics that are associated with low peer compliance in later childhood. Thus, such data suggest that a period of high peer compliance in early childhood serves as a precursor to effective peer relations in later childhood and adolescence. However, as was mentioned previously, personality factors interact in very complex ways with situational factors in determining peer conformity. Taken alone, personality measures are likely to be only gross predictors of conformity proneness.

For the age group studied in this paper, the situational factors are not as important as they become in later years, simply because of the largely egocentric



orientation of preschool children. Indices such as large group size, task difficulty, the attractiveness of the influence source, status of the individual, commitment to the group, and incentive factors all play a major part in the conformity orientation of older children who are more affected by group processes. These factors in older (four and five-year-old) preschoolers can be seen, but by and large, they do not constitute a large enough impact to be included in the social adaptation domains of the Children's Adaptive Behavior Scale.

Existing studies clearly show that young children are responsive to peer models. Work by Hartup and Coates (1967) indicates that very young children will modify their prosocial behavior as a consequence of exposure to peer models. Nursery school children observing another child displaying an unusually large amount of sharing became more altruistic themselves.

Bandura, Grusec, and Menlove (1967) selected children from three to five years of age who were fearful of dogs, and exposed them to a "fearless" four-year-old model who exhibited progressively stronger approach responses toward a dog. The experimental children became significantly less avoidant than were the children in the control groups.

Hartup (1970) in summing up the current research on peer influence for children states:

"In sum, then, direct reinforcement from peers is a potent form of social influence during childhood. The effects of such social influence are evident in very early childhood. In addition, young children can serve effectively as the confederates of teachers and experimenters in bringing about behavior change through this medium." (Musson, 1970, Volume II, p. 429, para. 4)

### Moral Development

Infant obedience is one of the most fundamental problems in social and developmental psychology. It involves the origins of socialization--those processes that dispose a child to act in accordance with the rules, values, and prescriptions of his society (Stayton, Hogan, and Ainsworth, 1971).

Two processes, broadly labelled learning and identification are said to account for these phenomena. Social Learning Theory features the learning process which assumes that a child, in the process of being socialized, acquires a set of specific roles, attitudes, and responses that typically conform with social pressure. The child learns certain responses because he has been reinforced for them. Psychoanalytic Theory favors the assumption that the child identifies with certain persons and imitates the actions of those persons.

Regardless of the processes involved, a child usually acquires a willingness to comply with certain rules, roles,

and response patterns at the same time that he acquires the behaviors himself. Thus a distinction between the process of learning the values of the society and the disposition to follow them is not generally maintained. In addition, since the specific content of parental demands depends on many factors including family structure, ethnic heritage, social class and cultural milieu, it is the development of the willingness to behave as others wish him to that is the most important first step in a child's socialization. If a child lacks this tendency he may remain in many ways a stranger to his culture, regarding its rules and values from "an external point of view" (Hart, 1961).

The question of what must be done to a child to ensure the development of this willingness is also a central issue. In point of fact, since the majority of children do unflinchingly acquire this characteristic it is perhaps more to the point to ask what is done to a child to estrange him from society. By and large socialization is the predictable outcome in the ordinarily expectable social environment (Stayton, Hogan and Ainsworth, 1971); the major practical problem becomes one of preventing or correcting social and antisocial behavior in a deviant minority. Is there a fundamental antagonism between a child and his society-- between natural behavioral tendencies and cultural constraints?

One popular viewpoint is that man has evolved as a social species and that infants are genetically biased toward certain social behaviors. They are preadapted to an ordinary expectable social environment if that environment is similar to one in which the species evolved. Furthermore, adults, especially mothers, despite great cultural and individual variations, are also biased toward responding to the signals of their babies (Bowlby, 1969). This assumption implies a fundamental compatibility between man and society and presupposes that the ordinary expectable environment for a young child is both responsive and protective.

All of these assumptions support the common theme that a disposition to become socialized and hence obedient tends to develop in children reared in a social environment similar to that in which the society was adapted. This disposition does not require a rigorous and specialized training regimen. It is the deviation from the proper environment which may produce anomalies in social behavior that other experiences and training cannot change.

Stayton, Hogan, and Ainsworth (1971) conducted a study which endeavored to prove that a child's tendency to comply with demands is independent of his mother's specific socialization tactics, but instead relies heavily

on the mother's acceptance of the child, her cooperativeness, and her sensitivity to his signals.

In fact, these three measures of the mother's interactions with her infant were all highly correlated, and the infant's compliance to commands was strongly related to all three. Nevertheless, his compliance was not significantly correlated with his use of internalized controls. These depended more heavily on the freedom permitted him, and a higher IQ. The mother's sensitivity and general promotion of harmony in the mother-child relationship was the single most potent factor relating to the infant's compliance and to a lesser degree, to his internalized controls and IQ.

Stayton, Hogan and Ainsworth found that the earliest manifestation of obedience generally appears in the final quarter of the first year of life and consists of conforming to simple commands such as "No!" or "Come here!" Some infants may even sporadically show a self-imposed compliance by refraining from touching a heretofore forbidden object.

Piaget (1951) presents a common assumption when he speaks of the development of generalized attitudes toward authority when he wrote:

"Day to day observation and psychoanalytic experience show that the first personal schemas are afterward generalized and applied to many

people. Accordingly, as the first inter-individual experiences of the child who is just learning to speak are connected with a father who is understanding or dominating, loving or cruel, etc., the child will tend (even throughout life if these relationships have influenced his whole youth) to assimilate all other individuals to his father's schema" (Piaget, 1951, p. 207).

However, much recent research into these supposedly generalized schemas or traits of individuals points to more of a specificity to situations rather than a generalized attitude. Mischel (1968) found that when consistency is assessed on character traits like "rigidity", on sex-typed traits like social conformity, or on virtually any other nonintellective personality dimension, specificity was found repeatedly.

Also, considering that specificity seems to be high among the components of traits like dependency or self-control, it should not be surprising that the correlations between such traits tend to be modest at best for adults as well as children (Mischel, 1968). Nevertheless, a person's past behavior often can serve to predict his future behavior in similar situations, and many syndromes show considerable stability over long periods of time, especially when relevant stimulus conditions remain stable.

Hartshorne and May's (1928) Character Education Inquiry exposed thousands of children to situations where they were able to lie, cheat, and steal. Although the children were substantially consistent in reporting their

attitudes toward moral issues, their behaviors varied widely. If a child would cheat in one way, he might very easily cheat in a similar situation, but could remain staunchly upright when the situation is changed. Allinsmith in 1960 drew the same basic conclusions in his study of adolescent boys, stating that a person with a generalized conscience was a statistical rarity.

According to Hoffman (1970) all discipline techniques have power-assertive, love withdrawal, and inductive components. The primary function of the first two is motive arousal; and of the last, providing amorally relevant cognitive structure. When degree of arousal is optimal, the child attends to and is subject to maximum influence by the cognitive material. That is, focusing his attention on the harm done others as the salient aspect of his transgression helps integrate his capacity for empathy with the knowledge of the human consequences of his own behavior. This is the essential contribution of the discipline encounter to the child's moral development.

All discipline encounters have a great deal in common (Hoffman, 1970) regardless of the particular technique used, and most are not unidimensional or mutually exclusive, but occur in combinations. Some of the basic components of discipline techniques are as follows:

1) Any technique engenders a certain amount of anger in the child by preventing him from completing or repeating a motivated act. High-power techniques are most apt to arouse intense anger because they frustrate the child's need for autonomy as well as the completion of the act. They indicate to the child his degree of powerlessness in the world.

2) Any technique provides the child with a model for discharging anger and can also provide an object against which to discharge it.

3) What is learned depends on the stimulus to which the child is compelled to attend. Discipline techniques either directly or indirectly provide this focus. Induction is apt to focus the child's attention to the consequences of his actions for others.

4) To be effective, the technique must enlist existing emotional and motivational tendencies in the child.

The most persuasive of these tendencies is the child's need for approval (Hoffman, 1970) and requires a generally high level of affection. Disapproval disturbs the child's complacency and arouses the desire to prove his worthiness. The second emotional resource, empathy, adds to the aroused need for approval, the pain the child vicariously experiences from having harmed another--thereby intensifying his motivation to learn moral rules and to control his impulses.



An inductive technique that is other-oriented will not only direct the child's attention to another's distress, but will also communicate to the child that he was responsible for that distress. Without some communication of responsibility the child might respond empathically but dissociate himself from the causal act. Or he might resort to such defenses as denying the pain, minimizing it or charging hostile intent to the victim in order to justify it. These evasions are common with a very young child whose empathy is a direct emotional response to the other's affective state, often with no accompanying understanding of what caused it. This may be why the preschool child, who frequently responds empathically to the children in distress (Murphy, 1937) rarely does so when he is the one who caused the distress; and if he does respond empathically he is seemingly oblivious to his own role.

Thus, at a fairly young age a child is capable of both empathy and the awareness of being responsible for another's distress. He also knows the difference between accidental and intentional, and provoked and unprovoked acts. These responses do not naturally occur together, however, especially in the emotionally charged context of the deviant act (Hoffman, 1970).

Given the optimal arousal conditions for engaging the child's interest, the resulting coalescence of empathy

and awareness of being the causal agent of the other's distress produces a response having the cognitive (self-critical) and affective properties of guilt. Repeated experiences of this kind help sensitize the child to the human consequences of his behavior, which then come to stand out among the conglomeration of emotional and other stimuli in the situation (Hoffman, 1970).

Aronfreed and Paskal (1966) found that a child must first have the experience of observing the distress of others in close association with his own direct experience of distress. This experience results in his own empathic distress becoming conditioned to cues from others indicating their unhappiness. Then he must acquire specific overt acts which can be used to relieve the distress of others as well as his own empathic distress.

Altruism or self-sacrificing behavior can be enhanced by first attaching, through continuous association, positive affect in the child with expressions of joy in the receiver. The expressions of joy become stimuli for the arousal of positive affect in the child and thereby acquire the power to reinforce his altruistic acts.

Dienstbier, Hillman, Lehnhoffs, Hilman, and Valkenaar (1975) present two approaches to the study of conscience development. The first is cognitive which is concerned with moral reasoning and decision processes; and the

second applies to social learning which is concerned with the emotional states and behaviors associated with self-control in the face of temptation.

Behavior associated with self-control in the context of temptation is heavily influenced by negative emotional states usually characterized as anxiety, fear, guilt and/or shame.

The associations of negative emotional states with decisional and behavioral processes depend heavily on the causal attributions that are made about the source of the negative emotions during socialization experiences. Dienstbier et al. 1975 found that social and situational influences, although they may be only temporary, play an important role in forming causal attributions; different physical and verbal socialization techniques provide different information relevant to the child's causal attributions. In the face of temptation, the impact of the emotional response on behavior will be heavily influenced by the still malleable beliefs held about the causal origins of the emotional response. When detection of transgression is not possible, a negative emotional response in the face of temptation is necessary but not sufficient for the inhibition of transgression. In order for the emotional arousal to provide an inhibitory function, the individual must identify his emotional discomfort

as due to a relevant cause, such as the transgression itself, and its' implications to the self-image, etc., rather than as due to an irrelevant cause, such as fear of punishment. With maturity, the control of emotional attributions passes from the socializing agents to the individual, and becomes related to the level of moral development, although situational and social cues continue to play an important role.

Lykken (1974), Schachter and Singer (1962), and Schachter and Latane (1964) all present evidence to the effect that emotional arousal is necessary as an important component in the avoidance of responses with aversive consequences. An increase in arousal facilitates avoidance and a decrease attenuates avoidance. However, while necessary, this arousal was not always sufficient in preventing transgressions.

Mowrer (1950), an avoidance learning theorist, suggests that once the emotional response which has developed to the cues signalling an aversive event is strong enough to prevent that event, it leads to the reinforcing reduction of the negative emotional state. Thus emotional arousal in anticipation of punishment for a potential transgression should lead to the avoidance of that behavior. Aronfreed (1968) suggests that anxiety becomes conditioned specifically to the behavioral and cognitive precursors of the act.

Dienstbier et al. (1975) believe most normal children experience some emotional arousal following transgression and detection by a disapproving adult. The child knows that the adult disapproves; he can recall previous scoldings; he'll be uncertain as to the outcome; and he'll fear that the adult will emphasize the discrepancy between the child's behavior and higher standards. Socialization procedures that draw the child's attention to the transgression rather than to the aftermath (confrontation and punishment) facilitate the attribution of arousal to the act of transgression. Discussions direct the child's attention to the misdeed itself and the behavioral standards he has violated. This association of the attribution of negative emotional arousal to the transgression, leads the child to later avoid the transgression itself.

Responses by socializing agents that draw a child's attention away from the act and to the pain increase the chances that the child will attribute his emotional discomfort exclusively to confrontation with the socializing agent. In a future similar situation, the child may experience high emotional arousal, but by attributing his arousal to fear of punishment, he'd tend to resist temptation only if he thought that he would be detected.

Work by Henshel (1971) cited in Dienstbier et al. (1975) indicates an increasing correlation between honesty assessed verbally and resistance to temptation in a cheating task. Henshel suggested that behavior is not dependent as much on simply "knowing" what is right as it is on "feeling" what is desirable.

Physical punishment is usually accompanied by parental expressions of anger, encouraging the same kind of feeling in the child. When all other things are equal, the more severe the punishment, the more the emotional arousal, and the more the resistance to deviation in the future, unless the more intense punishment causes different attributions about the source of the emotional discomfort associated with the situation, or unless it distracts from other administered messages relevant to emotional attribution.

There is a high degree of dependency on immediate situational cues in attributing causation of emotional arousal. Thus it's likely that individuals who make causal attributions about the internal origins of arousal (guilt) in one situation will find that either past experience or present cues lead them to make more external attributions regarding emotional causality in other temptation situations. So, although guilt is usually assumed to accompany resistance to temptation, it does not always do so (Burton, Maccoby, and AllinSmith, 1961).

Children who receive a mild threat to inhibit an act will take more personal responsibility for resisting temptation than will severely threatened children; they will therefore experience more cognitive dissonance over resisting temptation (Aronson and Carlsmith, 1963).

In like manner, unnecessarily strong positive inducements lessen the intrinsic motivation an individual may have had to perform the task in the future (Deci, 1972).

Both the dissonance and the overjustification research provide support for the theory that individuals usually consider all available evidence in assessing the motivation underlying their own behavior, just as an observer looks for all the forces relevant to another's behavior in making inferences about that person's motivation. Tangible reinforcement or threat of punishment reduces attributions of an internal cause of positive and negative emotions. A large reward will make the pleasure of the task to be attributed to the reinforcement, and not to the task, whereas punishment will be associated with the social agent and not the transgression.

Piaget (1932) postulated that the development of moral judgments corresponds with the development of more general cognitive capacities. At first the child is inflexible, believing that behavior is totally right or wrong based on the outcome of an act regardless of the

intent of the actor. He believes in the concept of imminent justice--that punishment will automatically follow transgression. With maturity and cognitive flexibility, moral judgments become less rigid with rules seen as changeable depending on other constraints of the situation. This flexibility comes about through active participation in society and through rule making and changing. Increased empathy comes about through interaction with peers.

One's stage of moral development does not determine whether an individual will experience arousal, but rather once such arousal is experienced, the stage will influence what the arousal means, and therefore whether it's relevant to the available behavioral options (Kohlberg, 1958).

#### Self-Esteem

While the emphasis so far in this paper has been on the development of the child's social and moral development, one final area must be considered before the research design is discussed. To get along with others, and to learn and comply with social mores are primary goals in the development of adaptive behavior. But an individual can accomplish these and still be miserable about his own self. To make the quality of any one person's life as optimal as possible, we must consider his own personal self-image. This brings us to the topic of self-esteem.



The conditions that lead an individual to value himself and to regard himself as an object of worth are: parental warmth, clearly defined limits, and respectful treatment (Coopersmith, 1967).

Definite and enforced limits are associated with high rather than low self-esteem. Families which establish and maintain clearly defined limits permit greater rather than less deviation from conventional behavior and freer individual expression than do families without such limits. Families which maintain clear limits utilize less drastic forms of punishment and they exert greater demands for academic performance and excellence.

Parents who have definite values, who have a clear idea of what they regard as appropriate behavior, and who are willing and able to present and enforce their beliefs are more likely to rear children who value themselves highly. Parents who act this way apparently have less need to treat their children harshly, and are viewed with greater affection and respect by their offspring.

In summary, the imposition of limits serves to 1) define the expectations of others; 2) define the norms of the group; 3) define the point at which deviation is likely to evoke positive action; 4) enforcement of limits gives the child a sense that norms are real and significant;

5) they contribute to his self-definition; and 6) they increase the likelihood that the child will believe that a sense of reality is obtainable.

Individuals with high self-esteem who are reared under strongly structured conditions are more independent and more creative than persons reared under more open and permissive conditions. They are also more likely to be socially accepted as peers and as leaders by their associates. They are more capable of expressing opinions and accepting criticisms.

This overview presents only some of the elements that must be considered in designing an appropriate adaptive behavior scale for children. As the level of information on the dynamics involved in social and moral development expands, revisions should be sought that will further increase our ability to measure such a complex and vital phenomenon.

### CHAPTER III

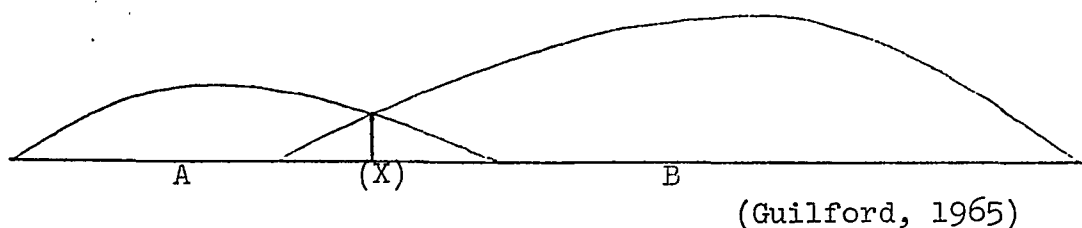
#### Research Design

Implicit in the study of adaptive behavior is the assumption that it is a multidimensional phenomenon, and that each individual can be described in terms of a set of scores, each score designating his relative position in one of several dimensions that can be plotted on an individual profile.

It is possible to arrange specific behaviors within each dimension, or single behavioral domain such as the two being developed in this research -- Social and Personal Responsibility. The ordering of these behaviors starting from the simplest and going to increasingly more complex is an essential principle of the Guttman simplex model. Where separate classes of individuals have different means in their attributes, but overlapping distributions on a continuous scale, there is a point (X) on the scale where the overlapping distribution curves intersect. At that point, the probability of one individual (A) having attribute A equals the probability of also having attribute B. Individual (B) who has a higher mean of attribute B would at that point also have an equal amount of attribute A.

Distribution for  
attribute A

Distribution for attribute B



Beyond point (X) the probability of the individual belonging to group B is greater than .5; below (X) the probability of the individual belonging in category B is less than .5. Accordingly, membership in categories A or B can be predicted (Guilford, 1965; Nihira, Foster and Spencer, 1968).

This simplex model is a useful tool for discovering structural or processual relationships within a set of measurements. The basic hypothesis is that two features that are closer to each other relationally should also be closer in a statistical sense of empirical correlations. The simplex structure refers to a simple order of measurement that may be defined in terms of time, physical space, or any other conceptual scheme in a matrix form. Typically, the largest correlation coefficients are clustered along the main diagonal of the matrix where features are closer together, and taper off to the lower-left and upper-right corners of the matrix.

Nihira et al. (1968) remind their readers that individual differences among the retarded differ considerably in nature and content at different degrees of retardation. One of the serious problems of any single score representation of obscure psychological constructs, e.g. IQ or SQ, is that it tends to be interpreted as measuring the same thing over a wide span of age and ability, which is quite fallacious. The emphasis in the development of the Children's Adaptive Behavior Scale is to describe more homogenous psychological constructs in such a way that complex behavioral variations can be readily understood.

A profile score of a child's abilities among domains is more valuable to a clinician or rehabilitation worker than a vague, global IQ of indeterminate content. The grouping of developmentally disabled children based on analysis of individual profiles will provide a sound basis for diagnostic treatment classes. Thus, eventually, when all domains are completed, a multiple regression analysis will be applied to determine the best weighting systems for combining these scores. The resultant description system will enable predication, on an a priori basis, of a child's probable adaptability in settings in which the degree and type of critical demands have already been delineated.

Nihira et al. (1968) discuss two assumptions involved in the attempt to measure adaptive behavior. The first is that every person has a unique pattern of adaptive behavior and this very uniqueness implies differences from others. The pattern will be similar to some others, but in essence will be different from all others.

The second assumption is that there are no absolute standards for adaptive behavior. There is no perfect score any more than there could be a zero score except in relation to the coping skills of other individuals. Thus comparison is a central factor. This means that an objective definition of adaptive behavior must be stated in terms of meaningful properties that commonly can be observed among most of the retarded population. This act of comparison requires an analytical process for it is impossible to compare one person-as-a-whole to another. Even the observation of a single individual requires an analytical process in order to know him by his different characteristics or properties. The abstractions of a person do not destroy his totality, but due regard must be given to his unity. Nevertheless, analysis of some form or another is necessary if the individual is to be understood or described. The difficult resynthesizing of different characteristics back into a meaningful whole is also a crucial part of the entire process of description.

Multivariate analysis encompasses a general class of inquiries that attempt to describe complex behavioral phenomena in terms of a small number of separate dimensions i.e. separate in the sense that each dimension represents a conceptually and operationally different aspect of the individual. This method attempts to identify the least number of common denominators which adequately describe the nature of the population in question. It prevents the unnecessary proliferation of psychological terms and concepts which would result in conceptual redundancy. Through the identification of a set of dimensions which provide a quantitative description of the nature and variation of human behavior, multivariate analyses provide a means of systematically observing the consistencies and patterns of behavior.

An illustration of the expression "consistencies and patterns" of behavior can be made using body temperature as the area to be studied. Body temperature can be measured in a variety of ways but empirically it has been found that there is a high degree of "internal" consistency among the various measurements for each person and between individuals. Thus, it's not necessary to perform more than one measurement operation or to consider these measures as independent phenomena.

Continuing with body temperature as an example, it is often used as an indicator of physical maladjustment, but by itself proves nothing more than that an individual has a normal or abnormal temperature. Just as most clinical diagnoses are based on the existence of a group or pattern of symptoms, a multivariate experiment deals with a pattern of behaviors, rather than with the relationship between the isolated phenomena. The relationship between different measures of body temperatures is an example of classical univariate analysis. Multivariate analyses would more properly be used to understand the patterns found in combining abnormal temperatures with other consistently abnormal symptoms e.g. nausea, convulsions, etc.

The application of multivariate analysis to the study of adaptive behavior requires the discovery of factors that can be replicated in two or three different samples. Hypotheses about the nature of each of these factors are then formed, and the experiment is then continued with the focus turned to new factors which might be pertinent to the ongoing conceptual framework. In this manner, concepts are evolved by observing the patterns which gradually emerge from the search for essential structure in a great array of variables. This method has proved to be quite useful in establishing new domains of knowledge where few theories have been established.



In these past few pages several important criteria have been mentioned which must be considered in selecting an appropriate statistical measurement device for analyzing the obtained data in the Social and Personal Responsibility Domains. The first of these is the necessity of ordering the data so that each individual item is more difficult to pass than the one preceding it and more easily passed than the one which follows so that a Guttman Analysis can be used. The Guttman Analysis yields information on how to reorder items into a developmental progression, e.g. a summed score of four reflects the ability of most children with that score to perform the first four items. Thus, summed scores predict certain patterns of behavior that are consistently found to follow a developmental progression. With this statistical assurance that a summed score will usually predict the specific achievements of an individual in any particular section, it is possible to plot this information on a profile.

Further, it has been discussed that an individual profile, as a means of recording information about an individual, is far more descriptive than any single global score. A profile enables a clinician or program planner to carefully observe the different areas of positive and negative performance for a single individual without requiring an item-by-item search.

Finally, it is essential to determine whether individual sections or items discriminate between handicapped and non-handicapped children. The Guttman simplex model is capable of predicting membership to certain different groups by recording the probability of an individual (on the basis of his summed scores) belonging to one group or another.

Nihira, Foster and Spencer (1968) in discussing their own use of multivariate analyses in the development of the original Adaptive Behavior Scale published in 1969, cautioned that one important consideration in designing such an analysis is that the variables to be included cover the domains of investigation as adequately as possible. Their telling comment in this respect was that "In factor analysis one gets what one puts into it (if one puts garbage into a computer, he gets processed garbage.)" Page 625.

In keeping with this admonishment this investigator has reviewed much of the current research in the areas of a child's early social and moral development (viz. Chapter II) and has searched the major areas of behaviors recognized by behavior rating scales currently used in the United States in order to ensure an adequate sampling of behaviors.

The result of this effort has yielded a Socialization scale which was designed to match the scale design already

in use in the AAMD Adaptive Behavior Scale (1974) in as many ways as possible in order to 1) ease both the administration of the scale for practitioners who are already familiar with the established ABS, and 2) to enable the use of both scales to better understand individuals whose behaviors overlap the characteristics considered in each measurement device.

Again in keeping with the existing ABS, items were designed to measure observable and relatively specific behaviors in order to minimize the use of inferential thinking on the part of the users. In this way the scale may be administered by untrained observers such as parents, ward attendants, and others who observe the daily activity of the children.

#### Children's Adaptive Behavior Scale

##### Pilot Testing

Following the initial development of the scale, it was administered to two infants or children for each of the following age groups by months: one, three, six, nine, twelve, eighteen, twenty-four, thirty, thirty-six, forty-eight, sixty, and seventy-two (a sample of twenty-four children.)<sup>1</sup>

<sup>1</sup> These children were enrolled in a United Fund Day Care Center known as the Neighborhood House in Columbus, Ohio.

The Social and Personal Responsibility Domains (see Appendix A) were designed to measure the acquisition of adaptive behaviors in these two areas. One Negative Social and one Negative Personal Responsibility scale was also included in this pilot testing effort in order to tap some of the possible maladaptive socialization behaviors that are also a concern to parents, clinicians and program planners. Although these negative behaviors are not the primary focus of this research, it was felt that the contact with so many parents of young children could provide a ready means of accumulating information which will be dealt with in a future Part II, or Social Maladaptation section of the CABS.

Valuable data on maladaptive behaviors was obtained by asking parents to describe the kinds of things their child did that they found annoying or hard to live with. This data will be included with that collected during the field testing of the scale and will be reported in Appendix F, since it has no bearing on the major focus of this research which is the refining of the adaptive socialization behavior domains. The question "What kinds of things does your child do that you find annoying or hard to live with?" was included in the Developmental History page of the field tested scales (see Appendix C).

Another goal in the pilot testing effort was to collect data on alternative adaptive responses of the children which were not covered by the pilot test items. For example, it was discovered that many older children do not cry when they are unhappy -- they pout or tell you how they feel. This kind of information coming from the pilot testing was used to broaden the wording of items so that the basic intent of the question was met for both younger and older subjects. For example, the item was reworded in the field tested scale to read, "Cries, pouts, or tells you when he's hurt or unhappy."

The major purpose of the pilot testing was to ensure that items were ordered in such a manner that the children's adaptive functioning could be measured, and to ensure that the parents being interviewed could understand the items as they were stated. The items were then examined with respect to their hierarchical nature in assessing adaptive functioning, and rearrangements were made to correct faulty ordering. Many items were found to be difficult for the parents to understand and rewordings were made to minimize this occurrence. The rewording was made on the basis of what the investigator had had to say to the parent to make the item clearer during the interview. Some items were broken down into two or more separate, new items in order to more adequately reflect

a stepwise developmental pattern. New items were also added which were directed at tapping important areas which had heretofore been missing from the scale, such as each child's ability to show affection toward other children or to animals. Finally, some positive items and most of the negative items on this original scale, were excluded because they were found to be either ineffectual or were set aside for different areas of future CABS development where they were more appropriate.

The original, pilot tested version of this scale had three different forms for social development. The first was designed for children up to one year of age. The second was used for children from one to two years of age, and the third was for children from two to six years of age. In order to simplify the administration of the scale, and to make its design more closely resemble that of the existing Adaptive Behavior Scale (1974), these age divisions were eliminated in the subsequent scales.

Following is a list of the pilot tested scale items designed for children up to one year of age with a brief discussion of why and how they were or were not changed on the basis of pilot testing results:

## Social Development

### Children Up To One Year Of Age

Item 1. He cries when he's unhappy.

This item adequately reflected the behavior of young infants, but was inappropriate for older children who either pouted or told their parents when they were unhappy. In order to cover the full age range the item was reworded to read, "Cries, pouts, or tells you when he's hurt or unhappy."

Item 2. He watches moving things.

Since some parents were unclear as to how often the child was supposed to exhibit this behavior (especially the older children) the word "sometimes" was added. This addition, or a similar quantitative one, was made for a number of items to make it easier for parents to respond. This item was changed to read, "Sometimes watches moving things."

Item 3. He watches people when they move around.

This item was changed to include "sometimes" for the same reason as was noted above. "Sometimes watches people when they move around."

Item 4. He smiles or coos at someone who talks or smiles at him.

This item was too heavily directed toward the younger

age groups. It was broadened to read, "Smiles or tries to talk to you when you smile and talk to him."

Item 5. He giggles or laughs when someone he knows tickles him.

Since all of these items were given to parents who are supposed to be highly enough involved with their children to be able to answer questions about them, the third person wording was changed to second person form to read, "Giggles or laughs when you tickle him."

Item 6. He lifts his arms so he can be picked up.

Reworded to read, "Lifts his arms for you to pick him up."

Item 7. He sometimes likes to be held, carried, or swung in circles.

Being carried is practically synonymous with being held. It was therefore deleted. The item then read, "Sometimes likes to be held or swung in circles."

Item 8. He likes his mother better than people he doesn't know as well.

This item was designed to tap a child's preference for some people. A failure was meant to highlight an undifferentiated involvement with people that was on only one emotional level. Some children reportedly preferred their fathers or a sibling over their mother so the item was changed to read, "Likes you better than people he doesn't know as well."



Item 9. He stays close to his mother in strange places.

This item too heavily tapped the behaviors of the younger and/or more introverted children. It was deleted because it did not appear to reflect a necessary and separate behavior in social adaptation. Also its purpose was generally met by Item 8.

Item 10. He's shy with strangers at first.

The item was too reflective of only the younger and/or more introverted children. Its purpose was also generally met by Item 8.

Item 11. He tries to get people to notice him by trying to talk, banging on something, or smiling.

For administrative clarity and to better cover the behavior of older children this item was reworded to read, "Tries to get you to notice him by smiling, calling you, or showing off."

Item 12. When he's in trouble he calls, crawls, or walks to someone for help.

This item was reworded to read, "Calls or comes to you for help when he's in trouble."

## Social Development

### Children From One To Two Years Of Age

Items on the one to two year old social scale that differed from the scale designed for children up to one year of age were as follows:

Item 11. He tries to get his mother to notice him by calling her, showing off, or climbing onto her lap. It was revised to read, "Tries to get you to notice him by smiling, calling you or showing off."

Item 12. He enjoys being with other children.

This item was made a little more concrete by changing it to, "Is often loving toward brothers or sisters or to family pets."

Item 13. He sometimes won't do what his mother tells him to do.

This was reworded to read, "Sometimes resists when you tell him to do something."

Item 14. He shows he likes you by hugging or kissing you.

This item was combined with Item 15 of the scale for children from two to six years of age to read, "Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers."

Item 15. He calls or goes to someone for help when he's in trouble.

Revised to read, "Calls or comes to you for help when he's in trouble."

### Social Development

#### Children From Two To Six Years Of Age

The items in this scale which have not been reported in either of the previous age group scales are:

Item 12. He usually plays well with other children.

The word "He" was deleted.

Item 14. He talks with other people and doesn't interrupt all the time.

This item was deleted because it was presumed to reflect the same general information which was gleaned from Item 4.

Item 16. When he sees someone crying he watches them or looks serious. Changed to: "Becomes serious or watchful when he sees someone crying."

Item 17. He comforts an unhappy person by talking, touching, or offering something to make him feel better.

Changed to: "Comforts an unhappy person by talking to him or offering something to him to make him feel better."

### Personal Responsibility

Item 1. He usually stops what he is doing when someone says "No" or "Don't".

Reworded to read, "Usually stops what he's doing when you say 'No' or 'Don't' to him."

Item 2. He remembers not to touch things he's been told to stay away from.

Reworded to read, "Usually remembers not to touch things he's been told to stay away from."

Item 3. He helps others do things like carrying things for them, or putting things away.

Reworded to read, "Helps you do things like carrying things for you, or putting things away for you."

Item 4. He lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner.

The word "He" was deleted.

Item 5. He stays away from dangerous things like medicines, moving cars, or fire.

The word "He" was deleted.

Item 6. He gives reasons for why he did something wrong.

Reworded to read, "Gives excuses for why he did something wrong."

Item 7. He frowns, scolds, or tattles when someone else does something wrong.

The word "He" was deleted.

Item 8. He's able to wait for his turn with a toy or at a game.

Reworded to read, "Waits for his turn with a toy or at a game."

Item 9. He usually shares toys and other things well.

Since most parents had trouble interpreting the degree to which his or her child shared his toys, the item was changed to a more stringent one, "Generously shares his toys without being told to do so."

Item 10. He follows the rules of a game when he plays with other children.

The word "He" was deleted.

Item 11. He returns what he has borrowed.

The word "He" was deleted.

Item 12. He does jobs he's been told to do without help.

This item was confusing because the question of "how often?" came up repeatedly. Therefore it was split into two new items. "Usually dependable; he does jobs he's been told to do without help." "Very dependable; has jobs to do every day which he does without being reminded, like making his bed or picking up his clothes."

Item 13. He apologizes or tries to do something nice when he has been rough or unkind to someone else.

Shortened to "Apologizes or tries to do something nice when he has been unkind."

Item 14. He tries to get help for a child who is hurt or crying.

The word "He" was deleted.

Item 15. He has jobs to do every day which he does without much reminding like making his bed. (See Item 12.)

#### Negative Social Behaviors

These items were rather naively stated in opposite terms to the ones in Social Development. They were confusing and elicited no new information. Every item was deleted.

#### Negative Personal Responsibility Behaviors

There were only three items on this scale which were not direct opposites of the positive Personal Responsibility scale items. All of the directly opposite items were deleted. The three items were:

Item 3. Punishment seems to have no effect on him.

Item 5. He often has temper tantrums.

Item 13. He tries to get other children to do bad things.

All three of these items were able to elicit enlightening responses from the parents. The first two were more reasonably seen to fall in the Part II, Maladaptive Behaviors Section of the CABS and will be reserved for that use in later scale development. The third item was reworded to read, "Usually tries to help children do the right things."

The Guttman analysis available through The Ohio State University Computer Service has one important limitation that also made further revisions on the initial pilot test scale necessary. The computer program, in its present form, could not handle scales with more than twelve items. Therefore, the Social Behaviors Scale was separated into three sections, i.e. Personal Awareness, Body Contact, and Personal Interaction. The Personal Responsibility items were separated into two sections, i.e. Moral Development and Altruistic Behaviors.

A zero item was added to each section of the scale in order to tabulate the number of subjects who were unable to pass any of the items. With the inclusion of this zero item, the highest possible number of adaptive behaviors was limited to eleven in a section.

There were a number of new items in the scale, many of which came from the existing Adaptive Behavior Scale (1974), which were included on the basis of recommendations

made by Dissertation Committee members. These are:

Recognizes his mother.

Recognizes other family members.

Recognizes people other than family.

Knows the names of people close to him like friends and neighbors.

Has information about others such as their job or their relationship to him, e.g. teacher, sister.

Child often plays by himself; he does not always depend on others to keep him occupied.

Likes to show you or tell you about things that interest him.

Usually plays well with other children..

Asks if he can help you do things like cooking or cleaning.

Comforts an unhappy person by talking to him or offering something to him to make him feel better.

See Appendix B for the resulting Personal Awareness, Body Contact, Personal Interaction, Moral Development and Altruistic Behavior sections of the field tested Social and Personal Responsibility Domains.

#### Field Test

CABS Social and Personal Responsibility field test Domains were administered to a total of sixty-two children who would be considered "at risk" (see Table 1). The following subjects were sought:



Table 1

Experimental Subjects

Group	Ages by Months												Total Number of Subjects
	1	3	6	9	12	18	24	30	36	48	60	72	
Down's Syndrome	1	1	1	1	1	1	1	1	1	1	1	1	12
Cerebral Palsied	1	1	1	1	1	1	1	1	1	1	1	1	12
Premature	1	1	1	1	1	1	1	1	1	1	1	1	12
Low Apgar	1	1	1	1	1	1	1	1	1	1	1	1	12
Developmentally Delayed			1	1	1	1	1	1	1	1	1	1	10
Autistic									1	1	1	1	4
<u>Controls</u>	<u>4</u>	<u>4</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>62</u>
Totals	8	8	10	10	10	10	10	10	12	12	12	12	124

First, one child with a low Apgar score at birth will be included in each experimental group. Virginia Apgar in 1953 devised a scale to rapidly identify those infants needing immediate special care. The scale is a simple gross appraisal of each of five aspects of vital functioning (heart rate, respiration, muscle tone, reflex responsiveness, and skin color) each rated on a three point scale of 0, 1, or 2 -- one minute and five minutes after birth. The maximum score obtainable is ten, but a score of eight or above is considered to indicate a "good" condition (Apgar, 1953). Even the difference between "good", a score of eight, or "perfect", a score of ten, has been found by Lewis, Bartels, Campbell, and Goldberg (1967) to have predictive value in differentiating attentive behavior during the first year at least of life.

Second, a child who would normally be considered mentally retarded because of the appearance at birth of a physical impairment thought to produce retardation will be included in each experimental group. The writer has selected Down's Syndrome as a recognizable entity which will fit these requirements. Alternately referred to as Trisomy-#21 Anomaly, this syndrome constitutes the largest number of cases accompanied by retardation. It occurs in all strata of society, and its symptoms are

usually clearcut. In 1959 the presence of a third chromosome matching one of the small pairs designated as #21 was discovered as the genetic base (Robinson and Robinson, 1965).

In facial and bodily structure, affected children closely resemble each other. The overall symptoms are usually strikingly similar and the following shortened list of symptoms occur frequently, although all are rarely found in a given child.

- 1) Intellectual impairment generally in the severe or moderate ranges of retardation.
- 2) A small skull, flattened and shorter than it is wide; underdevelopment of the nasal bones of the skull resulting in a flat bridge and shallow, small, eye sockets; slanting eyes; and small chin and ears.
- 3) Eye abnormalities, including inflammation and conjunctivitis; poor vision; irregular pigmentation; epicanthal fold at the inner corners of the eye; pupils unusually responsive to atropine.
- 4) Delay in eruption of the teeth; small teeth in abnormal and maloccluded alignment.
- 5) Large, fissured tongue protruding from a small mouth, often appearing soon after birth.
- 6) Short broad neck with loose skin.
- 7) Short, broad, flat, square hands and feet; a short fifth finger which may have only one crease instead of two.

- 8) Sparse, fine, straight hair.
- 9) Congenital heart disorders.
- 10) Underdeveloped genitalia.
- 11) Short stature, especially because of retarded growth during the first three years.
- 12) Skin lacking in elasticity.
- 13) Muscular hypertonia producing a prominent abdomen in a young child. Poor coordination.
- 14) Speech disorders and a low-pitched voice.
- 15) Metabolic irregularities.
- 16) Chronic myelogenic leukemia.

(Robinson and Robinson, 1965, 97-99)

The third group of children who were studied at each age level are those affected by cerebral palsy or a related disability. Although cerebral palsy is by no means always associated with mental retardation, it has been estimated (Heilbrun, 1956) that about 50% of cerebral palsied children have estimated IQ's of 70 or below. But regardless of the intellectual capacity of cerebral palsied children, their handicaps in motor activity and communication are oftentimes severe enough to delay or disable children during the developmental years in their coping behaviors.

Cerebral palsy is characterized by a disorganization of motor control which results from damage to the central

nervous system. It refers to a variety of motor defects, with or without athetosis (uncontrolled waving of the limbs) which appear at birth or in early childhood. Approximately 65% of children with CP have one or more limbs which are rigidly immobilized by constant muscular contractions. This "spastic" group is normally classified according to the number of limbs involved, i.e. monoplegia, hemiplegia, triplegia, and quadriplegia, Another 30% of cases are afflicted with "dyskinesia" which refers to abnormalities in the amount and type of motor activities. Included are chorea (rapid, jerky, involuntary movements) and athetosis (slow, wormlike, purposeless movements exaggerated by voluntary action). The final 5% of the cases of cerebral palsy have an impairment of postural activity and walking known as "ataxia". (Robinson and Robinson, 1965, 168-169)

Premature infants, those born with a birth weight of less than 5.5 lbs., or 2,500 grams, constituted the fourth group of "at risk" children included in the study population. Cecil Drillien (1964), deHirsch, Langford and Jansky (1965), and Braine, Heimer, Wortis and Freedman (1966) have all researched the area of premature births as they are associated with later developmental handicaps and have bolstered each others' findings

that many premature infants have coping difficulties which might well be reflected by deficits in adaptive behavior.

Drillien (1964) studied 110 children weighing three pounds or less at birth and found that 1) only 9% or 66 of these children who were tested scored at 100 or over on intellectual tests; 2) over one-third were ineducable in normal schools because of physical or mental defects; 3) over one-third were retarded children in normal schools; 4) less than one-third were doing classwork appropriate to their ages; and 5) restlessness and hyperactivity were reported in about 70% of the children.

deHirsch et al. (1965) found that prematurely-born children seemed to show a more primitive central nervous system pattern, a relatively lower level of neurological integration, and a more diffuse ego organization than maturely-born children. The prematures did least well on language and scholastic tests which required a high degree of differentiation and integration when given at kindergarten, first and third grades.

Finally, Braine et al. (1966) replicated the finding of lower intellectual performance for premature children. At 13½ months, they found seventeen DQ point differences for males and eleven DQ points less for females than for full term births.

The fifth experimental group are those infants who at six months and all subsequent age groups have been found to be delayed in development. The younger children in this sample were identified by pediatricians, and the older children were selected by teachers of early pre-school or training classes for handicapped children.

In summarizing the work of many investigators in the field of infant testing, Escalona and Moriarty (1961) reported the following conclusions: 1) Scores obtained during the first six months do not predict later intelligence; 2) Infant tests are most effective in discriminating between those who will later show neurological and intellectual deficit and those who will not. The authors refer to intelligence as the result of a continuous stream of interactions between the individual and his physical and social environment. A manifest deficit in sensorimotor functioning would impinge on each adaptive transaction with the environment and would limit or distort the development of intelligence in that child. It is because of this latter assumption that developmentally delayed children will be included in the sample.

The sixth and final group of children included in the experimental group of "at risk" children were

those with autistic-like symptoms. Children with such behavior patterns were included in the three, four, five, and six year groups.

As reported by Kessler (1966), autistic children often look normal or even bright because of a characteristic alert and thoughtful expression. Their motor coordination also seems normal. However, their pathology is evidenced through the avoidance of eye contact and lack of visual or auditory response to others. In essence they appear deaf and blind to people.

In infancy, mothers report the lack of a social smile or any sign of pleasure in the mother's company. There is no reaching out, no separation anxiety, and no particular reaction to strangers. As babies, autistic children make few demands and are content to be left alone. They display no imitation of gestures or sounds, and remain uninterested in social games like peek-a-boo and patty cake. The failure to imitate gives rise to the failure of speech for purposes of communication. What language the child does use may have strange, parrotlike qualities. The child utters repetitious, stereotyped phrases and engages in no conversational give-and-take.

The autistic child's response with objects is much greater than to people and language, but even in this



respect he is more restricted than a normal child.

The manipulation of an object is an end in itself; its use does not interest the child.

Another characteristic of autistic children is their extremely strong desire for the maintenance of sameness. The child's desire to live in a static world makes it difficult to teach him. Although much more can be said about the strange behaviors found among autistic children, the characteristics that have already been mentioned are sufficient to provide for their inclusion into the experimental group. The symptoms of autism are recognizable although the number and severity vary widely; and the subsequent developmental retardation of coping skills is severe enough to warrant early detection and intervention.

The six groups as described comprised the total experimental group. One child from each of the first four groups had his behaviors compared against the socialization and personal responsibilities scales at one, three, six, nine, twelve, eighteen, twenty-four, thirty, thirty-six, forty-eight, sixty, and seventy-two months. Children who are developmentally delayed were excluded from the one and three month samples, but were included from six months on. The writer believes that a significant delay can be established by age six months, whereas at one and three months, infants are still

unpredictable enough in their state changes to make the establishment of adequate measurement precautions difficult to manage.<sup>2</sup>

Autistic children will be included in the three, four, five and six year old age groups. Sixty-two children will be included in the experimental group. These children will be matched with controls for sex and socioeconomic status, as well as for race and age.

The history of control children will be reviewed in order to affirm that the course of their development has not been marked with any unusual phenomena (see Appendix C). For children whose Apgar score is unknown to their parents, and whose early history suggests possible perinatal difficulties; a consent form will be signed by the parent which allows the investigator to contact the hospital of birth to obtain this information (see Appendix D).

Permission forms which assure parents that the information they provide will be kept private, will also be signed by the interviewed parent (see Appendix E).

Experimental subjects were located with the assistance of The Franklin County (Ohio) Program for the Mentally Retarded, The Nisonger Center for the Mentally Retarded and Developmentally Disabled at The Ohio State University, The Ohio State University Hospital Clinic, The Children's

<sup>2</sup>. See Wolf, 1959 for a discussion of infant activity states.

Hospital Genetic Clinic and Birth Defects Clinic in Columbus, Ohio, The Childhood League, The Franklin County Society for Crippled Children, and through pediatricians in private practice. All of these agencies are located in Columbus, Ohio.

Control subjects came from a wide number of sources. The children of personal friends and acquaintances of this investigator were used; children coming in for well-baby check-ups at the OSU Hospital Clinic were used; in a few cases brothers or sisters of experimental subjects were used; and finally children were selected who were enrolled in the Neighborhood House Day Care Center and the Children's College Day Care Center in Columbus, Ohio.

All subjects in the experimental groups were matched with control children on the basis of age, race, socioeconomic status, and sex. Race and sex characteristics were clearcut. Socioeconomic status, however, because of the current ethical restrictions placed on questioning individuals about private information, was loosely separated into the two categories of high or low. These divisions were made using the two factors that have been identified by Deutsch (1968): 1) occupation of the main support of the family, and 2) educational achievements of the main support of the family. Parents with less than a high school education, and/or those who were out of work

and receiving public support were considered to be in the low socioeconomic group. Parents who were employed and who had completed at least a high school education were placed in the high socioeconomic category. Obviously, the problems that arose were related to the occurrence of a non-working parent whose level of educational attainment was high (college or above), or for a parent who had achieved only a low level of educational status, but who was presently employed in a very "good" job, e.g. owning own business. Although there were only a few such difficult to-place families, the eventual resolution of the dilemma was based primarily on the investigator's impression of the family's status. Almost always the decision was made to place the family in the higher level.

There were thirty-eight girls (31%) in the sample, and eighty-six boys (69%). Ninety-six of the children (77%) were white and twenty-eight (23%) were black. Ninety of the children (73%) were from middle or upper-middle class backgrounds as determined by their parents' employment status and educational backgrounds, and thirty-four (27%) were from a lower socioeconomic milieu (see Table 2, Demographic Characteristics).

In most cases the experimental and control subjects were very close to the selected target ages. However, some of the more difficult to find children fell in between

**Table 2**  
**Demographic Characteristics**

<b>Sex</b>	<b>Number</b>	<b>% of the total sample</b>
<b>Females</b>	<b>38</b>	<b>31%</b>
<b>Males</b>	<b>86</b>	<b>69%</b>
<b>Total</b>	<b>124</b>	<b>100%</b>
<hr/>		
<b>Race</b>		
<b>White</b>	<b>96</b>	<b>77%</b>
<b>Black</b>	<b>28</b>	<b>23%</b>
<b>Total</b>	<b>124</b>	<b>100%</b>
<hr/>		
<b>Socioeconomic Status</b>		
<b>Lower</b>	<b>34</b>	<b>27%</b>
<b>Higher</b>	<b>90</b>	<b>73%</b>
<b>Total</b>	<b>124</b>	<b>100%</b>

two age groupings. When this occurred, he or she was placed in the group to which he was closer in age. For example, a two month and one week old child was placed in the three month group because he was one week closer to actually being three months than he was to being one month of age. Most infants were no more than one month from the target ages, and most of the older children were no further than two months in either direction from the target age.

There were three individuals who administered the field test scales to different parents. Inter-rater reliability was established by initial discussions of appropriate scoring procedures and by having all three individuals score protocols for the same responses until all were scoring in the same manner. While only one person at a time conducted an interview with a parent, the other two separately scored the responses and noted where different questions might be asked. This procedure was followed until the scoring of all three administrators was consistent with one another.

The parents who were interviewed, almost all of whom were the mothers, were interviewed either in person at The Nisonger Center, Ohio State University, or in their own homes, or were contacted by phone. Although phoned interviews were not originally planned, the mothers who

were contacted openly preferred this less taxing means of providing information. For this reason, over half of the interviews were conducted over the telephone. The interviews ranged from five minutes to forty-five minutes in length, but most took only ten to fifteen minutes to accomplish. The majority of the interviewed parents resided in Columbus, Ohio. All interviews were conducted in October and November, 1976.

The three Social Domain sections were administered to either the mother or father of all 124 children. The two Personal Responsibility sections were administered to only the children who were in the twelve month or older age groups. It was found in the pilot testing of the scales that children of one, three, and nine months were not old enough to pass these items. Therefore, data on these sections was collected for only 110 children.

Each parent was asked to respond either affirmatively or negatively to each item in accordance with the present behavior of their child. An affirmative response was noted by a check (✓) to the left of each item. A negative response resulted in the interviewer's notation, in a space provided beneath the item, of the reason why the child was not performing this behavior. When a parent had difficulty in understanding the item as it was stated, a check (✓) was made to the right of the item to indicate a need for possible rewording.

Example

1. Lifts his arms for you to pick him up. ✓  
(Is not able to move his arms--kicks  
his feet instead when he wants to be  
picked up.)
- ✓ 2. Sometimes likes you to hold him or         
swing him in circles.  
\_\_\_\_\_
- ✓ 3. Giggles or laughs when you tickle him.         
\_\_\_\_\_



## CHAPTER IV

### RESULTS

The purpose of this investigation was to discover how well the field test Social and Personal Responsibility Domains of the Children's Adaptive Behavior Scale (CABS) measured the developmental acquisition of discrete socially adaptive behaviors. Errors of ordering have been sought and will be reported in this chapter. Data will also be reviewed which reflect the ability of the CABS's Social and Personal Responsibility Domains' sections to discriminate between different experimental groups and different age levels. The deletion, addition and rewording of items which will improve the future edition of these sections will be described in Chapter V.

#### Section Results

Collected data on the five sections of the Social and Personal Responsibility Domains will now be described.

The Coefficient of Reproducibility on each section of the scale, i.e. the Personal Awareness section, the Body Contact section etc., indicates how accurately the items in each part are placed in a developmental progression. To arrive at this coefficient each individual's

total number of positive responses are counted. If an individual has a summed total of four, then a valid Guttman Scale would predict that the items attained by that individual were one, two, three, and four. If a person gets a score of four by checking items one, three, seven and eight, the ordering is obviously not in a progressively more difficult arrangement for him, and it would be impossible to predict his achievements and deficits from knowing the total summed score alone. Since it is hoped that a total score will eventually be the data plotted on a Children's Adaptive Behavior Scale profile for each child, it is imperative that all items be placed in a developmental progression which best reflects the step-by-step achievements of a large number of children. Therefore, the most important information to be obtained from the statistical analysis of the data that has been collected is the global Coefficient of Reproducibility for each section of the scale. This coefficient ranges from 0 to 1 and any coefficient greater than .9 is considered to reflect a valid scale. A Minimal Marginal Coefficient of .6 or above indicates that the scale is adequately unidimensional and cumulative.

Although all of the sections of the CABS's Social and Personal Responsibility Domains already have acceptable

Coefficients of Reproducibility and Coefficients of Minimal Marginal Reproducibility, only one (Personal Awareness) is completely without ordering errors. Therefore, the next step in describing the statistical results will be to pinpoint errors in each section and rearrange the items so that they reflect the developmental progress of the 124 children for whom data has been collected.

Results will then be reported on the breakdown of information on each section for the different experimental and control groups, and for the different ages of the children. Finally, each individual item will be analyzed for its ability to discriminate between different groups and then between different age levels. No analysis by sex, race or socioeconomic level was attempted since the population data that has been obtained is so highly dominated by male, white, and higher socioeconomic data (see Table 2). This information is important and must be actively sought before the CABS is ready for publication, but a report based on the data tabulated here might very well be misleading.

#### PERSONAL AWARENESS SECTION

The first section of the Social Domain of the CABS is Personal Awareness. The Coefficient of Reproducibility

for Personal Awareness is .96 which indicates that this section is already in an acceptable developmental order (above .9). The Minimum Marginal Coefficient of Reproducibility is .82, also well above the acceptable level of .6.

The arrangement of items in order of difficulty from the most easily passed to the most difficult is already correct for this section. The items are arranged in correct order in Table 3.

#### Group Differences

The ability of the Personal Awareness section to discriminate between groups has been found to be above the .01 level of significance which is the criterion set for discriminability. Reservations must be made however, for an inflated score for the developmentally delayed children and especially for the autistic children. Fewer children were selected in these groups, and the children who were selected were from the higher age levels which means that their group average scores will be higher than they would have been if children from the younger ages had been added.

Personal Awareness items pinpoint the greater number of deficits in: first the cerebral palsied group with a mean score of only 5.5 (see Table 4). Following them are autistic children, developmentally delayed children and Low Apgar children. Premature and Down's Syndrome

Table 3

Personal AwarenessCorrectly Ordered Items

1. Sometimes watches moving things.
2. Sometimes watches people when they move around.
3. Recognizes his mother.
4. Recognizes other family members.
5. Recognizes people other than family.
6. Becomes serious or watchful when he sees someone crying.
7. Knows the names of people close to him like friends and neighbors.
8. Has information about others such as their job or their relationship to him, e.g. teacher, sister.
9. Stares into space, does not actively look at things.

children show equal mean scores, and normal children were the least likely to miss these items.

Age Differences

The ability of the Personal Awareness section to discriminate between different age groups has been found to be well above the .01 level of significance (see Table 5).

From the data reported in Table 5 it can be seen that the Personal Awareness section discriminates very well between different age groups with the possible exception of the four and five year old groups, and with a

Table 4

Personal Awareness Section  
Discrimination between groups

<u>Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
Down's Syndrome	6.9	1.7	12
Cerebral Palsied	5.5	2.4	12
Premature	6.9	1.6	12
Low Apgar	6.8	2.1	12
Developmentally Delayed	6.6	2.2	10
Autistic	6.0	0.8	4
Control	7.9	1.6	62
<b>Total</b>	<b>7.2</b>	<b>1.9</b>	<b>124</b>

p is greater than .0000

**Table 5**  
**Personal Awareness Section**  
**Discrimination Between Ages**

<u>Age Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
One Month	3.1	1.2	8
Three Months	4.0	1.1	8
Six Months	5.0	0.9	10
Nine Months	5.9	1.1	10
Twelve Months	5.4	1.4	10
Eighteen Months	5.9	1.5	10
Twenty-four Months	7.4	0.9	10
Thirty Months	7.4	0.9	10
Thirty-six Months	7.5	0.9	12
Forty-eight Months	6.6	2.1	12
Sixty Months	7.2	1.4	12
Seventy-two Months	7.4	0.9	12
Total	6.2	1.8	124

p is greater than .0000

slight difference in the achievements of twelve month old children. There is a steady increase in the mean attained score with age and the standard deviation is rarely more than one item from the mean. The individual item analysis for Personal Awareness items by age group directly follows each group analysis for different groups and should pinpoint which items the four and five year olds missed.

**Personal Awareness**

Item 0. Stares into space; does not actively look at things.

**Table 6**

**Group Differences**

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	0	0%	12	100%
Cerebral Palsied	1	8%	11	92%
Premature	0	0%	12	100%
Low Apgar	0	0%	12	100%
Developmentally Delayed	0	0%	10	100%
Autistic	0	0%	4	100%
Control	0	0%	62	100%
<b>Total</b>	<b>1</b>	<b>1%</b>	<b>123</b>	<b>99%</b>

$p = .15$

Since the zero item in every section reflects the failure of a child to achieve any of that sections positive items, a high failure rate on a zero item is a positive rather than a negative sign. Group accomplishments on any positive item are lowered when one of the group members is unable to pass any item in a section. Thus the highest possible number of cerebral palsied children who might be expected to pass any of the positive items in Personal Awareness is only eleven, or 92% of the original group size.



**Personal Awareness**

**Item 0. Stares into space; doesn't actively look at things.**

**Table 7**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	7	88%	1	12%
Three Months	8	100%	0	0%
Six Months	10	100%	0	0%
Nine Months	10	100%	0	0%
Twelve Months	10	100%	0	0%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	12	100%	0	0%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
<b>Total</b>	<b>123</b>	<b>99%</b>	<b>1</b>	<b>.8%</b>

**p = .01**

**Personal Awareness**

Item 1. Sometimes watches moving things.

**Table 8**  
**Group Differences**

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	12	100%	0	0%
Cerebral Palsied	11	92%	1	8%
Premature	12	100%	0	0%
Low Apgar	12	100%	0	0%
Developmentally Delayed	9	90%	1	10%
Autistic	3	75%	1	25%
Control	62	100%	0	0%
<b>Total</b>	121	98%	3	2%

p = .01

**Personal Awareness**

**Item 2. Sometimes watches people move around.**

**Table 10****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	12	100%	0	0%
<b>Cerebral Palsied</b>	10	83%	2	66%
<b>Premature</b>	12	100%	0	0%
<b>Low Apgar</b>	12	100%	0	0%
<b>Developmentally Delayed</b>	9	90%	1	10%
<b>Autistic</b>	4	100%	0	0%
<b>Control</b>	62	100%	0	0%
<b>Total</b>	121	97%	3	3%

**p = .01**

especially true of the six year old autistic child who did not pass this item. The fact that so many subjects did pass this item indicates that it is a particularly common behavior to find in the adaptive repertoire of young children. It also discriminates between severely handicapped children and those who are more moderately handicapped or considered to be normal.

**Personal Awareness**

**Item 1. Sometimes watches moving things.**

**Table 9**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	7	88%	1	12%
Three Months	8	100%	0	0%
Six Months	10	100%	0	0%
Nine Months	10	100%	0	0%
Twelve Months	10	100%	0	0%
Eighteen Months	9	90%	1	10%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	12	100%	0	0%
Sixty Months	11	92%	1	8%
Seventy-two Months	12	100%	0	0%
<b>Total</b>	<b>121</b>	<b>98%</b>	<b>3</b>	<b>2%</b>

$p = .5$

The data reported in Table 9 are interesting in that they point out three individuals who were particularly handicapped. These three subjects have pulled down the group mean scores on this item (see Table 8) because of the severity of their handicapping condition. This is

**Personal Awareness**

**Item 2. Sometimes watches people when they move around.**

Table 11

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	7	88%	1	12%
Three Months	8	100%	0	0%
Six Months	10	100%	0	0%
Nine Months	10	100%	0	0%
Twelve Months	9	90%	1	10%
Eighteen Months	9	90%	1	10%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	12	100%	0	0%
Sixty Months	12	100%	0	0%
Seventy-two Months				
Total	121	98%	3	2%

$p = .4$

Two cerebral palsied and one developmentally delayed child missed the Personal Awareness Item 2. This suggests that the item is discriminating more between handicapped and non-handicapped children than it is between different age groups of all children.

**Personal Awareness****Item 3. Recognizes his mother.****Table 12****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	12	100%	0	0%
<b>Cerebral Palsied</b>	10	83%	2	17%
<b>Premature</b>	12	100%	0	0%
<b>Low Apgar</b>	11	92%	1	8%
<b>Developmentally Delayed</b>	10	100%	0	0%
<b>Autistic</b>	4	100%	0	0%
<b>Control</b>	61	98%	1	2%
<b>Total</b>	120	97%	4	3%

p = .1

**Personal Awareness**

Item 3. Recognizes his mother.

Table 13

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	6	75%	2	25%
Three Months	7	88%	1	12%
Six Months	10	100%	0	0%
Nine Months	10	100%	0	0%
Twelve Months	10	100%	0	0%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	11	92%	1	8%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
Total	120	97%	4	3%

p = .06

**Personal Awareness**

Item 4. Recognizes other family members.

Table 14

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Down's Syndrome	10	83%	2	17%
Cerebral Palsied	10	83%	2	17%
Premature	11	92%	1	8%
Low Apgar	10	83%	2	17%
Developmentally Delayed	8	80%	2	20%
Autistic	4	100%	0	0%
Control	59	95%	1	5%
<b>Total</b>	<b>112</b>	<b>90%</b>	<b>12</b>	<b>10%</b>

p = .5



**Personal Awareness****Item 4. Recognizes other family members.****Table 15****Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	3	38%	5	62%
Three Months	5	63%	3	37%
Six Months	9	90%	1	10%
Nine Months	10	100%	0	0%
Twelve Months	9	90%	1	10%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	10	83%	2	17%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
<b>Total</b>	<b>112</b>	<b>90%</b>	<b>12</b>	<b>10%</b>

p is greater than .0000

Table 15 graphically demonstrates the hierarchical nature of the Personal Awareness section. Most of the children who fail the item are young; and the older a child is the more likely it is that he will have passed a particular item on the scale. The two four year olds who

**Personal Awareness**

Item 5. Recognizes people other than family.

Table 16

Group Differences

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	10	83%	2	17%
Cerebral Palsied	4	33%	8	66%
Premature	9	75%	3	25%
Low Apgar	8	66%	4	33%
Developmentally Delayed	7	70%	3	30%
Autistic	3	75%	1	25%
Control	53	85%	9	15%
<b>Total</b>	<b>94</b>	<b>76%</b>	<b>30</b>	<b>24%</b>

$p = .01$

missed this item are very significantly separated from the developmental achievements of the other children of their age in the sample.

**Personal Awareness**

Item 5. Recognizes people other than family.

Table 17  
Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	1	12%	7	88%
Three Months	0	0%	8	100%
Six Months	7	70%	3	30%
Nine Months	7	70%	3	30%
Twelve Months	8	80%	2	20%
Eighteen Months	9	90%	1	10%
Twenty-four Months	9	90%	1	10%
Thirty Months	9	90%	1	10%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	9	75%	3	25%
Sixty Months	11	92%	1	8%
Seventy-two Months	11	92%	1	8%
<b>Total</b>	<b>94</b>	<b>76%</b>	<b>30</b>	<b>24%</b>

p is greater than .0000

Although this item appears to be in good developmental order, the more severely handicapped older children are making it more difficult to separate the hierarchical from the discriminatory nature of the reported data.

**Personal Awareness**

**Item 6. Becomes serious or watchful when he sees someone crying.**

**Table 18****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	7	58%	5	41%
<b>Cerebral Palsied</b>	5	42%	7	58%
<b>Premature</b>	7	58%	5	42%
<b>Low Apgar</b>	8	66%	4	33%
<b>Developmentally Delayed</b>	5	50%	5	50%
<b>Autistic</b>	1	25%	3	75%
<b>Control</b>	51	82%	11	18%
<b>Total</b>	84	68%	40	32%

**p = .01**

**Personal Awareness**

**Item 6. Becomes serious or watchful when he sees someone crying.**

**Table 19**  
**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>One Month</b>	0	0%	8	100%
<b>Three Months</b>	2	25%	6	75%
<b>Six Months</b>	3	30%	7	70%
<b>Nine Months</b>	8	80%	2	20%
<b>Twelve Months</b>	5	50%	5	50%
<b>Eighteen Months</b>	7	70%	3	30%
<b>Twenty-four Months</b>	7	70%	3	30%
<b>Thirty Months</b>	10	100%	0	0%
<b>Thirty-six Months</b>	11	92%	1	8%
<b>Forty-eight Months</b>	10	83%	2	17%
<b>Sixty Months</b>	11	92%	1	8%
<b>Seventy-two Months</b>	10	83%	2	17%
<b>Total</b>	84	68%	40	32%

**p is greater than .0000**

This item appears to be generally in hierarchical order, but now we are beginning to pick up some individual differences within the normal children as well as discrimination data between different groups (see Table 18).

**Personal Awareness**

Item 7. Knows the names of people close to him like friends and neighbors.

Table 20

**Group Differences**

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	6	50%	6	50%
Cerebral Palsied	5	42%	7	58%
Premature	5	42%	7	58%
Low Apgar	5	42%	7	58%
Developmentally Delayed	4	40%	6	60%
Autistic	1	25%	3	75%
Control	42	68%	20	32%
Total	68	55%	56	45%

p = .1

**Personal Awareness**

**Item 7. Knows the names of people close to him like friends and neighbors.**

Table 21

**Age Differences**

<u>Age Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
One Month	0	0%	8	100%
Three Months	2	25%	6	75%
Six Months	0	0%	10	100%
Nine Months	3	30%	7	70%
Twelve Months	2	20%	8	80%
Eighteen Months	3	30%	7	70%
Twenty-four Months	9	90%	1	10%
Thirty Months	9	90%	1	10%
Thirty-six Months	11	92%	1	8%
Forty-eight Months	9	75%	3	25%
Sixty Months	9	75%	3	25%
Seventy-two Months	11	92%	1	8%
Total	68	55%	56	45%

p is greater than .0000

This item appears to have been difficult to interpret for two of the mothers of three month old infants. Since the sample contained no known geniuses, these mothers must have had difficulty in understanding what the item was saying, or they were overoptimistically reporting the

**Personal Awareness**

**Item 8. Has information about others such as their job or thier relationship to him, e.g. teacher, sister.**

**Table 22****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	2	17%	10	83%
<b>Cerebral Palsied</b>	0	0%	12	100%
<b>Premature</b>	3	25%	9	75%
<b>Low Apgar</b>	4	33%	8	67%
<b>Developmentally Delayed</b>	4	40%	6	60%
<b>Autistic</b>	0	0%	4	100%
<b>Control</b>	36	58%	26	42%
<b>Total</b>	49	40%	75	60%

**p = .01**

abilities of their infants. Without this unexpected discrepancy the item appears very clearly to discriminate between age groups.



**Personal Awareness**

Item 8. Has information about others such as their job or their relationship to him, e.g. teacher, sister.

Table 23

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	0	0%	10	100%
Twelve Months	0	0%	10	100%
Eighteen Months	2	20%	8	80%
Twenty-four Months	8	80%	2	20%
Thirty Months	6	60%	4	40%
Thirty-six Months	8	67%	4	33%
Forty-eight Months	7	58%	5	42%
Sixty Months	9	75%	3	25%
Seventy-two Months	9	75%	3	25%
Total	49	40%	75	60%

p is greater than .0000

### BODY CONTACT SECTION

The second section of the Social Domain of the CABS is Body Contact. The Coefficient of Reproducibility for Body Contact is .98, well within very acceptable levels of above .9. The Minimum Marginal Coefficient of Reproducibility is .82 which is above the .6 criterion for a unidimensional scale.

The arrangement of items in order of difficulty from the most easily passed to the most difficult was not accurate in the field test version (see Appendix B). The items have been rearranged to reflect which ones preceded and which ones followed any given item. This rearrangement is produced in Table 24.

#### Group Differences

The ability of the Body Contact section to discriminate between groups has been found to be above the .01 level of significance. As was mentioned in the Personal Awareness data report, reservations must be made for an inflated score for the developmentally delayed and autistic children since their samples did not include children in the youngest categories.

Body Contact items (Table 25) highlight the greater number of deficits in the following order: cerebral palsied children had the lowest mean score, then came

**Table 24****Body Contact****Correctly Ordered Items**

1. Sometimes likes you to hold him or swing him in circles.
2. Lifts his arms for you to pick him up.
3. Giggles or laughs when you tickle him.
0. Looks away or arches his back when you try to pick him up.

**Table 25**  
**Body Contact Section**  
**Discrimination Between Groups**

<u>Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
Down's Syndrome	3.0	.7	12
Cerebral Palsied	3.0	.9	12
Premature	3.8	.6	12
Low Apgar	3.5	.8	12
Developmentally Delayed	3.6	.7	10
Autistic	4.0	.0	4
Control	3.7	.6	62
<b>Total</b>	<b>3.6</b>	<b>.7</b>	<b>124</b>

p is greater than .0000

Low Apgar children, Down's Syndrome children, premature children, developmentally delayed children, control children and autistic children.

This section does not discriminate between groups as well as the Personal Awareness section, probably in part because of the smaller number of items it contains.

#### Age Differences

The ability of the Body Contact section to discriminate between different age groups was found to be above the .01 level of significance.

From the gradual increase in scores for the younger children (Table 26), it can be determined that this

**Table 26**  
**Body Contact Section**  
**Discrimination Between Different Ages**

<u>Age Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
One Month	2.0	0.0	8
Three Months	2.9	0.8	8
Six Months	3.3	0.8	10
Nine Months	3.6	0.7	10
Twelve Months	3.7	0.7	10
Eighteen Months	3.8	0.4	10
Twenty-four Months	4.0	0.0	10
Thirty Months	3.9	0.3	10
Thirty-six Months	4.0	0.0	12
Forty-eight Months	3.8	0.6	12
Sixty Months	4.0	0.0	12
Seventy-two Months	3.8	0.4	12
<b>Total</b>	<b>3.6</b>	<b>0.7</b>	<b>124</b>

$p = .01$

scale does differentiate between younger and older children over time. This indication of a developmental accretion seems to level off very quickly, however, because by twelve months of age most of the children are doing as well as the children who are six years of age. Thus the variations in mean score at the later ages

**Body Contact**

**Item 0. Looks away or arches his back when you try to pick him up.**

**Table 27**

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	0	0%	12	100%
<b>Cerebral Palsied</b>	0	0%	12	100%
<b>Premature</b>	0	0%	12	100%
<b>Low Apgar</b>	0	0%	12	100%
<b>Developmentally Delayed</b>	0	0%	10	100%
<b>Autistic</b>	0	0%	4	100%
<b>Control</b>	0	0%	62	100%
<b>Total</b>	0	0%	124	100%

No significance level was obtained.

probably reflect the deficits of particular handicapped children in those age ranges.

Since no subject failed this zero item (Table 27), the question must be asked if this section has any discriminatory power at its lowest end. The section in the form in which it was field tested does not appear to discriminate well enough between groups. This may be an outcome of the particular subjects collected or may indicate that the lowest level item is too easy to pass. A description of the rewording which is being considered

**Body Contact**

Item 0. Looks away or arches his back when you try to pick him up.

**Table 28**

**Age Differences**

<u>Age Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	0	0%	10	100%
Twelve Months	0	0%	10	100%
Eighteen Months	0	0%	10	100%
Twenty-four Months	0	0%	10	100%
Thirty Months	0	0%	10	100%
Thirty-six Months	0	0%	12	100%
Forty-eight Months	0	0%	12	100%
Sixty Months	0	0%	12	100%
Seventy-two Months	0	0%	12	100%
<b>Total</b>	<b>0</b>	<b>0%</b>	<b>124</b>	<b>100%</b>

No significance level was obtained.

for this section can be found in Chapter V.

**Body Contact**

Item 1. Lifts his arms for you to pick him up.

**Table 29**  
**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	9	75%	3	25%
<b>Cerebral Palsied</b>	5	42%	7	58%
<b>Premature</b>	10	83%	2	17%
<b>Low Apgar</b>	8	67%	4	33%
<b>Developmentally Delayed</b>	7	70%	3	30%
<b>Autistic</b>	4	100%	0	0%
<b>Control</b>	51	81%	11	19%
<b>Total</b>	94	76%	30	24%

$p = .07$



**Body Contact**

Item 1. Lifts his arms for you to pick him up.

Table 30

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	0	0%	8	100%
Three Months	3	38%	5	62%
Six Months	5	50%	5	50%
Nine Months	7	70%	3	30%
Twelve Months	8	80%	2	20%
Eighteen Months	8	80%	2	20%
Twenty-four Months	10	100%	0	0%
Thirty Months	9	90%	1	10%
Thirty-six Months	9	90%	1	10%
Forty-eight Months	10	83%	2	17%
Sixty Months	12	100%	0	0%
Seventy-two Months	10	83%	2	17%
Total	94	76%	30	24%

p is greater than .0000

**Body Contact**

Item 2. Sometimes likes you to hold him or swing him in circles.

**Table 31**

**Group Differences**

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	12	100%	0	0%
Cerebral Palsied	11	92%	1	8%
Premature	12	100%	0	0%
Low Apgar	12	100%	0	0%
Developmentally Delayed	10	100%	0	0%
Autistic	4	100%	0	0%
Control	62	100%	0	0%
<b>Total</b>	<b>123</b>	<b>99%</b>	<b>1</b>	<b>2%</b>

$p = .1$

**Body Contact**

Item 2. Sometimes likes you to hold him or swing him in circles.

Table 32

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	8	100%	0	0%
Three Months	7	88%	1	12%
Six Months	10	100%	0	0%
Nine Months	10	100%	0	0%
Twelve Months	10	100%	0	0%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	12	100%	0	0%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
Total	123	99%	1	.8%

p = .2

**Body Contact****Item 3. Giggles or laughs when you tickle him.****Table 33****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	10	83%	2	17%
<b>Cerebral Palsied</b>	7	58%	5	42%
<b>Premature</b>	11	92%	1	8%
<b>Low Apgar</b>	10	83%	2	17%
<b>Developmentally Delayed</b>	9	90%	1	10%
<b>Autistic</b>	4	100%	0	0%
<b>Control</b>	57	92%	5	8%
<b>Total</b>	108	87%	16	13%

p = .07

**Body Contact**

Item 3. Giggles or laughs when you tickle him.

Table 34

## Age Differences

Age Group.	# Passed	% Passed	# Failed	% Failed
One Month	0	0%	8	100%
Three Months	5	63%	3	37%
Six Months	8	80%	2	20%
Nine Months	9	90%	1	10%
Twelve Months	9	90%	1	10%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	11	92%	1	8%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
Total	108	87%	16	13%

p is greater than .0000

### PERSONAL INTERACTION SECTION

The third section of the Social Domain of the CABS is Personal Interaction. The Coefficient of Reproducibility for Personal Interaction is .95, well above the .9 standard for being in an acceptable developmental order. The Minimum Marginal Coefficient of Reproducibility is .74 which is also above the standard for determining that a scale is adequately unidimensional and cumulative.

Some items of the Personal Interaction section have been found to be out of developmental order by Guttman analysis. Placing them in order of difficulty results in Table 35.

#### Group Differences

The ability of the Personal Interaction section to discriminate between groups has been found to be above the .01 level of significance (Table 36). Reservations must once again be made for inflated scores for both autistic and developmentally delayed children.

The group having the greatest difficulty in passing the Personal Interaction items was the cerebral palsied group. The Down's Syndrome, premature, and Low Apgar groups all had similar scores, followed by the developmentally delayed children, autistic children, and the control children.

Table 35

Personal InteractionCorrectly Ordered Items

1. Cries, pouts, or tells you when he's hurt or unhappy.
2. Smiles or tries to talk to you when you smile and talk to him.
3. Likes you better than people he doesn't know as well.
4. Child often plays by himself; he does not always depend on others to keep him occupied.
5. Tries to get you to notice him by smiling, calling you, or showing off.
6. Is often loving toward brothers or sisters or to family pets.
7. Calls or comes to you for help when he's in trouble.
8. Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers.
9. Likes to show you or tell you about things that interest him.
10. Lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner.
11. Usually plays well with other children.
0. Actively looks away from you.

Table 36

Personal Interaction Section  
Discrimination Between Groups

<u>Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
Down's Syndrome	7.5	3.4	12
Cerebral Palsied	5.0	2.9	12
Premature	7.6	2.8	12
Low Apgar	7.9	3.5	12
Developmentally Delayed	8.2	2.9	10
Autistic	9.8	1.5	4
<u>Control</u>	<u>9.4</u>	<u>3.1</u>	<u>62</u>
Total	8.4	3.3	124

p is greater than .01



**Table 37**  
**Personal Interaction Section**  
**Discrimination Between Different Ages**

<u>Age Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
One Month	3.0	0.9	8
Three Months	3.2	2.1	8
Six Months	5.5	0.8	10
Nine Months	5.9	1.3	10
Twelve Months	7.4	2.2	10
Eighteen Months	8.9	2.9	10
Twenty-four Months	10.7	1.1	10
Thirty Months	10.3	2.5	10
Thirty-six Months	10.7	1.6	12
Forty-eight Months	10.6	2.7	12
Sixty Months	10.8	1.8	12
Seventy-two Months	10.0	2.0	12
<b>Total</b>	<b>8.4</b>	<b>3.3</b>	<b>124</b>

p is greater than .0000

#### Age Differences

The ability of the Personal Interaction section to discriminate between ages was well above the .01 level of significance (Table 37). The Personal Interaction section has a progressive increase in the number of behaviors attained as children get older. Most of the behaviors

**Personal Interaction**

Item 0. Actively looks away from you.

**Table 38**  
**Group Differences**

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	0	0%	12	100%
Cerebral Palsied	1	8%	11	92%
Premature	0	0%	12	100%
Low Apgar	0	0%	12	100%
Developmentally Delayed	0	0%	10	100%
Autistic	0	0%	4	100%
<u>Control</u>	<u>0</u>	<u>0%</u>	<u>62</u>	<u>100%</u>
Total	1	1%	123	99%

p = .6

however, are passed by two year olds, and this level of achievement holds through to the six year old subjects.

**Personal Interaction**

Item 0. Active looks away from you.

**Table 39**

**Age Differences**

<u>Age Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
One Month	0	0%	8	100%
Three Months	1	12%	6	88%
Six Months	0	0%	10	100%
Nine Months	0	0%	10	100%
Twelve Months	0	0%	10	100%
Eighteen Months	0	0%	10	100%
Twenty-four Months	0	0%	10	100%
Thirty Months	0	0%	10	100%
Thirty-six Months	0	0%	12	100%
Forty-eight Months	0	0%	12	100%
Sixty Months	0	0%	12	100%
Seventy-two Months	0	0%	12	100%
Total	1	1%	123	99%

p = .009

**Personal Interaction**

Item 1. Cries, pouts, or tells you when he's hurt or unhappy.

**Table 40**

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Down's Syndrome	12	100%	0	0%
Cerebral Palsied	11	92%	1	8%
Premature	12	100%	0	0%
Low Apgar	12	100%	0	0%
Developmentally Delayed	10	100%	0	0%
Autistic	4	100%	0	0%
Control	62	100%	0	0%
<b>Total</b>	<b>123</b>	<b>99%</b>	<b>1</b>	<b>1%</b>

**p = .1**

**Personal Interaction**

**Item 1. Cries, pouts, or tells you when he's hurt or unhappy.**

**Table 41**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	8	100%	0	0%
Three Months	7	87%	1	13%
Six Months	10	100%	0	0%
Nine Months	10	100%	0	0%
Twelve Months	10	100%	0	0%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	12	100%	0	0%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
<b>Total</b>	<b>123</b>	<b>99%</b>	<b>1</b>	<b>1%</b>

**p = .2**

**Personal Interaction**

**Item 2. Smiles or tries to talk to you when you smile and talk to him.**

**Table 42**

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	12	100%	0	0%
<b>Cerebral Palsied</b>	9	75%	3	25%
<b>Premature</b>	11	92%	1	8%
<b>Low Apgar</b>	12	100%	0	0%
<b>Developmentally Delayed</b>	9	90%	1	10%
<b>Autistic</b>	4	100%	0	0%
<b>Control</b>	60	97%	2	3%
<b>Total</b>	<b>117</b>	<b>94%</b>	<b>7</b>	<b>6%</b>

**p = .08**

**Personal Interaction**

**Item 2. Smiles or tries to talk to you when you smile and talk to him.**

**Table 43**

**Age Differences**

<u>Age Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
One Month	6	75%	2	25%
Three Months	5	62%	3	38%
Six Months	10	100%	0	0%
Nine Months	9	90%	1	10%
Twelve Months	9	90%	1	10%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	12	100%	0	0%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
<b>Total</b>	<b>117</b>	<b>94%</b>	<b>7</b>	<b>6%</b>

p = .004

**Personal Interaction**

**Item 3. Likes you better than people he doesn't know as well.**

**Table 44**

**Group Differences**

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	9	75%	3	25%
Cerebral Palsied	8	67%	4	33%
Premature	9	75%	3	25%
Low Apgar	10	83%	2	17%
Developmentally Delayed	9	90%	1	10%
Autistic	4	100%	0	0%
<u>Control</u>	<u>56</u>	<u>90%</u>	<u>6</u>	<u>10%</u>
<b>Total</b>	<b>105</b>	<b>85%</b>	<b>19</b>	<b>15%</b>

**p = .3**



**Personal Interaction**

Item 3. Likes you better than people he doesn't know as well.

Table 45

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	0	0%	8	100%
Three Months	4	40%	6	60%
Six Months	9	90%	1	10%
Nine Months	10	100%	0	0%
Twelve Months	9	90%	1	10%
Eighteen Months	10	100%	0	0%
Twenty-four Months	10	100%	0	0%
Thirty Months	10	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	10	83%	2	17%
Sixty Months	10	83%	2	17%
Seventy-two Months	11	92%	1	8%
Total	105	85%	19	15%

p is greater than .0000

This item (Table 45) is interesting in that it highlights an area in which children gain a certain emotional attachment to their parent (between about six months and three years), and then seem to either generalize their positive feelings for their parent to a much wider number of people, or begin to actively seek company other than

**Personal Interaction**

**Item 4. Tries to get you to notice him by smiling, calling you, or showing off.**

**Table 46****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	9	75%	3	25%
<b>Cerebral Palsied</b>	3	25%	9	75%
<b>Premature</b>	10	83%	2	17%
<b>Low Apgar</b>	8	67%	4	33%
<b>Developmentally Delayed</b>	7	70%	3	30%
<b>Autistic</b>	4	100%	0	0%
<b>Control</b>	55	89%	7	11%
<b>Total</b>	96	77%	28	23%

**p = .0002**

their parent's. It is evident that these phenomena do not reach such proportions that they affect all children enough so that their parent would feel that the child enjoys them equally or less than other people, but the evidence is supportive enough so that it highlights an interesting area for future investigation.

**Personal Interaction**

Item 4. Tries to get you to notice him by smiling, calling you,  
or showing off.

**Table 47****Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	1	13%	7	87%
Three Months	2	25%	6	75%
Six Months	8	80%	2	20%
Nine Months	7	70%	3	30%
Twelve Months	7	70%	3	30%
Eighteen Months	8	80%	2	20%
Twenty-four Months	10	100%	0	0%
Thirty Months	9	90%	1	10%
Thirty-six Months	11	92%	1	8%
Forty-eight Months	11	92%	1	8%
Sixty Months	11	92%	1	8%
Seventy-two Months	11	92%	1	8%
<b>Total</b>	<b>96</b>	<b>77%</b>	<b>28</b>	<b>23%</b>

p is greater than .0000

**Personal Interaction**

**Item 5. Child often plays by himself; he does not always depend on others to keep him occupied.**

**Table 48****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	9	75%	3	25%
<b>Cerebral Palsied</b>	7	58%	5	42%
<b>Premature</b>	10	83%	2	17%
<b>Low Apgar</b>	9	75%	3	25%
<b>Developmentally Delayed</b>	9	90%	1	10%
<b>Autistic</b>	4	100%	0	0%
<b>Control</b>	54	87%	8	13%
<b>Total</b>	<b>102</b>	<b>82%</b>	<b>22</b>	<b>18%</b>

**p = .2**

**Personal Interaction**

**Item 5. Child often plays by himself; he does not always depend on others to keep him occupied.**

**Table 49**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	1	13%	7	87%
Three Months	2	25%	6	75%
Six Months	8	80%	2	20%
Nine Months	9	90%	1	10%
Twelve Months	8	80%	2	20%
Eighteen Months	9	90%	1	10%
Twenty-four Months	10	100%	0	0%
Thirty Months	12	100%	0	0%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	11	92%	1	8%
Sixty Months	12	100%	0	0%
Seventy-two Months	10	83%	2	17%
<b>Total</b>	<b>102</b>	<b>82%</b>	<b>22</b>	<b>18%</b>

**p is greater than .0000**

**Personal Interaction**

Item 6. Calls or comes to you for help when he's in trouble.

**Table 50****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Down's Syndrome	4	33%	8	67%
Cerebral Palsied	1	8%	11	92%
Premature	6	50%	6	50%
Low Apgar	4	33%	8	67%
Developmentally Delayed	5	50%	5	50%
Autistic	4	100%	0	0%
Control	43	69%	19	31%
<b>Total</b>	<b>67</b>	<b>54%</b>	<b>57</b>	<b>46%</b>

p = .0006

**Personal Interaction**

**Item 6. Calls or comes to you for help when he's in trouble.**

**Table 51**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	1	10%	9	90%
Twelve Months	4	40%	6	60%
Eighteen Months	5	50%	5	50%
Twenty-four Months	9	90%	1	10%
Thirty Months	7	70%	3	30%
Thirty-six Months	10	83%	2	17%
Forty-eight Months	11	92%	1	8%
Sixty Months	11	92%	2	17%
Seventy-two Months	10	83%	2	17%
<b>Total</b>	<b>67</b>	<b>54%</b>	<b>57</b>	<b>46%</b>

**p is greater than .0000**

**Personal Interaction**

**Item 7. Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers.**

**Table 52****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	6	50%	6	50%
<b>Cerebral Palsied</b>	5	42%	7	58%
<b>Premature</b>	6	50%	6	50%
<b>Low Apgar</b>	7	58%	5	42%
<b>Developmentally Delayed</b>	6	60%	4	40%
<b>Autistic</b>	3	75%	1	25%
<b>Control</b>	45	73%	17	27%
<b>Total</b>	78	63%	46	37%

**p = .3**



**Personal Interaction**

**Item 7. Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers.**

**Table 53**  
**Age Differences**

<u>Age Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	1	10%	9	90%
Twelve Months	7	70%	3	30%
Eighteen Months	7	70%	3	30%
Twenty-four Months	10	100%	0	0%
Thirty Months	9	90%	1	10%
Thirty-six Months	12	100%	0	0%
Forty-eight Months	10	83%	2	17%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
<b>Total</b>	<b>78</b>	<b>63%</b>	<b>46</b>	<b>37%</b>

p is greater than .0000

**Personal Interaction**

Item 8. Is often loving toward brothers or sisters or to family pets.

Table 54

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Down's Syndrome	7	58%	5	42%
Cerebral Palsied	1	8%	11	92%
Premature	4	33%	8	67%
Low Apgar	7	58%	5	42%
Developmentally Delayed	5	50%	5	50%
Autistic	2	50%	2	50%
Control	46	74%	16	26%
<b>Total</b>	<b>72</b>	<b>58%</b>	<b>52</b>	<b>42%</b>

p = .001

**Personal Interaction**

**Item 8. Is often loving toward brothers or sisters or to family pets.**

**Table 55**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	2	20%	8	80%
Twelve Months	7	70%	3	30%
Eighteen Months	7	70%	3	30%
Twenty-four Months	9	90%	1	10%
Thirty Months	8	80%	2	20%
Thirty-six Months	9	75%	3	25%
Forty-eight Months	10	83%	2	17%
Sixty Months	11	92%	1	8%
Seventy-two Months	9	75%	3	25%
<b>Total</b>	<b>72</b>	<b>58%</b>	<b>52</b>	<b>42%</b>

**p is greater than .0000**

**Personal Interaction**

**Item 9. Lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner.**

**Table 56**

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	4	33%	8	67%
<b>Cerebral Palsied</b>	1	8%	11	92%
<b>Premature</b>	4	33%	8	67%
<b>Low Apgar</b>	5	42%	7	58%
<b>Developmentally Delayed</b>	5	50%	5	50%
<b>Autistic</b>	2	50%	2	50%
<b>Control</b>	37	40%	25	40%
<b>Total</b>	<b>58</b>	<b>47%</b>	<b>66</b>	<b>53%</b>

**p = .04**

**Personal Interaction**

**Item 9. Lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner.**

**Table 57**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	0	0%	10	100%
Twelve Months	0	0%	10	100%
Eighteen Months	4	40%	6	60%
Twenty-four Months	9	90%	1	10%
Thirty Months	7	70%	3	30%
Thirty-six Months	10	83%	2	17%
Forty-eight Months	10	83%	2	17%
Sixty Months	10	83%	2	17%
Seventy-two Months	8	67%	4	33%
<b>Total</b>	<b>58</b>	<b>47%</b>	<b>66</b>	<b>53%</b>

**p is greater than .0000**

**Personal Interaction**

Item 10. Likes to show you or tell you about things that interest him.

**Table 58****Group Differences**

<u>Group</u>	<u># Passed</u>	<u>% Passed</u>	<u># Failed</u>	<u>% Failed</u>
Down's Syndrome	4	33%	8	67%
Cerebral Palsied	1	8%	11	92%
Premature	5	52%	7	58%
Low Apgar	5	42%	7	58%
Developmentally Delayed	5	50%	5	50%
Autistic	3	75%	1	25%
Control	37	60%	25	40%
Total	60	48%	64	52%

p = .03

**Personal Interaction**

**Item 10. Likes to show you or tell you about things that interest him.**

**Table 59**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	0	0%	10	100%
Twelve Months	2	20%	8	80%
Eighteen Months	5	50%	5	50%
Twenty-four Months	7	70%	3	30%
Thirty Months	7	70%	3	30%
Thirty-six Months	10	83%	2	17%
Forty-eight Months	10	83%	2	17%
Sixty Months	10	83%	2	17%
Seventy-two Months	9	75%	3	25%
<b>Total</b>	<b>60</b>	<b>48%</b>	<b>64</b>	<b>52%</b>

**p is greater than .0000**

**Personal Interaction**

**Item 11. Usually plays well with other children.**

**Table 60**

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	2	17%	10	83%
<b>Cerebral Palsied</b>	2	17%	10	83%
<b>Premature</b>	2	17%	10	83%
<b>Low Apgar</b>	4	33%	8	67%
<b>Developmentally Delayed</b>	2	20%	8	80%
<b>Autistic</b>	1	25%	3	75%
<b>Control</b>	28	45%	34	55%
<b>Total</b>	<b>41</b>	<b>33%</b>	<b>83</b>	<b>67%</b>

**p = .1**



**Personal Interaction**

Item 11. Usually plays well with other children.

Table 61

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
One Month	0	0%	8	100%
Three Months	0	0%	8	100%
Six Months	0	0%	10	100%
Nine Months	0	0%	10	100%
Twelve Months	1	10%	9	90%
Eighteen Months	4	40%	6	60%
Twenty-four Months	3	30%	7	70%
Thirty Months	6	60%	4	40%
Thirty-six Months	6	50%	6	50%
Forty-eight Months	9	75%	3	25%
Sixty Months	7	58%	5	42%
Seventy-two Months	5	42%	7	58%
Total	41	33%	83	67%

p = .0001

### MORAL DEVELOPMENT SECTION

The first section of the Personal Responsibility Domain is Moral Development. The Coefficient of Reproducibility is .93; the Minimum Marginal Coefficient of Reproducibility is .8.

The arrangement of items in order of complexity is not correct in its field test form (see Appendix B). Therefore, in order of difficulty from the most easily passed to the most difficult, the order of items is reported in Table 62.

#### Group Differences

The ability of the Moral Development section to discriminate between groups has been found to be significant at the .01 level of significance (Table 63). Reservations must still be made for inflated scores for the autistic and developmentally delayed children.

This section is particularly good at discriminating between groups because the mean scores have quite a spread. The group with the lowest score is the cerebral palsied group. Following them are the Low Apgar, premature, Down's Syndrome and autistic children. The developmentally delayed and normal children were consistently able to score higher than the others.

Table 62

Moral DevelopmentCorrectly Ordered Items

1. Sometimes resists when you tell him to do something.
2. Usually stops what he is doing when you say "No" or "Don't" to him.
3. Usually remembers not to touch things he's been told to stay away from.
4. Stays away from dangerous things like medicines, moving cars, or fires.
5. Frowns, scolds, or tattles when someone else does something wrong.
6. Usually dependable; does jobs he's been told to do without help, like putting his toys away or picking his clothes up.
7. Waits for his turn with a toy or at a game.
8. Gives excuses for why he did something wrong.
9. Returns things he has borrowed.
10. Follows the rules of a game when he plays with other children.
11. Very dependable; has jobs to do every day which he does without being reminded, like making his bed or taking care of his clothes.
0. Child does only what he wants to do.

Table 63

**Moral Development Section  
Discrimination Between Groups**

<u>Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
Down's Syndrome	3.0	3.1	12
Cerebral Palsied	1.5	1.8	12
Premature	3.0	2.9	12
Low Apgar	2.4	2.8	12
Developmentally Delayed	4.3	3.3	10
Autistic	3.5	0.5	4
<b>Control</b>	<b>5.5</b>	<b>4.3</b>	<b>62</b>
<b>Total</b>	<b>4.2</b>	<b>3.8</b>	<b>124</b>

p is greater than .01

Table 64

**Moral Development Section  
Discrimination Between Different Ages**

<u>Age Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
Twelve Months	2.3	2.1	10
Eighteen Months	3.8	2.0	10
Twenty-four Months	6.9	2.4	10
Thirty Months	5.1	2.1	10
Thirty-six Months	6.4	2.5	12
Forty-eight Months	6.2	4.7	12
Sixty Months	8.7	2.9	12
Seventy-two Months	6.8	3.2	12
Total	4.2	3.8	88

p is greater than .0000

Age Differences

The ability of the Moral Development section to discriminate between different age groups was found to be well above the .01 level of significance (Table 64). Data in this table will only reflect the scores of children twelve months or older because parents of children younger than this were not questioned on these items.

Although the data in this table indicate a developmental acquisition in these items, there is a drop in the moral development behaviors reflected for thirty month

and seventy-two month old subjects. Whether or not this is a pervasive developmental trend cannot be determined with any surety for a sample of this size, half of which is comprised of handicapped children.

The sample size, as can be seen by the number of subjects in each group, has been diminished by removing all of the experimental and control children who were less than a year of age at the time of scale administration (36 children). However, even with the removal of these subjects from the data pool, it becomes evident that the Moral Development section is much more difficult than the previous sections.

Almost half of the control subjects were unable to perform any of the item behaviors (Table 65). On the zero item, almost half of the sample who were used in the administration of this section, were unable to complete any of the positive behaviors. Thus, before even analyzing the positive behaviors it becomes evident that only 42 children will be able to respond to any of them. Particularly hard hit were the cerebral palsied and Low Apgar children, both of which groups had 75% of their sample who could not pass any moral development items.

**Moral Development****Item 0. Child does only what he wants to do.****Table 65****Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
<b>Down's Syndrome</b>	4	50%	4	50%
<b>Cerebral Palsied</b>	6	75%	2	25%
<b>Premature</b>	5	63%	3	37%
<b>Low Apgar</b>	6	75%	2	25%
<b>Developmentally Delayed</b>	2	25%	6	75%
<b>Autistic</b>	0	0%	4	100%
<b>Control</b>	19	63%	25	57%
<b>Total</b>	42	48%	46	52%

**Moral Development**

Item 0. Child does only what he wants to do.

Table 66

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	4	40%	6	60%
Eighteen Months	1	10%	9	90%
Twenty-four Months	0	0%	10	100%
Thirty Months	0	0%	10	100%
Thirty-six Months	0	0%	12	100%
Forty-eight Months	1	8%	11	92%
Sixty Months	0	0%	12	100%
Seventy-two Months	0	0%	12	100%
Total	6	7%	82	93%

p is greater than .0000



## Moral Development

Item 1. Usually stops what he is doing when you say "No" or "Don't" to him.

Table 67

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	7	88%	1	12%
Cerebral Palsied	4	50%	4	50%
Premature	6	75%	2	25%
Low Apgar	6	75%	2	25%
Developmentally Delayed	7	88%	1	12%
Autistic	4	100%	0	0%
Control	38	86%	6	14%
Total	72	82%	16	18%
p = .3				

Table 68

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	6	60%	4	40%
Eighteen Months	8	80%	2	20%
Twenty-four Months	8	80%	2	20%
Thirty Months	9	90%	1	10%
Thirty-six Months	11	92%	1	8%
Forty-eight Months	8	67%	4	33%
Sixty Months	12	100%	0	0%
Seventy-two Months	10	83%	2	17%
Total	72	82%	16	18%
p is greater than .0000				

Item 2. Sometimes resists when you tell him to do something.

Table 69  
Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	6	75%	2	25%
Cerebral Palsied	4	50%	4	50%
Premature	7	88%	1	12%
Low Apgar	6	75%	2	25%
Developmentally Delayed	7	88%	1	12%
Autistic	4	100%	0	0%
Control	43	98%	1	2%
Total	77	87%	11	13%
p = .1				

Table 70  
Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	5	50%	5	50%
Eighteen Months	8	80%	2	20%
Twenty-four Months	10	100%	0	0%
Thirty Months	9	90%	1	10%
Thirty-six Months	11	92%	1	8%
Forty-eight Months	10	83%	2	17%
Sixty Months	12	100%	0	0%
Seventy-two Months	12	100%	0	0%
Total	77	87%	11	13%
p is greater than .0000				

Item 3. Usually remembers not to touch things he's been told to stay away from.

Table 71

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	3	37%	5	63%
Cerebral Palsied	2	25%	6	75%
Premature	4	50%	4	50%
Low Apgar	4	50%	4	50%
Developmentally Delayed	3	37%	5	63%
Autistic	1	25%	3	75%
Control	38	86%	6	14%
Total	55	62%	33	38%
p = .01				

Table 72

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	3	30%	7	70%
Eighteen Months	5	50%	5	50%
Twenty-four Months	8	80%	2	20%
Thirty Months	8	80%	2	20%
Thirty-six Months	6	50%	6	50%
Forty-eight Months	8	67%	4	33%
Sixty Months	11	92%	1	8%
Seventy-two Months	6	50%	6	50%
Total	55	62%	33	38%
p is greater than .0000				

Moral Development

Item 4. Stays away from dangerous things like medicines, moving cars, or fire.

Table 73

Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	2	25%	6	75%
Cerebral Palsied	1	12%	7	88%
Premature	2	25%	6	75%
Low Apgar	3	37%	5	63%
Developmentally Delayed	4	50%	4	50%
Autistic	0	0%	4	100%
Control	37	84%	7	16%
Total	49	56%	39	44%
p = .0005				

Table 74

Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	2	20%	8	80%
Eighteen Months	4	40%	6	60%
Twenty-four Months	8	80%	2	20%
Thirty Months	4	40%	6	60%
Thirty-six Months	8	67%	4	33%
Forty-eight Months	7	58%	5	42%
Sixty Months	9	75%	3	25%
Seventy-two Months	7	58%	5	42%
Total	49	56%	39	44%
p is greater than .0000				

Item 5. Frowns, scolds, or tattles when someone else does something wrong.

Table 75

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	2	25%	6	75%
Cerebral Palsied	1	12%	7	88%
Premature	2	25%	6	75%
Low Apgar	2	25%	6	75%
Developmentally Delayed	3	37%	5	63%
Autistic	0	0%	4	100%
Control	33	75%	11	25%
Total	43	49%	45	51%
p = .002				

Table 76

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	3	30%	7	70%
Twenty-four Months	7	70%	3	30%
Thirty Months	3	30%	7	70%
Thirty-six Months	9	75%	3	25%
Forty-eight Months	5	42%	7	58%
Sixty Months	9	75%	3	25%
Seventy-two Months	7	58%	5	42%
Total	43	49%	45	51%
p is greater than .0000				

Item 6. Waits for his turn with a toy or at a game.

Table 77

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	3	37%	5	63%
Cerebral Palsied	1	12%	7	88%
Premature	1	12%	7	88%
Low Apgar	0	0%	8	100%
Developmentally Delayed	2	25%	6	75%
Autistic	1	25%	3	75%
Control	22	50%	22	50%
Total p = .07	30	34%	58	66%

Table 78

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	0	0%	10	100%
Twenty-four Months	3	30%	7	70%
Thirty Months	2	20%	8	80%
Thirty-six Months	4	33%	8	67%
Forty-eight Months	8	67%	4	33%
Sixty Months	7	58%	5	42%
Seventy-two Months	6	50%	6	50%
Total p is greater than .0000	30	34%	58	66%

Item 7. Follows the rules of a game when he plays with other children.

Table 79

## Group Differences

Group	# Passed	% Passed	# Failed	%Failed
Down's Syndrome	1	12%	7	88%
Cerebral Palsied	0	0%	8	100%
Premature	0	0%	8	100%
Low Apgar	0	0%	8	100%
Developmentally Delayed	1	12%	7	88%
Autistic	0	0%	4	100%
Control	17	39%	27	61%
Total	19	22%	69	78%
p = .02				

Table 80

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	0	0%	10	100%
Twenty-four Months	1	10%	9	90%
Thirty Months	0	0%	10	100%
Thirty-six Months	3	25%	9	75%
Forty-eight Months	4	33%	8	67%
Sixty Months	5	42%	7	58%
Seventy-two Months	6	50%	6	50%
Total	19	22%	69	78%
p = .0004				

Item 8. Gives excuses for why he did something wrong.

Table 81

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	0	0%	8	100%
Cerebral Palsied	0	0%	8	100%
Premature	1	12%	7	88%
Low Apgar	0	0%	8	100%
Developmentally Delayed	1	12%	7	88%
Autistic	0	0%	4	100%
Control	24	55%	20	45%
Total	26	30%	62	70%
p = .0005				

Table 82

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	0	0%	10	100%
Twenty-four Months	3	30%	7	70%
Thirty Months	0	0%	10	100%
Thirty-six Months	4	33%	8	67%
Forty-eight Months	5	42%	7	58%
Sixty Months	7	58%	5	42%
Seventy-two Months	7	58%	5	42%
Total	26	30%	62	70%
p is greater than .0000				



Item 9. Usually dependable: does jobs he's been told to do without help, like putting his toys away or picking his clothes up.

Table 83

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	3	37%	5	63%
Cerebral Palsied	0	0%	8	100%
Premature	3	37%	5	63%
Low Apgar	1	12%	7	88%
Developmentally Delayed	4	50%	4	50%
Autistic	0	0%	4	100%
Control	26	63%	16	36%
Total	37	42%	87	51%

p = .02

Table 84

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	1	10%	9	90%
Twenty-four Months	6	60%	4	40%
Thirty Months	3	30%	7	70%
Thirty-six Months	7	58%	5	42%
Forty-eight Months	7	58%	5	42%
Sixty Months	9	75%	3	25%
Seventy-two Months	4	33%	8	67%
Total	37	42%	51	58%

p is greater than .0000

Item 10. Returns things he has borrowed.

Table 85

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	0	0%	8	100%
Cerebral Palsied	0	0%	8	100%
Premature	3	37%	5	63%
Low Apgar	1	12%	7	88%
Developmentally Delayed	2	25%	6	75%
Autistic	0	0%	4	100%
Control	14	32%	30	68%
Total p = .1	20	23%	68	77%

Table 86

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	0	0%	10	100%
Twenty-four Months	3	30%	7	70%
Thirty Months	2	20%	8	80%
Thirty-six Months	2	17%	10	83%
Forty-eight Months	2	17%	10	83%
Sixty Months	8	67%	4	33%
Seventy-two Months	3	25%	7	75%
Total p = .0002	20	23%	68	77%

Item 11. Very dependable; has jobs to do every day which he does without being reminded, like making his bed or taking care of his clothes.

Table 87

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	2	25%	6	75%
Cerebral Palsied	0	0%	8	100%
Premature	0	0%	8	100%
Low Apgar	0	0%	8	100%
Developmentally Delayed	1	12%	7	88%
Autistic	0	0%	4	100%
Control	6	14%	38	86%
Total p = .4	9	11%	79	89%

Table 88

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	1	10%	9	90%
Eighteen Months	0	0%	10	100%
Twenty-four Months	2	20%	8	80%
Thirty Months	1	10%	9	90%
Thirty-six Months	0	0%	12	100%
Forty-eight Months	0	0%	12	100%
Sixty Months	4	33%	8	67%
Seventy-two Months	1	8%	11	92%
Total p = .04	9	11%	79	89%

## ALTRUISTIC BEHAVIOR SECTION

The second section of the Personal Responsibility Domain is Altruistic Behavior. The Coefficient of Reproducibility is .96. The Minimum Marginal Coefficient is .88.

The arrangement of items in order of difficulty is not correct in the field tested version (Appendix B). The items have been rearranged in the order found by Guttman analysis to be from the simplest to the most complex. The can be found in Table 89.

Group Differences

The ability of the Altruistic Behavior section to discriminate between groups has been found to be above the .01 level of significance. As with the Moral Development section, all one, three, six and nine month old children were removed from the sample.

Altruistic Behavior items pinpoint the greater number of deficits in first the cerebral palsied group which received the lowest mean score, then the Low Apgar children, the autistic children, the premature children, the developmentally delayed, the Down's Syndrome and the control group.

Table 89

Altruistic BehaviorCorrectly Ordered Items

1. Helps you do things like carrying things for you, or putting things away for you.
2. Asks if he can help you do things like cooking or cleaning.
3. Comforts an unhappy person by talking to him or offering something to him to make him feel better.
4. Apologizes or tries to do something nice when he has been unkind.
5. Tries to get help for a child who is hurt or crying.
6. Usually tries to help other children do the right things.
7. Generously shares his toys without being told to do so.
0. Refuses to help others.

Table 90

**Altruistic Behavior Section  
Discrimination Between Groups**

<u>Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
Down's Syndrome	2.3	2.9	8
Cerebral Palsied	0.1	0.5	8
Premature	1.8	2.8	8
Low Apgar	1.5	2.5	8
Developmentally Delayed	2.3	3.0	8
Autistic	1.7	1.2	4
<u>Control</u>	<u>4.1</u>	<u>3.3</u>	<u>44</u>
Total	2.9	3.2	88

p is greater than .01

Table 91

**Altruistic Behavior Section  
Discrimination Between Age Levels**

<u>Age Group</u>	<u>Mean Score</u>	<u>Standard Deviation</u>	<u># of Subjects</u>
Twelve Months	0.4	0.8	10
Eighteen Months	2.6	2.8	10
Twenty-four Months	4.0	3.1	10
Thirty Months	3.7	2.8	10
Thirty-six Months	5.1	2.6	12
Forty-eight Months	4.9	2.8	12
Sixty Months	6.0	2.9	12
Seventy-two Months	4.7	3.2	12
Total	2.9	3.2	88

p is greater than .0000

Age Differences

There is a steady rise in the number of children exhibiting these behaviors up until the age of five. The drop in performance for the six year olds indicates that at this age there may be some negativistic behavior which is keeping the children from being as helpful as they might be expected to be.

Item 0. Refuses to help others.

Table 92

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	2	25%	6	75%
Cerebral Palsied	7	88%	1	12%
Premature	4	50%	4	50%
Low Apgar	3	37%	5	63%
Developmentally Delayed	4	50%	4	50%
Autistic	1	25%	3	75%
Control	4	9%	40	91%
Total p = .01	25	28%	63	72%

Table 93

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	2	20%	8	80%
Eighteen Months	6	60%	4	40%
Twenty-four Months	7	70%	3	30%
Thirty Months	8	80%	2	20%
Thirty-six Months	11	92%	1	8%
Forty-eight Months	10	83%	2	17%
Sixty Months	10	83%	2	17%
Seventy-two Months	9	75%	3	25%
Total p is greater than .0000	63	72%	25	28%



Altruistic Behavior

Item 1. Helps you do things like carrying things for you, or putting things away for you.

Table 94

Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	6	75%	2	25%
Cerebral Palsied	1	12%	7	88%
Premature	4	50%	4	50%
Low Apgar	5	63%	3	37%
Developmentally Delayed	4	50%	4	50%
Autistic	2	50%	2	50%
Control	40	91%	4	9%
Total	62	70%	26	30%
	p = .01			

Table 95

Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	2	20%	8	80%
Eighteen Months	6	60%	4	40%
Twenty-four Months	7	70%	3	30%
Thirty Months	8	80%	2	20%
Thirty-six Months	11	92%	1	8%
Forty-eight Months	9	75%	3	25%
Sixty Months	10	83%	2	17%
Seventy-two Months	9	75%	3	25%
Total	62	70%	26	30%
	p is greater than .0000			

**Altruistic Behavior**

Item 2. Asks if he can help you do things like cooking or cleaning.

**Table 96**

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Down's Syndrome	4	50%	4	50%
Cerebral Palsied	0	0%	8	100%
Premature	4	50%	4	50%
Low Apgar	1	12%	7	88%
Developmentally Delayed	3	37%	5	63%
Autistic	0	0%	4	100%
<b>Control</b>	<b>37</b>	<b>84%</b>	<b>7</b>	<b>16%</b>
<b>Total</b>	<b>49</b>	<b>56%</b>	<b>39</b>	<b>44%</b>

p = .0002

**Table 97**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Twelve Months	0	0%	10	100%
Eighteen Months	3	30%	7	70%
Twenty-four Months	6	60%	4	40%
Thirty Months	6	60%	4	40%
Thirty-six Months	8	67%	4	33%
Forty-eight Months	8	67%	4	33%
Sixty Months	10	83%	2	17%
<b>Seventy-two Months</b>	<b>8</b>	<b>67%</b>	<b>4</b>	<b>33%</b>
<b>Total</b>	<b>49</b>	<b>56%</b>	<b>39</b>	<b>44%</b>

p is greater than .0000

Item 3. Usually tries to help other children do the right things.

Table 98

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	2	25%	6	75%
Cerebral Palsied	0	0%	8	100%
Premature	1	12%	7	88%
Low Apgar	2	25%	6	75%
Developmentally Delayed	3	37%	5	63%
Autistic	0	0%	4	100%
Control	25	57%	19	43%
Total	33	37%	55	63%
p = .01				

Table 99

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	2	20%	8	80%
Twenty-four Months	1	10%	9	90%
Thirty Months	3	30%	7	70%
Thirty-six Months	7	58%	5	42%
Forty-eight Months	6	50%	6	50%
Sixty Months	8	67%	4	33%
Seventy-two Months	6	50%	6	50%
Total	33	37%	55	63%
p is greater than .0000				

Altruistic Behavior

227

Item 4. Apologizes or tries to do something nice when he has been unkind.

Table 100

Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	4	50%	4	50%
Cerebral Palsied	0	0%	8	100%
Premature	3	37%	5	63%
Low Apgar	1	12%	7	88%
Developmentally Delayed	3	37%	5	63%
Autistic	1	25%	3	75%
Control	32	73%	12	27%
Total	44	50%	44	50%
p = .005				

Table 101

Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	3	30%	7	70%
Twenty-four Months	6	06%	4	40%
Thirty Months	3	30%	7	70%
Thirty-six Months	6	50%	6	50%
Forty-eight Months	8	67%	4	33%
Sixty Months	10	83%	2	17%
Seventy-two Months	8	67%	4	33%
Total	44	50%	44	50%
p is greater than .0000				

**Altruistic Behavior**

**Item 5. Tries to get help for a child who is hurt or crying.**

**Table 102**

**Group Differences**

<b>Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Down's Syndrome	1	12%	7	88%
Cerebral Palsied	0	0%	8	100%
Premature	2	25%	6	75%
Low Apgar	2	25%	6	75%
Developmentally Delayed	1	12%	7	88%
Autistic	0	0%	4	100%
<b>Control</b>	<b>31</b>	<b>70%</b>	<b>13</b>	<b>30%</b>
<b>Total</b> p = .0003	<b>37</b>	<b>42%</b>	<b>51</b>	<b>58%</b>

**Table 103**

**Age Differences**

<b>Age Group</b>	<b># Passed</b>	<b>% Passed</b>	<b># Failed</b>	<b>% Failed</b>
Twelve Months	0	0%	10	100%
Eighteen Months	3	30%	7	70%
Twenty-four Months	4	40%	6	60%
Thirty Months	2	20%	8	80%
Thirty-six Months	7	58%	5	42%
Forty-eight Months	7	58%	5	42%
Sixty Months	8	67%	4	33%
<b>Seventy-two Months</b>	<b>6</b>	<b>50%</b>	<b>6</b>	<b>50%</b>
<b>Total</b> p is greater than .0000	<b>37</b>	<b>42%</b>	<b>51</b>	<b>58%</b>

Altruistic Behavior

229

Item 6. Comforts an unhappy person by talking to him or offering something to him to make him feel better.

Table 104

Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	2	25%	6	75%
Cerebral Palsied	0	0%	8	100%
Premature	4	50%	4	50%
Low Apgar	2	25%	6	75%
Developmentally Delayed	4	50%	4	50%
Autistic	1	25%	3	75%
Control	34	78%	10	22%
Total	47	53%	41	47%
p = .002				

Table 105

Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	3	30%	7	70%
Twenty-four Months	6	60%	4	40%
Thirty Months	4	40%	6	60%
Thirty-six Months	9	75%	3	25%
Forty-eight Months	8	67%	4	33%
Sixty Months	10	83%	2	17%
Seventy-two Months	7	58%	5	42%
Total	47	53%	41	47%
p is greater than .0000				

Item 7. Generously shares his toys without being told to do so.

Table 106

## Group Differences

Group	# Passed	% Passed	# Failed	% Failed
Down's Syndrome	3	37%	7	63%
Cerebral Palsied	0	0%	8	100%
Premature	0	0%	8	100%
Low Apgar	1	12%	7	88%
Developmentally Delayed	1	12%	7	88%
Autistic	0	0%	4	100%
Control	17	39%	27	61%
Total	22	25%	66	75%
	p = .07			

Table 107

## Age Differences

Age Group	# Passed	% Passed	# Failed	% Failed
Twelve Months	0	0%	10	100%
Eighteen Months	0	0%	10	100%
Twenty-four Months	3	30%	7	70%
Thirty Months	3	30%	7	70%
Thirty-six Months	2	17%	10	83%
Forty-eight Months	3	25%	9	75%
Sixty Months	7	58%	5	42%
Seventy-two Months	4	33%	8	67%
Total	22	25%	66	75%
	p = .0015			

## ALTERNATIVE BEHAVIORS

The next area to be covered in this Chapter involves the tabulation of the behaviors a child exhibited instead of the ones that were asked about in any of the individual scale items. For most of the children, a failure to pass an item reflected an inability to do so, either because maturationally or cognitively they had not reached the level of social development which was being covered by the item.

For instance, many of the children were unable to pass the item, "Waits for his turn with a toy or at a game." The reasons for most of these failures are twofold. First, the child has not attained the concept of "turn" or the socially determined length of time that constitutes a reasonable period to wait for that turn. Secondly, the child may not have cognitively mastered the process of decentering. That is, his orientation may still be so egocentric that he cannot understand the reason for taking turns in the first place. He feels that if he wants something he ought to be able to have it immediately.

This lack of understanding of the items leads to the very common response of parents that the child cannot do the behavior yet. It is the most common reason elicited for the failed items of the younger children.



his level of social adaptation.

Spaces were provided in the field tested version of the scale (Appendix B) which allowed the administrators to note these alternative behaviors. A listing of these is provided in Appendix G.

There is another kind of alternative behavior which should be mentioned. The items in this scale were developed based on the normal ways children in our society indicate that they have attained a given level of development. One of these ways is reflected in the item, "Lifts his arms for you to pick him up." A certain degree of CNS maturation is necessary to pass this item, but beyond the attainment of the ability to perform this skill is the child's learning of ways in which to achieve its end, i.e. getting someone to pick him up. If the child's social contacts do not or cannot respond to the usual means that a child has of telling them that he wants to be picked up, then the child will develop an alternative behavior that meets his needs in his own particular social setting. Many children, when they want to be picked up, will lift their arms to communicate this desire. However, some don't. Some have learned that patting their parents' legs will work, others know that grabbing their parents' clothing will achieve the desired result. One child, whose grandmother was wheelchair-bound, had learned to back up to her in order to get himself picked up and held.

However, as children gain conceptual ground, they may very well be able to accomplish a given behavior, but they may elect not to do so for reasons of their own. For example, a normal child of three years who does not pass the item, "Usually stops what he is doing when you say 'No' or 'Don't' to him" may not do so for a variety of reasons. He may be (and often is) in the middle of a power struggle with his mother. In other words he may be so determined to show her that he has a mind of his own and wants to make his own decisions, that he will ignore most of the demands she makes regardless of the fact that he will be punished for this behavior. In this particular case, the reason for the failure to pass the item that is most often given by parents is, "No, he doesn't do that, he ignores me." Thus, in this case the child is cognitively able to pass the item, but does not do so because he is performing the alternate "ignoring" or "defying" behavior.

Administrators of a scale which is in the process of development must be well versed enough in the normal course of development to know when a child should be cognitively and physically matured enough to be able to achieve a given behavioral item. With this knowledge, he or she can begin collecting valuable information about the alternative behaviors a child may exhibit which affect

None of these behaviors are maladaptive in their own social setting. The child is communicating and his social contacts are responding. Some of these kinds of alternative behaviors show up often enough that they will be used in the rewording of the items to better describe common means of communicating a social desire. Others, such as with the boy who backed up to his grandmother, do not occur often enough to be included in the scale item. In fact this behavior is so specialized in its communicative ability, that probably few people outside of his home understand what it is that the child wants when he backs up to them. For this reason, this behavior becomes inappropriate for use with adults or older children outside of the child's home.

It must be stressed that all children have some behaviors that are communicative only in their own social setting. For instance, some children have words for things which may have grown out of their earlier inability to pronounce a given word. One family this investigator knows, uses the term didi aha to mean a chocolate chip cookie. This term was all that the youngest child in the family could say when she was learning to speak; it was considered to be "cute" and was adopted by the family as an interesting word for their

vocabulary. Although this term has no significance for anyone unenlightened about its meaning, for that family its communicative purpose is clear.

The important difference between an innocuous alternative behavior and one that can be seen as having negative consequences is that in the former instance the behavior can be translated into another form so that other individuals a person meets can understand what he is trying to tell or show them. The latter behavior is one which is not translatable. The child exhibiting it has no other behaviors in his repertoire which enable him to get his point across. If the point involves a valuable area in social development such as a young child's ability to get himself picked up by adults, then it is important to find out about the idiosyncratic nature of this behavior in order to broaden the child's repertoire.

There are two other kinds of alternative behaviors exhibited by children. A child may not be able to pass an item because his physical handicap(s) make it impossible for him to do so. Or, a child may have a social handicap which is equally incapacitating. The autistic children particularly evidenced this problem. They didn't lift their arms to be held because they simply didn't like being held. A listing of all of these kinds of alternative behaviors that were collected is available in Appendix G.

## CHAPTER V

### Summary, Discussions and Conclusions

The primary purposes of this research were to establish:

- 1) the appropriateness of the ordering of the items developed for the Children's Adaptive Behavior Scale (CABS);
- 2) the ability of each section and each individual item to discriminate between the different experimental groups and the control group;
- 3) the ability of each section and each individual item to discriminate between the different age levels;
- 4) the collecting of alternative behaviors which children display;
- 5) the effectiveness with which individual items produced valuable information about children, i.e. which items can be retained and which should be excluded in the future edition of the scale; and
- 6) the ease or difficulty that parents experienced in trying to understand and respond to each item.

In Chapter IV, data were presented which fulfilled the first four of these purposes. It was established that all of the sections met the requirements for reproducibility, i.e. the items were consistently found to be in a hierarchical order from the simplest to the most complex. There were some items that needed to be rearranged to a

higher or lower level of difficulty to improve the reproducibility of each section and this too was accomplished in Chapter IV (see Tables 3, 24, 35, 62, and 89).

Each section was found to discriminate between different groups and different age levels at the .01 level of confidence. Therefore, every section will be retained in the CABS. Some individual items, however, did not meet this criterion level of .01 or above for discriminating between groups and different age levels. A discussion of these items will be included in the Discussion of Items section of Chapter V.

Alternative behaviors reported for the children were described in detail in Appendix G. These alternative behaviors will be used as a basis for future lists of alternative behaviors to be established by other staff members of the Children's Adaptive Behavior Scale Project. Each particular list will contain alternative behaviors which are keeping a child from being able to progress further in his social development. For example, one list might be:

1. Seldom watches moving things.
2. Reacts to people and objects in the same way.
3. Gets upset when anyone but the primary caretaker comes near.
4. Runs away from most people.

In the Adaptive Behavior Scale (1974) alternative behaviors such as the ones noted above are also arranged in lists. If the list contains four items, the child receives a positive score of four if none of the items apply to him. If one item does apply, the score he receives is three, which is obtained by subtracting that one item from the total of four. If all four items are checked, the score is then zero.

The collecting of alternative behaviors in the Social and Personal Responsibility areas which was accomplished in this research effort is only the first step in the formation of these lists. There were not enough severely socially handicapped children in the sample to enable the collecting of a sufficient number of alternative behaviors to develop these lists. When a large enough sample has been collected, the behaviors will need to be put into categories (e.g. the sample above might be the Personal Awareness Alternate Behaviors list). Then they will have to be pilot and field tested in the same manner as was used by this researcher, and changes will be made based on the results of that research effort.

The maladaptive (Part II) behaviors which were elicited from parents with the question "What kinds of things does your child do that you find annoying or hard to live with?" (see Appendix C) constitute only a first effort in the

establishment of the final pool of these behaviors. A similar question will be asked each time a new Domain of the scale is pilot or field tested. When all of the Domains have been field tested, the large number of mal-adaptive behaviors that have been collected will be used as a basis for the development of Part II of the Children's Adaptive Behavior Scale. The compilation which has been achieved at this time is reported in Appendix F.

The effectiveness of individual items in producing valuable information about children, and the degree of difficulty that parents experienced in trying to understand the individual items will be discussed in the Item Analysis section which follows.

#### Discussion of Items

##### Social Domain Personal Awareness Section

#### Item 0. Stares into space; does not actively look at things.

Only one child was unable to receive credit for any of the positive Personal Awareness items. Thus the discrimination between groups is limited to a significance level of only .15. A larger sample including more severely handicapped children should increase the probability that the zero item is able to discriminate between groups. The discrimination between age levels is .01 based on the fact that the child who failed the section was in the youngest age group.



The zero item provides the valuable information of whether or not a child is able to pass any items in a section. Because of misinterpretations by parents of the use for which this item was intended, the zero items have all been reworded to say:

"Can do none of the above."

All of these zero items will be reordered to the last position in the section.

Item 1. Sometimes watches moving things.

Item one discriminates for groups but not between different age levels at the .01 level of significance. The three children who did not pass the item were very dissimilar in age, but for that reason alone it can be seen that the item illustrates a very important deficit in the children who failed it, and the item should therefore be retained.

The wording remains the same.

Item 2. Sometimes watches people when they move around.

Item two also discriminates between groups at the .01 level of confidence, but again the children who passed it were very dissimilar in age, which produced only a .4 significance level between ages. The fact that most but not all children passed this item reflects its ability to highlight important deficits.

The wording remains the same.

Item 3. Recognizes his mother.

Item three was not significant at the .01 level for either different groups or age levels. However, it is able to reflect particular deficits. This is true especially for the four-year-old child who did not pass it.

The wording remains the same.

Item 4. Recognizes other family members.

The discrimination between age levels for this item was above the .01 level of significance, but group discrimination was poor (.5). The item provides valuable information nonetheless, on the twelve month old and the two forty-eight month old children who missed it.

The wording remains the same.

Item 5. Recognizes people other than family.

This item meets .01 criteria for both group and age level discriminations.

The wording remains the same.

Item 6. Becomes serious or watchful when he sees someone crying.

This item meets .01 criteria for both group and age level discriminations.

The wording remains the same.

Item 7. Knows the names of people close to him like friends and neighbors.

Item 7 does not discriminate between groups very well, but as a developmental item (discriminations between

younger and older children) it exceeds the .01 level of confidence.

The wording has been simplified to read:

"Knows the names of people close to him."

Item 8. Has information about others such as their job or thier relationship to him, e.g. teacher, sister.

Item eight meets the discrimination criteria for both group and age levels. It also is particularly successful in separating the accomplishments of normal from handicapped children.

The wording of this item did produce difficulties. It has been reworded to read:

"Has information about other people such as what they do for a living, where they go to school, or their telephone numbers."

The revised version of the Personal Awareness section including reordering and rewording is reported in Table 108.

Social Domain  
Body Contact Section

Item 0. Looks away or arches his back when you try to pick him up.

Because of a reporting error from the computer, there are no significance levels obtained for this item. Since the item merely reflects the failure to pass any positive items on the scale, a significance score is unnecessary.

Table 108

Personal AwarenessRevised Section

1. Sometimes watches moving things.
2. Sometimes watches people when they move around.
3. Recognizes his mother.
4. Recognizes other family members.
5. Recognizes people other than family.
6. Becomes serious or watchful when he sees someone crying.
7. Knows the names of people close to him.
8. Has information about other people such as what they do for a living, where they go to school, or their telephone numbers.
0. Can do none of the above.

The wording of the item caused the same difficulty that was reported for the zero item in the Personal Awareness section. It has been revised to read:

"Can do none of the above."

It has been reordered to the last position in the section.

Item 1. Lifts his arms for you to pick him up.

Item one does not significantly discriminate between groups at the .01 level, but its ability to separate age expectations is above this level.

Group differences are confounded because control children miss the item at younger ages, but some experimental children miss it at much more advanced ages. The autistic group and the developmentally delayed group would have had many more failures if their samples had included younger children.

The failure of this item for older children provides very valuable information.

There were many other ways a child could communicate his desire to be picked up, but for most children the behavior described in Item one is a part of their repertoire for communicating this desire.

The wording therefore remains the same.

Item 2. Sometimes likes you to hold him or swing him in circles.

Item two cannot be said to differentiate groups because only one subject failed the item. The sample is not large enough to fully tap the strength or weakness of the item for this purpose.

The age differences did not reflect high discrimination ability because the child who failed the item was in the three month rather than the one month category. Again, a larger sample would be better able to reflect the significance level.

The wording has been changed to reflect the nature of the physical contacts of many of the older children. It has been revised to read:

"Sometimes likes you to hold him or swing him in circles; or to dance or wrestle with him."

Item 3. Giggles or laughs when you tickle him.

Item three does not discriminate between groups well enough, but its level of significance is above .01 for the different age levels. For this reason, it was particularly effective in reflecting poor development in the four-year old child who failed it.

The wording remains the same.

**Table 109****Body Contact****Revised Section**

1. Sometimes likes you to hold him or swing him in circles, or to dance or wrestle with him.
2. Lifts his arms for you to pick him up.
3. Giggles or laughs when you tickle him.
0. Can do none of the above.

Social Domain  
Personal Interaction

Item 0. Actively looks away from you.

Only one child could not pass any of the Personal Interaction section items.

The item will be reworded to read:

"Can do none of the above."

This zero item will then be reordered to the last position in the section.

Item 1. Cries, pouts, or tells you when he's hurt or unhappy.

Since only one child who was three months of age failed this item, it does not show adequate significance levels. A larger sample must be obtained before this information can be trusted.

The wording remains the same.

Item 2. Smiles or tries to talk to you when you smile and talk to him.

Item two meets discrimination criteria between age levels, but not between groups. Group information is confounded because it was the younger control children who missed the item, but older experimental children who did. The very good age difference significance level allows for useful information when an older child cannot pass the item.

The wording remains unchanged.



Item 3. Likes you better than people he doesn't know as well.

Item three has the same difficulty as Item two. Group discrimination is not acceptable, but age differences are discriminated at greater than the .01 level of confidence.

The item was reworded as follows:

"Prefers being with certain people."

Item 4. Tries to get you to notice him by smiling, calling you, or showing off.

Item four meets the .01 criterion for discrimination between different groups and different age levels.

The item has been expanded to read:

"Tries to get your attention by smiling, making a noise, calling your name, or showing off."

Item 5. Child often plays by himself; he does not always depend on others to keep him occupied.

Item five meets discrimination criteria for age levels, but not for groups.

The item has been reworded to read:

"Sometimes plays by himself and keeps himself occupied."

Item 6. Calls or comes to you for help when he's in trouble.

Item six meets discrimination criteria.

It has been slightly reworded to read:

"Calls your name or comes to you for help when he's in trouble."

Item 7. Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers.

The discrimination between groups in item 7 is once again confounded because some older handicapped children failed the item while only younger control subjects did. The discrimination between age levels is above the .01 significance level.

The item's wording remains unchanged.

Item 8. Is often loving toward brothers or sisters or to family pets.

Item eight meets discrimination criteria. It has been changed to read:

"Is often loving toward other children or to pets."

Item 9. Lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner.

Item nine meets the discrimination criterion for age, but does not quite meet criterion level for significance between groups.

The item has been rephrased to read:

"Likes to show you or tell you when he's done something good like eating his dinner or putting his toys away."

Item 10. Likes to show you or tell you about things that interest him.

Although item ten has very good discriminability, it is similar enough to item nine that it has been deleted in order to save time for both administrator and parents.

Item 11. Usually plays well with other children.

Item eleven was not a good item because it tried to globally tap what the entire future Play Domain of the CABS will be working toward. It has been deleted.

Personal Responsibility Domain  
Moral Development Section

Item 0. Child does only what he wants to do.

Item zero has been reordered to the last position on the scale and has been reworded to read:

"Can do none of the above."

Item 1. Usually stops what he is doing when you say "No" or "Don't" to him.

This item did not meet criterion standards for discrimination between groups, but exceeded the criterion for different age levels.

Item one elicited a great deal of valuable information about children, but it was a difficult item to administer fairly because children who received credit for the item varied greatly in the ease with which their activities were stopped by a verbal command from the parent.

Table 110

Personal InteractionRevised Section

1. Cries, pouts, or tells you when he's hurt or unhappy.
2. Smiles or tries to talk to you when you smile and talk to him.
3. Prefers being with certain people.
4. Sometimes plays by himself and keeps himself occupied.
5. Tries to get your attention by smiling, making a noise, calling your name, or showing off.
6. Is often loving toward other children or to family pets.
7. Calls your name or comes to you for help when he's in trouble.
8. Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers.
9. Likes to show you or tell you when he's done something you'll like, such as eating his dinner or putting his toys away.
0. Actively looks away from you.

Some children were quite obedient, but many others were far less so. In order to get a clearer meaning to a response on this behavior, the item has been divided into two new ones. They are as follows:

"Usually quickly stops what he is doing when you say 'No' or 'Don't' to him."

"Stops what he is doing when you tell him 'No' or when you threaten to punish him if he doesn't."

Item 2. Sometimes resists when you tell him to do something.

Item two meets discrimination criteria between age levels, but not between groups. This item was only failed when a child was unable to understand commands from his parents. For this reason it will be left out of this section. A similar item may possibly be placed in the future Self-Direction Domain of the scale.

Item 3. Usually remembers not to touch things he's been told to stay away from.

Item three meets discrimination criteria.

The only problem with this item is the differentiation between remembering a prohibition and actually staying away from the object. It has been reworded to read:

"Stays away from things you've told him not to touch."

Item 4. Stays away from dangerous things like medicines, moving cars, or fire.

This item discriminates well beyond the criterion level.

The wording remains unchanged.

Item 5. Frowns, scolds, or tattles when someone else does something wrong.

This item meets criteria for discriminability.

The wording remains unchanged.

Item 6. Waits for his turn with a toy or at a game.

Item 7. Follows the rules of a game when he plays with other children.

Both items six and seven discriminated between age levels, and came close to criterion levels for differentiating between groups. However, the items try to cover an area (play) which is too broad to be reflected by responses to two items. All play behaviors should be included in the Play Domain, and these two have been deleted for that reason.

Item 8. Gives excuses for why he did something wrong.

Item eight meets discrimination criteria.

The wording remains unchanged.

Item 9. Usually dependable; does jobs he's been told to do without help, like putting his toys away or picking his clothes up.

At .02 this item comes very close to meeting the high .01 criterion set for discriminability between groups. It exceeds the criterion for different age levels.

The item remains unchanged.

Item 10. Returns things he has borrowed.

Item ten has been found to be both ambiguous and a behavior which could more profitably be expected from older children than were in this sample. It has been deleted.

Item 11. Very dependable; has jobs to do every day which he does without being reminded, like making his bed or taking care of his clothes.

Item eleven did not meet discrimination criteria. Since item nine is very close in meaning to this one, item eleven has been deleted.

Personal Responsibility Domain  
Altruistic Behavior Section

Item 0. Refuses to help others.

Item zero has been reworded and repositioned. It now reads:

"Can do none of the above."

Item 1. Helps you do things like carrying things for you, or putting things away for you.

This item meets criteria for discriminability.

It has been slightly broadened to read:

"Helps you by handing you things or putting things away for you."

Table 111

Moral DevelopmentRevised Section

1. Stops what he is doing when you tell him "No" in a very firm voice, or when you threaten to punish him if he doesn't.
2. Usually quickly stops what he is doing when you say "No" or "Don't" to him.
3. Stays away from most things you've told him not to touch.
4. Stays away from dangerous things like medicines, moving cars, or fire.
5. Frowns, scolds, or tattles when someone else does something wrong.
6. Usually dependable; does jobs he's been told to do without help, like putting his toys away or picking his clothes up.
7. Gives excuses for why he did something wrong.
0. Can do none of the above.



Item 2. Asks if he can help you do things like cooking or cleaning.

This item meets criteria for discriminability.

The verbal requirement was not upheld in the administration of the item, since it was soon obvious that many children saw no need to ask permission to help a parent. They simply started to help.

The item has been revised to read:

"Helps you do things like cooking or cleaning."

Item 3. Usually tries to help other children do the right things.

This item met criteria for discriminability.

The wording remains the same.

Item 4. Apologizes or tries to do something nice when he has been unkind.

This item meets criteria for discriminability.

The wording remains the same.

Item 5. Tries to get help for a child who is hurt or crying.

This item meets criteria for discriminability.

The wording remains the same.

Item 6. Comforts an unhappy person by talking to him or offering something to him to make him feel better.

This item meets criteria for discriminability.

The wording has been expanded to:

"Comforts an unhappy person by hugging him, talking to him, or offering him something to make him feel better."

Table 112

Altruistic BehaviorRevised Section

1. Helps you by handing you things or putting things away for you.
2. Helps you do things like cooking or cleaning.
3. Comforts an unhappy person by hugging him, talking to him, or offering something to make him feel better.
4. Apologizes or tries to do something nice when he's been unkind.
5. Tries to get help for a child who is hurt or crying.
6. Usually tries to help other children do the right things.
0. Can do none of the above.

Item 7. Generously shares his toys without being told to do so.

This item has been deleted because it more properly belongs in the Play Domain.

Conclusions

At this point the Children's Adaptive Behavior Scale's Social and Personal Responsibility Domains have been revised (see Tables 108 to 112). All sections of the Social and Personal Responsibility Domains have been found to discriminate between different experimental groups and the control children, and between different age levels at the .01 level of significance or above. It is expected that this same finding will result after a national field testing of the Domains has been completed.

One new item has been included in the Moral Development section, many items have been reworded, and several items have either been left out entirely or have been excluded for use in another Domain of the CABS. When the full CABS is field tested on a national level by staff members of the Children's Adaptive Behavior Scale Project, the revised Social and Personal Responsibility Domains will once more be put through rigorous analysis in order to establish any further reordering or revising of items.

Alternative behaviors reported in Appendix G and Maladaptive behaviors listed in Appendix F have been collected for future Scale development efforts by the CABS Project. Recommendations have also been made regarding the inclusion of certain items that have been excluded from these Domains, e.g. the placing of all play-related behaviors in the Play Domain alone.

The Social and Personal Responsibility Domains of the Children's Adaptive Behavior Scale are now relatively complete. Further collecting of alternative behaviors is necessary, but that effort can only be accomplished when more scale development and field testing is done for other related Domains, i.e. Play and Self-Direction.

The Social and Personal Responsibility Domains are capable of reflecting important deficits in the general social development of all children, but are particularly able to highlight deficits in handicapped children. The items have been created to measure discrete, observable phenomena and have been found to be highly successful in attaining this end.

The user of these Domains should feel relatively confident of their ability to predict a certain level of adaptive social competence in any child under the age of six.

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APPENDIX A  
PILOT TEST SCALE

Social Development

Check all items that apply.

Children up to one year of age.

Check here if the  
item is confusing.

- |     |   |     |
|-----|---|-----|
| ___ | 1. He cries when he's unhappy.  | ___ |
| ___ | 2. He watches moving things.  | ___ |
| ___ | 3. He watches people when they move around.   | ___ |
| ___ | 4. He smiles or coos at someone who talks or smiles at him.                                   | ___ |
| ___ | 5. He giggles or laughs when someone he knows tickles him.                                    | ___ |
| ___ | 6. He lifts his arms so he can be picked up.  | ___ |
| ___ | 7. He sometimes likes to be held, carried, or swung in circles.                               | ___ |
| ___ | 8. He likes his mother better than people he doesn't know as well.                            | ___ |
| ___ | 9. He stays close to his mother in strange places.  | ___ |
| ___ | 10. He's shy with strangers at first.   | ___ |
| ___ | 11. He tries to get people to notice him by trying to talk, banging on something, or smiling. | ___ |
| ___ | 12. When he's in trouble he calls, crawls, or walks to someone for help.                      | ___ |

## Social Development

Check all items that apply.

Children from one to two years of age.

Check here if the  
item is confusing.

- |                          |   |                          |
|--------------------------|---|--------------------------|
| <input type="checkbox"/> | 1. He cries when he's unhappy.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 2. He watches moving things.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 3. He watches people when they move around.   | <input type="checkbox"/> |
| <input type="checkbox"/> | 4. He smiles and tries to talk back to a person who smiles and talks to him.                        | <input type="checkbox"/> |
| <input type="checkbox"/> | 5. He giggles or laughs when you tickle him.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 6. He lifts his arms so he can be picked up.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 7. He sometimes likes to be held, carried, or swung in circles.                                     | <input type="checkbox"/> |
| <input type="checkbox"/> | 8. He likes his mother better than people he doesn't know very well.                                | <input type="checkbox"/> |
| <input type="checkbox"/> | 9. He stays close to his mother in strange places.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 10. He's shy with strangers at first.   | <input type="checkbox"/> |
| <input type="checkbox"/> | 11. He tries to get his mother to notice him by calling her, showing off, or climbing onto her lap. | <input type="checkbox"/> |
| <input type="checkbox"/> | 12. He enjoys being with other children.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 13. He sometimes won't do what his mother tells him to do.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 14. He shows he likes you by hugging or kissing you.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 15. He calls or goes to someone for help when he's in trouble.                                      | <input type="checkbox"/> |

## Social Development

Check all items that apply.

Children from two to six years of age.

Check here if the  
item is confusing.

- |                          |  |                          |
|--------------------------|--|--------------------------|
| <input type="checkbox"/> | 1. He cries when he's unhappy.   | <input type="checkbox"/> |
| <input type="checkbox"/> | 2. He watches moving things.   | <input type="checkbox"/> |
| <input type="checkbox"/> | 3. He watches people when they move around.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 4. He smiles and talks back to someone who smiles and talks to him.                                    | <input type="checkbox"/> |
| <input type="checkbox"/> | 5. He giggles and laughs when you tickle him.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 6. He sometimes likes to be held, carried, or swung in circles.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 7. He likes his mother better than people he doesn't know as well.                                     | <input type="checkbox"/> |
| <input type="checkbox"/> | 8. He likes to be with other children and adults.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 9. He shows he likes you by hugging, kissing, or touching you.   | <input type="checkbox"/> |
| <input type="checkbox"/> | 10. He calls or goes to his mother or another person for help when he's in trouble.                    | <input type="checkbox"/> |
| <input type="checkbox"/> | 11. He sometimes won't do what other people tell him to do.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 12. He usually plays well with other children.   | <input type="checkbox"/> |
| <input type="checkbox"/> | 13. He usually shares toys and other things well.  | <input type="checkbox"/> |
| <input type="checkbox"/> | 14. He talks with other people and doesn't interrupt them all the time.                                | <input type="checkbox"/> |
| <input type="checkbox"/> | 15. He gives you presents like drawings, food, or flowers.   | <input type="checkbox"/> |
| <input type="checkbox"/> | 16. When he sees someone crying, he watches them or looks serious.                                     | <input type="checkbox"/> |
| <input type="checkbox"/> | 17. He comforts an unhappy person by talking, touching, or offering something to make him feel better. | <input type="checkbox"/> |

### Personal Responsibility

Check all items that apply.

Check here if the  
item is confusing.

- |       |   |       |
|-------|---|-------|
| _____ | 1. He usually stops what he is doing when someone says "No" or "Don't" to him.  | _____ |
| _____ | 2. He remembers not to touch things he's been told to stay away from.   | _____ |
| _____ | 3. He helps others do things like carrying things for them, or putting things away for them.                          | _____ |
| _____ | 4. He lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner. | _____ |
| _____ | 5. He stays away from dangerous things like medicines, moving cars, or fire.  | _____ |
| _____ | 6. He gives reasons for why he did something wrong.   | _____ |
| _____ | 7. He frowns, scolds or tattles when someone else does something wrong.   | _____ |
| _____ | 8. He's able to wait for his turn with a toy or at a game.  | _____ |
| _____ | 9. He usually shares toys and other things well.  | _____ |
| _____ | 10. He follows the rules of a game when he plays with other children.   | _____ |
| _____ | 11. He returns what he has borrowed.  | _____ |
| _____ | 12. He does jobs he's been told to do without help.   | _____ |
| _____ | 13. He apologizes or tries to do something nice when he has been rough or unkind to someone else.                     | _____ |
| _____ | 14. He tries to get help for a child who is hurt or crying.   | _____ |
| _____ | 15. He has jobs to do every day which he does without much reminding like making his bed.                             | _____ |

**Negative Social Behaviors**

Check all that apply.

Check here if the  
item is confusing.

- \_\_\_\_\_ 1. He doesn't cry very much, even when he's uncomfortable. \_\_\_\_\_  
For instance he'd rather suck his thumb than cry.
- \_\_\_\_\_ 2. He likes to suck, look at, or play with his own hands \_\_\_\_\_  
and feet more than he likes to look at other people  
or things.
- \_\_\_\_\_ 3. He looks away or gets upset when people talk, smile, \_\_\_\_\_  
or try to play with him.
- \_\_\_\_\_ 4. He doesn't particularly seem to enjoy being held or \_\_\_\_\_  
swung in circles.
- \_\_\_\_\_ 5. He doesn't seem to like any one person any better \_\_\_\_\_  
than another.
- \_\_\_\_\_ 6. He doesn't giggle or laugh with other people very much. \_\_\_\_\_
- \_\_\_\_\_ 7. He doesn't call or go to someone when he gets hurt or \_\_\_\_\_  
needs help.
- \_\_\_\_\_ 8. He doesn't pay any attention to other children. \_\_\_\_\_
- \_\_\_\_\_ 9. He doesn't talk to other people. \_\_\_\_\_

### Negative Personal Responsibility Behaviors

Check all that apply.

Check here if the  
item is confusing.

- |       |  |       |
|-------|--|-------|
| _____ | 1. He doesn't stop what he's doing when someone says "No" or "Don't" to him.               | _____ |
| _____ | 2. He likes to make you mad by getting into things he's not supposed to.                   | _____ |
| _____ | 3. Punishment seems to have no effect on him.  | _____ |
| _____ | 4. He always tries to get his own way.   | _____ |
| _____ | 5. He often has temper tantrums.   | _____ |
| _____ | 6. He won't help other people do things.   | _____ |
| _____ | 7. He won't do what he's supposed to do unless someone stays with him and makes him do it. | _____ |
| _____ | 8. He tries to keep things he has borrowed.  | _____ |
| _____ | 9. He won't share or take turns.   | _____ |
| _____ | 10. He never tries to explain why he did something wrong.                                  | _____ |
| _____ | 11. He never seems sorry when he has hurt someone.   | _____ |
| _____ | 12. He never apologizes for doing something wrong.   | _____ |
| _____ | 13. He tries to get other children to do bad things.                                       | _____ |
| _____ | 14. He must always be reminded to do what he is supposed to do.                            | _____ |

## APPENDIX B

## FIELD TEST SCALE

## Personal Awareness

Check here if the  
item is confusing.

- |       |  |       |
|-------|--|-------|
| _____ | 0. Stares into space; does not actively look at things.  | _____ |
| _____ | 1. Sometimes watches moving things.  | _____ |
| _____ | 2. Sometimes watches people when they move around.   | _____ |
| _____ | 3. Recognizes his mother.  | _____ |
| _____ | 4. Recognizes other family members.  | _____ |
| _____ | 5. Recognizes people other than family.  | _____ |
| _____ | 6. Becomes serious or watchful when he sees someone crying.  | _____ |
| _____ | 7. Knows the names of people close to him like friends<br>and neighbors.                                 | _____ |
| _____ | 8. Has information about others such as their job or their<br>relationship to him, e.g. teacher, sister. | _____ |

NOTE: The field test scales in this Appendix do not contain the lines which were placed under each item when the scale was administered.

**Body Contact**

Check here if the  
item is confusing.

- \_\_\_\_\_ 0. Looks away or arches his back when you try to pick him up. \_\_\_\_\_
- \_\_\_\_\_ 1. Lifts his arms for you to pick him up. \_\_\_\_\_
- \_\_\_\_\_ 2. Sometimes likes you to hold him or swing him in circles. \_\_\_\_\_
- \_\_\_\_\_ 3. Giggles or laughs when you tickle him. \_\_\_\_\_



**Personal Interaction**

Check here if the  
item is confusing.

- |       |  |       |
|-------|--|-------|
| _____ | 0. Actively looks away from you.   | _____ |
| _____ | 1. Cries, pouts, or tells you when he's hurt or unhappy.   | _____ |
| _____ | 2. Smiles or tries to talk to you when you smile and talk to him.  | _____ |
| _____ | 3. Likes you better than people he doesn't know as well.   | _____ |
| _____ | 4. Tries to get you to notice him by smiling, calling you, or showing off.   | _____ |
| _____ | 5. Child often plays by himself; he does not always depend on others to keep him occupied.                         | _____ |
| _____ | 6. Calls or comes to you for help when he's in trouble.  | _____ |
| _____ | 7. Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers.     | _____ |
| _____ | 8. Is often loving toward brothers or sisters or to family pets.   | _____ |
| _____ | 9. Lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner. | _____ |
| _____ | 10. Likes to show you or tell you about things that interest him.  | _____ |
| _____ | 11. Usually plays well with other children.  | _____ |

## Moral Development

Check here if the  
item is confusing.

- |       |  |       |
|-------|--|-------|
| _____ | 0. Child does only what he wants to do.  | _____ |
| _____ | 1. Usually stops what he is doing when you say "No" or "Don't" to him.   | _____ |
| _____ | 2. Sometimes resists when you tell him to do something.  | _____ |
| _____ | 3. Usually remembers not to touch things he's been told to stay away from.   | _____ |
| _____ | 4. Stays away from dangerous things like medicines, moving cars, or fire.  | _____ |
| _____ | 5. Frowns, scolds, or tattles when someone else does something wrong.  | _____ |
| _____ | 6. Waits for his turn with a toy or at a game.   | _____ |
| _____ | 7. Follows the rules of a game when he plays with other children.  | _____ |
| _____ | 8. Gives excuses for why he did something wrong.   | _____ |
| _____ | 9. Usually dependable; does jobs he's been told to do without help, like putting his toys away or picking his clothes up.              | _____ |
| _____ | 10. Returns things he has borrowed.  | _____ |
| _____ | 11. Very dependable; has jobs to do every day which he does without being reminded, like making his bed or taking care of his clothes. | _____ |

**Altruistic Behavior**

Check here if the  
item is confusing.

- |       |   |       |
|-------|---|-------|
| _____ | 0. Refuses to help others.  | _____ |
| _____ | 1. Helps you do things like carrying things for you, or putting things away for you.                  | _____ |
| _____ | 2. Asks if he can help you do things like cooking or cleaning.  | _____ |
| _____ | 3. Usually tries to help other children do the right things.  | _____ |
| _____ | 4. Apologizes or tries to do something nice when he has been unkind.                                  | _____ |
| _____ | 5. Tries to get help for a child who is hurt or crying.   | _____ |
| _____ | 6. Comforts an unhappy person by talking to him or offering something to him to make him feel better. | _____ |
| _____ | 7. Generously shares his toys without being told to do so.  | _____ |

APPENDIX C  
DEVELOPMENTAL HISTORY

Child's Name \_\_\_\_\_

Male \_\_\_\_\_ Female \_\_\_\_\_

Date of Birth \_\_\_\_\_

Weight at Birth \_\_\_\_\_

Child's Apgar score at birth, if known \_\_\_\_\_

Hospital in which the child was born, please include city and state:

\_\_\_\_\_  
\_\_\_\_\_

If your child has ever required hospitalization, please explain why and include the amount of time he/she was in the hospital:

\_\_\_\_\_  
\_\_\_\_\_

If you know of any reason why your child may need to be hospitalized in the future, please explain briefly:

\_\_\_\_\_  
\_\_\_\_\_

Mother's Occupation \_\_\_\_\_

Father's Occupation \_\_\_\_\_

Number of years of schooling the child's mother has completed \_\_\_\_\_

Number of years of schooling the child's father has completed \_\_\_\_\_

What kinds of things does your child do that you find annoying or hard to live with:

## APPENDIX D

## RELEASE FORM

I give my consent to the bearer of this form to ask for the Apgar score on my child's hospital records. I understand that this score is a global measure of my child's physical condition at birth. This consent is for the attainment of the Apgar score alone. I do not give my consent for any other information to be released.

\_\_\_\_\_  
Parent's Signature

Name of child \_\_\_\_\_

Date of birth \_\_\_\_\_

Hospital, please include city and state \_\_\_\_\_

\_\_\_\_\_

APPENDIX E  
PERMISSION FORM

I understand that this research project has been approved by the Franklin County Program for the Mentally Retarded, and that the information being sought from me will be used in the development of the Children's Adaptive Behavior Scale.

The data being collected will include growth and development information about my child. I further understand that at no time will my child be personally involved, and I agree to willingly participate in the research being conducted. I understand that the information I provide will be kept private, and that neither mine nor my child's name will appear in any published form.

---

Parent's Signature

## APPENDIX F

## MALADAPTIVE BEHAVIORS

No annoying behaviors noted. 24 cases.

Slow General Growth

Underweight. 2  
 Won't Grow. 1  
 Not developing. 1  
 Very slow. 1  
 Doesn't do anything. 1

High Activity Level

Very Active. 4  
 Hyperactive. 3  
 Runs all the time. 2  
 Excess energy. 1  
 Jumps around. 1  
 Never sits. 1  
 Constant motion. 1  
 Runs through the house. 1

Sleeping Problems

Doesn't like to sleep. 2  
 Doesn't sleep well. 2  
 Won't sleep. 2  
 Stays awake at night. 1  
 Stays up too late. 1  
 Gets up early. 1  
 Doesn't get up. 1

Eating Problems

Won't eat dinner. 2  
 Spills frequently. 2  
 Always hungry. 1  
 Impatient, must be fed immediately. 1  
 Holds breath and turns red when doesn't get bottle soon enough. 1  
 Won't eat meat. 1  
 Picky eater. 1  
 Can't feed himself. 1  
 Spits up a lot. 1  
 Doesn't eat well. 1

Communication Problems.

Loud or noisy. 3  
 Screams. 2  
 Talks incessantly. 2  
 Murmurs to you a lot. 1  
 Interrupts. 1  
 Outbursts of noise. 1  
 Gets angry or frustrated when he tries to tell you something. 1  
 Monotone. 1  
 Has speech problem. 1  
 Won't talk. 1  
 Lack of communication. 1  
 Lack of speech. 1  
 Lack of ability to understand problems. 1

Diaper Changing and Dressing Problems

Arches back when changing diapers. 1  
 Too energetic. 1  
 Won't dress himself. 1

Toilet Training Problems

Not toilet trained. 1  
 Gets off potty chair when mother leaves. 1  
 Not good at toilet training. 1

Gross Motor Problems

Doesn't walk. 2  
 Doesn't crawl. 1  
 Doesn't sit. 1

Annoying Habits

Bangs head. 6  
 Chews nails. 2  
 Sucks fingers. 2  
 Sucks thumb. 1  
 Puts hand in and out of mouth. 1  
 Bites fingers. 1  
 Pops her lips like she's starving. 1  
 Grinds teeth. 1



Annoying Habits (cont.)

Sloppy, won't hang up his coat. 1  
 Won't clean up. 1  
 Accident prone. 1  
 Always carries things, which means he can't do two-handed things. 1  
 Makes faces. 1  
 Has a stuffy nose when under stress. 1  
 Vomits when upset. 1

Physical Abuse of Others

Pulls Hair. 2  
 Hits. 4  
 Pinches. 1  
 Grabs. 1  
 Scratches. 2  
 Digs in face. 1  
 Rough. 1

Aggressive Behavior

Fights. 2  
 Mean to others. 1  
 Bothers the dog. 1

Stubbornness

Stubborn. 6  
 Is always right. 1

Demanding Own Way

Wants own way. 1  
 Tries hard to get what he wants. 1  
 Takes things he wants. 1  
 Screams for something. 1  
 Is belligerent when someone else has what she wants. 1  
 Can't take her places where she has to wait. 1

Attention Demanding Behaviors

Clingy. 2  
 Shows off. 2  
 Nags. 1  
 Wants all your attention. 1  
 Hard to occupy him. 1  
 Can't leave him alone. 1  
 Takes lots of attention. 1  
 Very dependent. 1  
 Turns mother's head when she wants her attention. 1  
 Won't let anyone but mother take care of him. 1

Lack of Obedience

Doesn't listen/refuses to obey. 10  
 Ornerly, teases and won't do what she is asked. 1  
 Comin, won't do what he is told. 1  
 Ignores mother. 1  
 Hard work to get her to do things. 1  
 Refuses to help. 1  
 Doesn't mind. 1  
 Ignores requests not to do something. 1  
     Protests or is defiant 2  
     Says "no" 1  
     Argues 1  
     Screams 1  
     Runs and hides 1  
     Smarts off 1  
     Talks back 1  
     Calls people names like "Dummy" and "Stupid" 1

Whining 10

Jealousy 2

Manipulative Behaviors 1

Tattling 1

Crying

Cries frequently. 3  
 Crying is hard to stop. 1  
 Won't respond for a minute or two. 2  
 Dramatic crying. 1

Moody 1

Irritable 2

Temper Tantrum Behaviors 11

Screams. 4  
 Throws self down or lays on floor. 3  
 Hits. 2  
 Hits head. 1  
 Hits people. 1  
 Kicks. 1  
 Knocks objects off tables. 1  
 Sits on floor, crosses leg, and refuses to move. 1

Getting Into Things 8

Gets into everything 1  
 Pulls things out of closets. 1  
 Empties bottles 1  
 Tears up paper. 1  
 Throws things into toilet. 1  
 Eats cigarette butts. 1  
 Can't have things around. 1  
 Grabs things. 1  
 Climbs on things. 1

Throws Things

Throws glass on floor. 2  
 Throws food on floor. 1  
 Throws toys. 1

Destructive 2

Writes on wall. 1  
 Makes a mess with other children. 1  
 When tired, he does things to make me mad, like tearing down pictures. 1

Miscellaneous

Is spoiled. 2

Lacks self control. 1

Can't see well. 1

Has thrush. 1

Is time consuming caring for him. 1

Defeatist attitude, doesn't want to respond, doesn't like himself,

Angry with himself. 1

APPENDIX G  
ALTERNATIVE BEHAVIORS

Personal Awareness Section

Alternative Behaviors

Item 1. Sometimes watches moving things.

Seldom watches anything. 4 year old Autistic child.  
Is learning to. 5 year old Autistic child.

Item 2. Sometimes watches people when they move around.

Sometimes isn't aware people are there. 3 year old Autistic.

Item 3. Recognizes his mother.

Recognizes her voice. Five different children.

Item 4. Recognizes other family members.

Recognizes their voices. 18 month old blind child.

Item 5. Recognizes people other than family.

Knows people he doesn't like. 6 year Autistic.  
Cries when she sees strangers. 9 month CP child.

Item 6. Becomes serious or watchful when he sees someone crying.

Runs out of the room. 5 year Autistic.  
Screams. 3 year Autistic.  
Seeks mother; used to curl up in fetal position. 6 yr. Aut.  
Looks at mother. 12 month control.  
Cries with them. Eleven children.  
Laughs. Two cases; one was a 12 month old child, and the  
other was the 18 month old blind child.

Item 7. Knows the names of people close to him like friends or neighbors.

None.

Item 8. Has information about others such as their job or their relationship to him, e.g. teacher, sister.

None.

**Body Contact Section****Alternative Behaviors**

**Item 1. Lifts his arms for you to pick him up.**

Cries or whines. Three children.  
Tries to lift body up toward you. Two six month controls.  
Moves forward. Tries to get up. 2½ year CP.  
Backs up to you. 2 year control.

**Item 2. Sometimes likes you to hold him or swing him in circles.**

None.

**Item 3. Giggles or laughs when you tickle him.**

Smiles or coos. Three children.  
Mouth flies open. Doesn't laugh out loud. 1 yr. Low Apgar.  
Kicks legs. 9 month CP.

Personal Interaction Section

Alternative Behaviors

- Item 1. Cries, pouts, or tells you when he's hurt or unhappy.  
 Comes and sits on your lap. 5 year Autistic.  
 Has a temper tantrum; bangs head. 18 month control.
- Item 2. Smiles or tries to talk to you when you smile and talk to him.  
 Did before surgery, then stopped. 9 month CP.
- Item 3. Likes you better than people he doesn't know as well.  
 Friendly to everybody. 4 yr. Prem., 6 yr. DS.  
 Likes to be with men. 5 yr. control.  
 Likes to be with strangers, especially men. 5 yr. CP.
- Item 4. Tries to get you to notice him by smiling, calling you, or showing off.  
 Kicks arms and legs. 9 month CP  
 Picks up forbidden things. Three children.  
 Cries. Five Children.  
 Comes up close and stares at your face. 5 yr. CP.
- Item 5. Child often plays by himself; he does not always depend on others to keep him occupied.  
 Has to be carried all the time or he cries. 12 month Low A.  
 Stays close to mother all the time. 12 m. DD; 4 yr. Prem.
- Item 6. Calls or comes to you for help when he's in trouble.  
 Cries. Ten children.  
 Throws a fit. 12 month DD.
- Item 7. Shows he likes you by hugging or kissing you, or by giving you presents such as drawings, food, or flowers.  
 Pats my arm. 2½ year DS child.  
 Runs to greet me. 3 yr. Control  
 When I ask him to. 6 yr. Premature; 6 year Autistic.

Item 8. Is often loving toward brothers or sisters or to family pets.

Likes his stuffed animal. 12 month Control

Likes other children, but not brother. 3 year Control.

Interested but not loving. 12 month DD.

Item 9. Lets you know when he's done something good like using the toilet, putting his toys away, or eating his dinner.

Says something to indicate he's done a good thing. 7 child.

Looks at you for a response. 6 year old CP.

Claps for his self. Five children.

Item 10. Likes to show you or tell you about things that interest him.

None.

Item 11. Usually plays well with other children.

Doesn't play well with strange children. 18 month Control.



### Moral Development

#### Alternative Behaviors

- Item 1. Usually stops what he is doing when you say "No" or "Don't" to him.  
Looks at me and waits to be moved. 4 year Premature.
- Item 2. Sometimes resists when you tell him to do something.  
Does things very slowly. 6 year Control.  
Tells you reasons why he should be able to. 6 year Control.
- Item 3. Usually remembers not to touch things he's been told to stay away from.  
Fire, yes; candy, no. 5 year Control.  
Goes right back to it. 2 year DD.
- Item 4. Stays away from dangerous things like medicines, moving cars, or fire.  
Likes to light matches. 3 year Premature.
- Item 5. Frowns, scolds, or tattles when someone else does something wrong.  
Just watches them. 6 year CP.
- Item 6. Waits for his turn with a toy or at a game.  
When reminded. 4 year DS.
- Item 7. Follows the rules of a game when he plays with other children.  
None.
- Item 8. Gives excuses for why he did something wrong.  
Says "uh, oh" to himself. 2½ year DD.  
Glares at you. 3 year Control.  
Runs. 4 year Autistic.  
Anticipates "No" and says it first. 6 year Autistic.

Item 9. Usually dependable; does jobs he's been told to do without help, like putting his toys away or picking his clothes up.

None.

Item 10. Returns things he has borrowed.

When reminded. 4 year Premature.

Forgets on purpose. 6 year Control.

Item 11. Very dependable: has jobs to do every day which he does without being reminded, like making his bed or taking care of his clothes.

None.

**Altruistic Behaviors**

**Alternative Behaviors**

- Item 1. Helps you do things like carrying things for you, or putting things away for you.
- Needs hands to ambulat, can't help. 2 year CP.  
Hands things to you. 6 year CP, 2½ DS.
- Item 2. Asks if he can help you do things like cooking or cleaning.
- Just begins to do it. Ten children.  
Doesn't like to help. 3 year DD.
- Item 3. Usually tries to help other children do the right things.
- Tries to get other children in trouble by misleading them.  
18 month Control; 2 year Control.
- Item 4. Apologizes or tries to do something nice when he has been unkind.
- Pouts. 3 year DD.  
Hangs head. 2 year CP.  
Has to be reminded. 4 year Premature.
- Item 5. Tries to get help for a child who is hurt or crying.
- Tries to help the child himself. 3 year Prem., 6 yr. DS.
- Item 6. Comforts an unhappy person by talking to him or offering something to him to make him feel better.
- Hugs. Four children.  
Pats on shoulder. Four children.
- Item 7. Generously shares toys without being told to do so.
- Only toys he's not fond of. 6 year Control.  
With friends, not with siblings. 6 year Control.  
Unless they're having too much fun. 2 year Control.