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PARENTAL SEX-ROLE DIFFERENTIATION OF YOUNG CHILDREN

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Parental Sex-Role Differentiation of Young Children," submitted by Gary Herbert Jeffery in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Supervisor

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ABSTRACT

This research was aimed at studying parental sex-role differentiation (SRD) of young children. The research was primarily aimed at discovering whether parents differentially perceived male and female children of three years of age and younger. Additional questions relating to the child's age and parent's sex and the interactions between these variables were also asked. A random sample of 83 male and 96 female parents completed a specially developed semantic-differential type of questionnaire which was designed to assess parental perceptions of male and female children at each of five age levels ranging from newborn to three years. Each of the ten concepts (i.e., newborn boy, one-year-old girl, etc.) was rated on 20 seven-point bipolar adjective scales derived while designing the questionnaire.

The study was carried out in two phases, the first being the selection of the scales on which the questionnaire was based. The second phase was the actual administration of the questionnaire to the parent sample. The questionnaire, which was called the Child Description Questionnaire (CDQ) was based on three categories or aspects of the concept 'child' which were derived in a factor analysis of data obtained from ratings by 105 adults of male and female children of three years of age and under. These adults were asked to rate children on a series of 35 bipolar adjective scales originally derived from sex-differentiated descriptive data on children. The factor analysis of this data yielded three orthogonal child description factors which were labelled dynamism, disposition, and vulnerability. The scales used in

the CDQ were selected from scales originally loading in these three factors.

A total of 30 summated aspect scores were derived from each parent's questionnaire. These scores represented the ratings on each of the three aspects for each of the ten categories of children. A three-way factorial design with two repeated measures was used when analyzing the data. The ratings of both-sexed parents were analyzed relative to both-sexed children at each of the five age levels. Individual analyses were completed for each aspect.

The results suggested that, on all three aspects studied, parents perceived significant differences between children in terms of both the child's age and sex. The specific age at which sex differences were noted varied for each aspect. Significant child sex by child age interactions were found on all three aspects. On aspect one, dynamism, a significant difference between parental ratings of children was also found along with a significant interaction effect between parent's sex, child's sex, and child ages. Correlations between -.23 and .46 were found between aspect scores.

The results of the study are discussed relative to the research questions asked by the study and relative to the findings of sex-differentiated treatment of children. The theoretical implications of these findings are discussed in terms of the work of Rosenthal and Jacobsen (1969), and a modification of their position is proposed.

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CHAPTER I

INTRODUCTION

There is currently an increasing interest among social scientists and various elements of society in the nature, status, and development of sex-related behaviors. Educators, for example, have expressed concern over the wide disparity between males and females in many aspects of school performance (e.g., Pauley, 1959; Bentzen, 1966; Munpower, 1970; Sexton, 1970). A very strong interest in sex-related behavior is also found among those persons concerned with women's "liberation" and the status of women (e.g., Greer, 1971; Friedan, 1963; Kammeyer, 1964; Millet, 1970; Bardwick, 1971; Lambert, 1971). Garai and Scheinfeld, in a lengthy monograph reviewing "sex differences in mental and behavioral traits," also point out that "to make the participation of women in the labour force as efficient as their potential permits" (1968,p.171) several important questions regarding both the nature and development of sex-differences need to be answered. They feel that the questions that are particularly relevant are those pertaining to the world of work.

Much of the interest in sex related behavior is focussed on the area of sex-roles. This study is aimed at exploring one aspect of the socialization process which would appear to be involved in the development of sex-roles.

A sex-role is typically regarded as a predominantly learned set of behaviors which reflects, to a significant degree, sex-differentiated patterns of socialization and the internalization of appropriate

sex-differentiated sex-role standards. The view that these roles reflect a learning process is supported by the wide cross-cultural variety of sex-typed behaviors which can be observed. While these behaviors may have certain direct or indirect constitutional bases, an innate, instinctual, or constitutional explanation of their origin is not in itself sufficient (Money and Ehrhardt, 1972). While there is a significant inter-cultural variety of sex-typed behaviors, there is also a significant degree of intra-cultural consensus on which behaviors are considered sex-appropriate. This suggests that, whatever the original bases of these behaviors were, the behaviors continue to be shared by the various members of the culture and passed on to the developing young.

Parents are regarded as the prime socializing agents of the very young child. It is they from whom the child begins to learn his later sex-role behaviors. Research indications are that parents initiate the process which leads to the development of appropriate sex-roles when a child is very young. This appears to take the form of differential treatment of a child, on the basis of its sex, from shortly after birth.

Closely related to the topic of sex-differentiated treatment is that of sex-role differentiation (SRD). SRD is a psychological construct which Lambert (1971) refers to as representing a state of mind made up of images and expectancies of what traits, behaviors, activities, experiences, etc., are sex-linked or appropriate for one sex or the other.

This construct, in some ways, reflects the more common ideas of male and female stereotypes which have been and continue to be widely discussed in the literature. If stereotypes are considered a[illegible]n to an attitudinal dimension of males and females, the SRD construct becomes clarified. Attitudes have been considered as occurring in cognitive,

affective, and behavioral domains and in both an aware and an unaware way (Zimbardo and Ebbesen, 1969). If stereotyping is considered as represented in each of these attitudinal domains, it is akin to the definition of SRD used in this research.

Although an exhaustive review of the literature has not been completed, it is interesting to note that research on the topic of SRD, like many other psychological aspects of sex and sex-related behavior, appears to have barely begun (Lambert, 1973). Boring (1969) has pointed out that psychological researchers go through a series of steps in arriving at an important theoretical variable. He believes that the development of a variable goes from a stage of little awareness of importance, to acknowledgment of possible effects and resultant control, to a final stage where the variable itself is the principle one being studied. It would appear that the topic of SRD, as well as many psychological aspects of the topic of sex in general, is representative of those variables Boring is discussing, as these have only recently become principle variables in research studies. This view is supported by Garai and Scheinfeld (1968) who acknowledge this position and strongly recommend increased sensitivity to sex as a variable in psychological research.

Another variable which might similarly be considered is that of parental expectancies. The topic of SRD would appear to be closely related to parental expectancies. It might be suggested that parental sex-role expectancies reflect the content of the parent's SRD; hence, SRD, like these expectancies, might also be assumed to influence the types of treatment and experiences a parent gives a child. The content of a parent's SRD would also theoretically reflect his own cultural and

socialization experiences.

Delimitation and understanding of these expectancies, as well as the specific experiences a child has, are becoming of increasing importance to the study and understanding of child development. This importance is reflected in articles by Kohlberg (1968) and Escalona (1973) which deal in part with the role of the culture in a child's development. Kohlberg, specifically discussing sex differences, points that in order to understand the "hierarchical interactional stages" (p. 397) of a child's development, an effort must be made towards a clearer conceptualization of the environment. He believes that this conceptualization would involve,

> . . . analyses of (1) universal structural features of environments, (2) the order of differentiations inherent in given concepts and (3) relations between specific experiences and the child's behavioral structures, defined in terms of conflict and match (p. 397).

This research, in seeking to gain information on parental SRD, might be considered to represent the second category of analysis Kohlberg believes needed.

Escolana (1973) similarly emphasizes the need for greater clarification of various factors influencing the developmental process. In her discussion of social interaction in infancy, she states that there is a need for an "ecology" (p. 205) of young children, outlining both the child and environmental characteristics. She states that,

> . . . as has been pointed out with increasing frequency in the literature, what we lack is a comprehensive view of the totality of events and circumstances that form the matrix of normal development (p. 205).

This study is aimed specifically at discovering if parents maintain SRD of infants and young children, whether the degree of SRD

is similar [illegible] nd female children, and also if opposite sex parents shar [illegible]lar degree of SRD. These questions, particularly in terms of this age group, have been relatively unstudied. For this reason, this research is of a primarily exploratory nature and does not include specific hypotheses.

Chapter II of this paper presents a review of the literature on various aspects of sex differences and sex-roles and their development. The chapter focusses primarily on those aspects of sex-related behavior that are developing and can be detected in children of preschool age and younger. Chapter III presents the development of the specific research problems and the questions that this study seeks to answer. Chapter IV presents a discussion of the specific instrument developed to asses SRD, and Chapter V discusses the sample, methodology, and research design used in the study. Chapters VI and VII deal with the results and a discussion of these results, respectively.

CHAPTER II

RELATED LITERATURE

Sex differences have been found in a great many areas of human functioning. This chapter will review some of the vast descriptive literature on sex differences, as well as some of the theoretical literature aimed at accounting for the existence of these differences. The emphasis of the chapter will be on those sex-differences found in young children and the work directed toward understanding the development of thes ifferences.

Sex Differences

A. An Overview of Sex Differences

Tyler (1965) points out that no topic in psychology is of more lasting interest than sex differences. The first quantitative research on the topic was not begun, however, until after 1900. Much of the early research was motivated by a desire to prove that females, even though physically weaker than males, are not inherently inferior.

Garai and Scheinfeld (1968), in a brief but well-documented discussion dealing with the historical perspective on sex-differences, point out that "prior to the latter half of the nineteenth century . . . it was taken for granted that human males differed inherently from human females in their capacities for virtually every type of performance" (p. 171). They add that until the Industrial Revolution, sex-roles had been rigidly defined along traditionally established lines, in many ways

reflecting our current stereotypes. These roles were considered "to be both 'natural'--i.e., originating from biological sex-differences--and ordained by God's design" (p. 172). These authors feel that it was only "about a century ago, when co-education on the college level became more and more widely accepted" that these views began to change. With the upsurge of psychological testing in the latter part of the nineteenth century, many sex-differences began to be noted; these were, however, considered like most individual differences "as some kind of 'error'" (p. 172). These authors point out that it was not until the works of Watson on his behavioristic theory that "the effects of heredity on specific capacities were minimized or denied" (p. 173), thereby confronting the traditional sex-role beliefs and emphasizing the effects of the socializing, sex-typing process.

Interest in sex-differences and sex-related behavior is partially due to their importance and significance in this and most other cultures (Mead, 1935, 1949; Barry, Bacon and Child, 1957; D'Andrade, 1966; Montagu, 1970). In discussing one aspect of this importance, Mussen (1969) states that it is a "banal truth that an individual's sex role is the most salient of his many social roles" (p. 707). He goes on to add that:

> . . . no other social role directs more of . . . ones overt behavior, emotional reactions, cognitive functioning, covert attitudes and general physiological and social adjustment (p. 707).

The researcher working on sex-related topics encounters many difficulties. It has been suggested that discussions of the topic typically stir up emotional and unconscious resistances (Greenson, 1967). Gagnon (1968) states that the topic is entwined with moral imperatives,

conscious fantasies and unconscious desires. Greenson (1967) points out that among clinicians and their patients there is much confusion as to what is masculine and what is feminine. He, along with various others (e.g., Friedan, 1963; Kammeyer, 1964), suggests that this confusion and, also, part of the difficulty in dealing with the topic are partially a result of the socially changing nature of these roles. A related source of difficulty is found in the fact that on most measures where a sex difference is found there is a very large overlap of the distributions for each sex, with the differences being reflected in the group means and/or the sample variances (Anastasi, 1958; Tyler, 1965).

The problem is even more complex when one considers the area of sexual or psychosexual disorders (Gebhard, Gagnon, Pomeroy, and Christenson, 1965; Gagnon, 1968; Gagnon and Simon, 1967), for as Gagnon and Simon, taking a cross-cultural perspective, point out, "there is no form of behaviour sexual or nonsexual that is intrinsically deviant or deviant because of the behavior it involves" (p. 2).

Certain of the difficulties involved in the study of sex differences are manifestations of the underlying problem of the relative contributions of nature and nurture and their interactions to sex-differentiated behavior (Biller and Borstelmann, 1967; Garai and Scheinfeld, 1968; Bardwick, 1971; Harlow, 1971).

Several major reviews of the sex-differences literature have been published (e.g., Terman and Tyler, 1954; Wright, 1956; Anastasi, 1958; Tyler, 1965, 1969; Maccoby, 1966; Biller and Borstelmann, 1967; Garai and Scheinfeld, 1968; Cramer, 1971; Bardwick, 1971; Schaeffer, 1971; Money and Ehrhardt, 1972). A large proportion of the information included in these reviews is of a descriptive nature pointing out

the many physiological and psychological sex-differences that have been established.

Sex-differences have been established in a great many areas of human functioning including, for example: abstract reasoning (Maccoby, 1966b; Bennett, Seashore and Wesman, 1959), achievement (McClelland, 1953, 1964; Tyler, 1965; Roessler, 1971), adjustment and maladjustment (Coleman, 1964; Bentzen, 1966; Munpower, 1970), attitudes (Sherriffs and Jarrett, 1953; Bennet and Cohen, 1959), aggression (Sears, 1965; Bandura, Ross and Ross, 1963; Bardwick, 1971), cognitive styles (Kagan, Moss and Siegel, 1965; Witkin, Dyk, Faterson and Goodenough, 1962), intelligence (Maccoby, 1966b; Terman and Tyler, 1954; Anastasi, 1958; Tyler, 1965), interests (Allport and Vernon, 1931; Strong, 1959; Sutton-Smith, 1963), mechanical aptitudes (Tyler, 1965; Maccoby, 1966), personality (Schaeffer, 1971; Pumpian-Mindlin, 1967; Roessler, 1971; Gough, 1957, 1966), social sensitivity (Johnson, 1963; McClelland, 1964), spatial relations abilities (Terman and Tyler, 1954; Bennett, Seashore and Wesman, 1959; Tyler, 1965), and verbal fluency and language skills (Tyler, 1965; Bardwick, 1971). Various primary and secondary physiological sex differences can also be found (Hamburg and Lunde, 1966; Money and Ehrhardt, 1972; Stone, Smith and Murphy, 1973). Sex differences have been found in growth rate and size (Garn, 1958; Bentzen, 1966; Tanner, 1970), and hormonal and neurological factors (Money, 1965; Hampson, 1965; Hamburg and Lunde, 1966; Kimura, 1967; Mandell, 1967; Dalton, 1968; Moos, Kopell, Melges, Yalon, Lunde, Clayton and Hamburg, 1969; Broverman, Klaiber, Kobayashi and Vogel, 1968; Gray, 1971a, 1971b). A detailed review of the physiological sex differences found in humans is considered beyond the scope of this paper. For discussions of such work, see Beach (1965),

Hamburg and Lunde (1966), Bardwick (1971), Gray (1971a, 1971b), Money and Ehrhardt (1972), and Stone, et al. (1973).

A considerable body of research carried out on animals has also revealed a number of significant sex differences (Beach, 1965; Hamburg and Lunde, 1966; Tiger, 1969; Bardwick, 1971; Harlow, 1971; Gray, 1971a, 1971b).

Harlow (1971) in his recent book, Learning to Love, points out various sex differences in macque monkeys, many of which have certain apparent parallels in humans. He points out, for example, that male monkeys are more active and aggressive than females from early in their development and that adult females are the primary caretakers of the young, even though the male parent will, at times, carry out this function. An interesting phenomena pointed out by Harlow involves certain behaviors carried out by the mother to disattach, or weaken, the social bond between the young monkey and his mother. After the young monkey is a few months of age, the mother gradually begins to ease the child away by paying progressively less and less attention to him and at times actively physically rejecting him. Harlow suggests that a similar process is found in human mothers who effect separation by sending the young child to nursery school and/or by supplying toys to the child, such as teeter-totters, which encourage the child to interact with his peers, thereby replacing the mother-infant bond with a peer bond. Harlow states that this disattachment occurs earlier for male monkeys than for female. It is interesting to note that human male children are hypothesized to experience a similar change in parental treatment somewhere between early and middle childhood (Johnson, 1963; Lynn, 1964). This phenomena appears either to be absent or less marked in the rearing of females.

It has been pointed out that, even though research on sex-related animal behavior has a heuristic value in terms of future human studies and offers useful analogies of human behavior, there is little or no justification for applying these findings to the human species (Tobach, 1971; Lambert, 1971). A similar position is expressed by Feshbach (1970) in his discussion of aggression. He points out that because the "range of . . . responses in humans is much greater and the behavioral options much more diverse and complexly determined" (p. 161) that generalizations from animal to human behavior can be offered only as tentative hypotheses.

A detailed examination of the physiological behavioral differences found in lower animals is considered beyond the scope of this paper. For disucssions of such work, see Beach (1965), Tiger (1969), Harlow (1971), and Gray (1971a, 1971b).

B. Sex Differences in Neonates and Infants

Sex differences are found in children from shortly after conception. The number of still-births and the post-natal mortality rate are, on the average, higher for male children (Wright, 1956; Childs, 1965; Bentzen, 1966). When matched for birth weight, more premature male infants die in the first post-natal weeks than females (Braine, Heimer, Wortis and Freedman, 1966). Male infants are, on the average, larger in every dimension, have relatively greater musculature development (Garn, 1958), are more variable in terms of disposition and activity levels (Kagan, 1971), and have a higher basic metabolic rate (Garn and Clark, 1953). Physical growth studies suggest that there is less variability of many growth parameters for girls than boys (Acheson, 1966). There is a higher incidence of delivery difficulties,

brain damage (Lillienfield and Pasamack, 1956) and general birth deformities in male infants (Wright, 1956). Male children, from birth, also have a higher incidence of just about every known childhood disease (Hamburg and Lunde, 1966).

Hamburg and Lunde (1966), in a review of sex differences in the first three months, report that female children react more to the removal of blankets and skin exposure, have a lower threshold to air-jet stimulation, and have significantly higher basal skin resistance. They report that male children can raise their heads higher. These authors also report inconsistent findings of hormonal differences at birth, but state that these differences are of short duration and, for the most part, cannot be detected in slightly older children.

Bardwick (1971), in a review of the literature on gonadotropic hormonal effects on fetus and neonates, reports that there may be a prenatal critical period during which these gonadotropins influence the development of the nervous system. The result of this influence can be the significantly altered development of the fetus, resulting in hermaphroditic offspring. She points out that animal research suggests that there is a physiological thrust towards the development of the female of the species and that for male development to occur a deflection of this thrust is required. This deflection is produced by gonadal hormones. She suggests that this could account for the more hazardous development of male fetus and newborns.

Kagan (1971), after his review of the literature, speculates that the more hazardous fetal and neonatal development of the male could result from the lessened integration and protection afforded the male because of his lacking of the X-chromosome.

In the same publication, Kagan, reporting on series of longitudinal studies of infants between four and twenty-seven months, states that earlier and more stable visual fixations, on various normal and rearranged two- and three-dimensional facial stimuli, were found for girls than boys. He states that on many of the variables which were studied (including various gross motor activities, visual fixation, free play, heart deceleration, and vocalization) there were minimal sex differences in mean or variance values but major differences in the patterning and stability of these measures (for example, there was a significant correlation between vocalization and measures of excitement for girls but not for boys). He also reports that there is less variability in the tempermental dispositions of females than males such that there are more infant boys who are extremely irritable, active, alert, or lethargic than girls.

Moss (1967) found relatively stable and significant sex differences in his sample of 30 infants at three weeks and twelve weeks. He found that females tended to sleep more while males were more fussy, irritable, and spent longer awake but passive.

Goldberg and Lewis (1969) and Lewis (1972a) report what they term "striking sex differences" on several measures of the free play behavior of thirteen-month infants. In addition to an overall finding that males were more active, they found that when attempts were made to get a child to leave his mother girls were more reluctant to do so and returned after a shorter period of time. In the same situation, girls spent more time touching their mother and vocalizing with the mother. When a wire mesh boundary was placed between the mother and child, girls cried more and made more motions for help, while boys made more active attempts to get

around the barrier. In terms of the toys with which the children chose to play, girls demonstrated more fine motor play and spent longer times with each toy they chose than did boys. All of these reported findings are significant at or below the 0.05 level of probability.

Certain sex-differences in infants have been noted in research aimed at assessing what has been termed the "state" of the infant. For example, both Wolff and Korner (Stone, et al., 1973) have found, when taking account of the state of the child at the time of the observation, "very early sex-differences in the amount and distribution of startle behavior and of smiling. . . . It appears most unlikely that these can be culturally determined" (p. 241).

Much of the work specifically aimed at assessing state was initiated by Wolff in 1959. This work stimulated researchers to begin to overcome the notions held by Piaget and others that the child, in his early months, was a "decerebrate creature, whose activities and experiences seemed both chaotic and unimportant" (Stone, et al., 1973: 239). Wolff's work also began to allow researchers to greatly expand their notions of infant competence.

Wolff (1959) in his initial study considered six different states (regular sleep, irregular sleep, drowsiness, alert inactivity, alert activity, and crying) and observed infant responsiveness during these different states to various categories of stimulation. What he found were marked differences in reactivity as a function of the infant state.

Subsequent to this study, 'state' began to be defined primarily in terms of infant arousal levels, which in turn came to be defined according to electrophysiological criteria (Stone, et al., 1973). 'State' was largely assumed to be a function of the internal processes

of the child and relatively little a function of environmental factors. This position is illustrated by the following quotation:

> Change of state is largely determined by internal processes but may also be produced in the neonate by changing levels of ongoing stimulation, particularly by monotonous stimulation (Stone, et al., 1973, p. 243).

Lewis (1972b), in a study aimed at researching both mother-child interaction and state as a variable, did not find sex-differences when observing several aspects of the behavior of three-month-old infants (i.e., vocalizing, movement, fretting/crying, playing, smiling, and non-vocal noisemaking). He did find, however, sex-differentiated treatment by mothers in response to various aspects of the child's behavior. These results led Lewis to the conclusion that, while it is true that differences in state do "derive from our biological past and are firmly rooted in our biological composition, . . . it is also equally clear from stimulation and interaction research that state can be modified by the environment" (p. 96). While sex-differences were observed as a function of interaction, they were not observed when the variable of maternal responsiveness was removed.

An interesting summary of the sex differences found in infancy and early childhood which was prepared by Bardwick (1971) is reproduced in Table 1. Current reviews of sex differences in early childhood can also be found in Cramer (1971) and Stone, et al. (1973).

C. Sex Differences in Toddlers and Preschool Children

Many sex-differences can be detected in nursery and preschool age children. In this age group, many of the sex-differences which were present in infancy can still be found; for example, males continue to

TABLE 1

Sex Differences in Infancy and Early Childhood[1]

Boys	Girls
At Birth	
Larger size and weight (Terman and Tyler, 1954); more muscle mass (Garn, 1957, 1958)	Greater motoric passivity (Bell, 1960; Knop, 1946)
More activity	More sensitivity to stimuli; sensitivity to a greater number of stimuli
Correlation of low sensitivity with higher prone head reaction (Bell and Darling, 1965)	Greater tactile and pain sensitivity; higher skin conductance, greater irritability during an anthropometric examination (Bell and Costello, 1964; Lipsitt and Levy, 1959)
6 Months	
Better fixation response to a helix pattern of lights	Longer fixation time to visual stimuli, less motoric activity, and greater cardiac deceleration (Lewis et al., 1963)
	Better fixation to a human face (Lewis, Kagan, and Kalahat, 1965)
	Greater responsiveness to a social stimuli; more social orientation (Bayley, 1964)
Greater cardiac deceleration (a measure of attention) to an intermittant tone	Greater cardiac deceleration to complex jazz music (Kagan and Lewis, 1965)
18 Months	
Maximum response to a verbal stimulus high in meaning and low in inflection	Maximum response to a verbal stimulus high in meaning and inflection; implies a response to a person (Kagan and Lewis, 1965)
Preference for low complexity stimuli	Preference for high complexity stimuli (Kagan and Lewis, 1965)
	Earlier language development, especially inflection
Possible better figure-ground differentiation	Greater field dependency; less likely to eliminate irrelevant stimuli, awareness of contextual relationships

[1] Taken from Bardwick (1971, p. 93).

have higher activity levels, greater size and weight, and a high incidence of physical difficulties. Females are significantly more developed in various aspects of language usage such as earlier and better articulation and fluency, greater statement length, and generally more advanced verbal skills (Oetzel, 1966). Although no empirical link has been made, it is interesting to note that findings of greater maternal modelling of various female infant behaviors have been found when mothers and four-month-old female infants were observed (Moss, 1967; Kagan, 1971). A greater degree of maternal verbalization to female infants has also been reported by Lewis (1972a, 1972b; Messer and Lewis, 1972). Moss (1967) and Kagan (1971) have both speculated that this sex-differentiated maternal behavior may be associated with the sex-differences in language skills.

Significant sex differences have been found in aggressive behavior by two to three years of age (Terman and Tyler, 1954; Banta, Ross and Ross, 1963; Sears, 1965; McCandless, 1967; Bardwick, 1971). In her review, Bardwick points out that sex-differences in the form of higher incidence of physical aggression (such as fighting, wrestling, kicking and biting) have been found in male children by the age of two years. She points out that female aggressiveness is not absent but is more likely to include:

> . . . passive aggression (getting a powerful adult to intervene for them) verbal stings and arrows, and subtle interpersonal rejection frequently masked in solicitous caring (pp. 126-27).

The female form of aggressiveness has been referred to as being prosocial (i.e., verbalizations about the goodness or badness of behavior and verbal threats) while the male physical form has been called antisocial

(Sears, 1965; Mischel and Mischel, 1971).

Mischel (1966) also notes that sex differences in aggression have been found as early as three years of age. He points out that results fairly consistently reveal that males demonstrate greater physical aggression and more negativistic behaviors such as negative attention-getting, antisocial aggression, and physical aggression than females. He states that:

> . . . there are fewer sex differences found for verbal aggression; occasionally girls are more verbally aggressive than boys. Girls tend to show greater "prosocial" aggression, e.g., stating of rules with threats of punishment for breaking them (p. 73).

Mischel (1966) points out that both sexes typically have a similar knowledge of aggressive responses, as well as most other forms of sex-typed behavior but differ in the performance of such responses because of what he terms the "sex-determined response-consequence" (p. 74) which they have previously learned from such behavior.

An excellent discussion of the developmental aspects of aggression in general as well as sex differences in aggression can be found in Feshbach (1970). Feshbach also presents in tabular form a detailed summary of research studying sex differences in aggression from 1934 to 1965.

Another area frequently studied in terms of sex-differences is passivity. This topic has traditionally been more associated with adult female than adult male behavior (Josselyn, 1969; McClelland, 1964; Bardwick, 1971; Greenson, 1967). Passivity connotes a lack of activity and the reverse and absence of aggression. In spite of the connotation, there is little consensus on the specific operational definition or meaning for this term (Greenson, 1967; Josselyn, 1969; Bardwick, 1971).

Bardwick, for example, offers ten different definitions of passivity in her attempts to answer the question of whether or not women are, in fact, passive. She concludes that "compared with men, women are more passive or inner-directed as well as less motorically active and less obviously aggressive" (pp.125-26). She adds, however, that "normal women also have outer-directed activities and appropriate aggression as part of their personalities" (p. 126). Very little empirical evidence has been found demonstrating passivity in young children; however, Kagan and Moss (1962) report that passivity is a more stable trait of females than of males from three years of age.

Another dimension on which sex-differences are frequently found is dependency. Mischel (1966), in reviewing the literature on dependency, states that "no strong sex differences are observed at early ages (e.g., nursery school)" (p. 74). He adds, however, that even at three years of age there is a trend towards the greater female dependency (see Oetzel, 1966) that shows up in high school, college, and adult females (Kagan and Moss, 1962). McClelland (1964) agrees with this trend but prefers to use the term "interdependency" in place of "dependency," emphasizing the relationship aspect of the female role.

Although, as Mischel (1966) points out, strong evidence does not exist illustrating dependency in early childhood he believes that if a more microlevel of analysis was carried out significant parental sex-differentiated treatment ultimately leading to dependent female behavior would be found.

Bardwick (1971) takes a similar position illustrating various ways a parent might differentially treat a young child, particularly after two years of age. She includes, for example, the types of answers

given to the child's questions, encouragement (or its lack) in dressing and various other activities, and the nature of the parental mediations of the child's altercations with other children. Bardwick's ideas are suggestive of those proposed by Hartley (1964) which are discussed later in the paper (see p. 41).

Various examples of sex differences are found when one studies children's play. These differences take various forms ranging from sex differences in the style of play to sex-differentiated play objects and games. Males, for example, tend to be more active and aggressive in their play (Millar, 1968; Goldberg and Lewis, 1969; Harlow, 1971) even though they might be playing the same games or with the same objects as females (Millar, 1968). Erikson (1951) points out that the symbolic arrangements and configurations found in the play of pre-adolescents are clearly sex-typed. He states that:

> . . . the most striking sex differences . . . concern the tendency among boys to erect structures, buildings and towers, or to build streets; among the girls, to take the play table to be the interior of a house, with simple, little or no use of the blocks (p. 681).

Millar states that ". . . in most societies, differences in play between boys and girls are not merely expected, but actively encouraged" (1968, p. 194). Although Millar emphasizes the social basis for the content and type of play, other authors emphasize the position that types of play reflect more the biological nature of the child. Tiger (1969), who like other authors (Stone, 1971) regards work and play as being in many ways similar, lists various reasons why males and females develop sex-differentiated tasks and activities. His reasons include such factors as greater female strain resulting from temperature changes (such as might occur on hunting trips), activity limitations which

result from menstruation and childbearing, and various other anatomical factors such as strength and size. For additional discussions of possible relationships between female and male anatomy and sex-differentiated personality and behavioral factors, see Greenson (1967) and Cramer (1971).

Fraser (1966) in her book A History of Toys believes that toys develop as a result of the needs and demands of a child. She adds an interesting dimension to the question of the relationship between nature and nurture by proposing that the:

> . . . toys of infancy are of a fundamental and often universal nature whereas the older child demands something more elaborate and more connected with the world around him. It is the more advanced toys which are likely to show the nature of social and economic change. (p. 16).

Fraser's position would seem to suggest that the toys that a child "demands" are a reflection of his perception of the world. Fraser also states, however, that toy selection by a parent in part reflects the "good for my child" (p. 18) aspect but also reflects the parent's own desires.

Interesting and current discussions of children's play can be found in Millar (1968), Harlow (1971), and Herron and Sutton-Smith (1971).

Studies carried out on children of this age group have frequently focussed on the performance of sex-typed behavior (including aggressiveness, passivity, and dependency) and on gender and sex-role learning (Lynn, 1959, 1964, 1966; Hartley, 1964; Kagan, 1964; Brown and Lynn, 1966; Mischel, 1966, 1970; McCandless, 1967; Mussen, 1969). Sex-typing and sex-role learning refers to the process by which children learn behaviors and adjustments which are socially and culturally appropriate

to their sex. A discussion of these sex-roles will be found in the following section.

Sex-Roles

A. Nature of Sex-Roles

Much of the current interest in the overall area of sex-differences focusses on sex- or gender-roles in general (Mead, 1949, 1958; Brown, 1956; Lynn, 1959, 1964, 1966; Hartley, 1964; Kagan, 1964; Mischel, 1966, 1970; McCandless, 1967; Rozenkrantz, Vogel, Bee, Broverman and Broverman, 1968; Mussen, 1969; Broverman, Broverman, Clarkson, Rozenkrantz and Vogel, 1970) and on female sex-roles in particular (Friedan, 1963; Greer, 1971; Kammeyer, 1964; Montagu, 1970; Bardwick, 1971).

A social role is a set of behaviors which society believes should be performed by an individual occupying given social position. The 'position' can be defined in various ways, including age, sex, kinship group, occupation, etc. (Krech, Crutchfield and Ballachey, 1962). Such roles are often called ascribed roles (Lambert, 1971), meaning that the role or position is largely based on who one is, what one's class or group is, and what the fortunes of one's inheritance are. A sex-role is one such socially defined role (Kagan, 1964; Lambert, 1971).

It is useful, for conceptual purposes, to make a distinction between sex-roles and gender-roles, even though the line of demarcation between the two might at times be somewhat arbitrary. A gender-role can be conceptualized as being made up of particular behaviors and/or capabilities associated with one sex or the other. A gender-role is not

determined because of social ascription, but rather because those particular behaviors and/or capabilities are inherently associated, either totally or to differing degrees, with either sex. Examples of more obvious gender-roles are the behaviors associated with females as a result of childbirth or nursing activities or those associated with males demanding their typically greater size and strength. Much of the current social effort to redefine sex-roles might be conceptualized as an attempt to take away from the sex-role all but the basic gender-role differences, thereby increasing the equality between the sexes in all but the ways in which they are inherently or physiologically and constitutionally different.

In this culture, and in most others (Mead, 1935; 1949; Barry, Bacon, and Child, 1957; Mischel, 1970), sex-role stereotypes are quite pervasive and agreed upon. It should be pointed out, however, that within this culture there are certain variations maintained within the different social classes (McCandless, 1967; 1969). There are also class differences in the rates at which the sex-roles are attained (Rabban, 1950; Brown, 1956).

Hetherington (1970), in a discussion of class differences, points out that in the lower classes there is ". . . more rigid delineation of sex-roles, less permissiveness for violation of these standards, and more stereotyped masculine or feminine models offered by parents" (p. 197). In an elaboration of this position, she states that:

> Most lower-class fathers do not participate in child care or household tasks. Their employment usually involves heavy labor in occupations which are traditionally regarded as exclusively masculine. Their wives' main function is that of household and child care and sexual satisfaction. When lower-class women work, it is frequently in occupations

> which involve characteristically feminine activities such as cooking, housework, and child care. In contrast, middle-class men are increasingly participating in caring for their children and in household tasks. Fathers change diapers, feed their children, go to PTA meetings and participate in their children's recreational activities. They may do the family grocery shopping, dry dishes, or occassionally whip up a gourmet delight in the kitchen. The middle-class mother is less acquiescent in her role than is the lower-class mother; she participates actively in family decisions, is involved in many activities outside the home and if she works, she is likely to be employed in a business or professional occupation which is not regarded as solely feminine (p. 197).

Mischel (1970) summarizes the social stereotypes maintained by this culture as follows:

> . . . females are supposed to inhibit aggression and open display of sexual urges, to be passive with men, to be nurturant to others, to cultivate attractiveness, and to maintain an effective, socially poised and friendly posture with others. Males are urged to be aggressive in the face of attack, independent in problem situations, sexually aggressive, in control of regressive urges, and suppressive of strong emotions, especially anxiety (p. 7).

In reference to sex-role expectations relative to children, Mischel and Mischel (1971) state that, at least in the United States, ". . . a 'real' boy is supposed to do such things as climbing trees, dirtying his knees and disdaining girls, while a 'real' girl plays with dolls, jumps rope and loves hopscotch" (p. 365). One might expect a similar set of expectations to be found in Canada as well.

Sex-roles are often discussed in terms of their degree of instrumentality or expressiveness, two dimensions originally proposed by Parsons (1955). An expressive role player is one who is oriented toward relationships among the actors within a system, primarily in terms of their attitudes and feelings both toward each other and toward him. The instrumental role player, on the other hand, is oriented towards a pursuit

of goals transcending the system and has, as a prime emphasis, favorable relations between the system and its environment. As Mussen (1969) points out in a discussion of Parsons:

> The husband-father role is instrumental, i.e., task-oriented and emotion-inhibited in nearly all cultures, and the wife-mother role is customarily more expressive, i.e., emotional, nurturant and responsible (p. 708).

It is interesting to note that Kagan and Lemkin (1961), in an article aimed at assessing the child's differential perception of parental attributes, found that children (aged three to nine) regard their mothers as more nurturant or expressive than their fathers, and their fathers as more a source of power and fear and also as more punitive and competent than their mothers. These parental attributes support those originally proposed by Parsons (1955) as representing expressive and instrumental roles.

McClelland (1964) develops two categories of roles, one of which is in many ways similar to the expressive-role proposed by Parsons. McClelland uses the term interdependent to describe the female role. The interdependent role is characterized by relationship, nurturance, and co-operation. McClelland (after Kagan and Moss, 1962) describes the male role as one of greater assertiveness with a greater interest in things than people. One of the main points made by McClelland is that assertiveness is not absent in females, it merely takes a different, less obvious form.

Hetherington (1970) similarly makes the point that, although specific behaviors may differ in males and females, the motivational or underlying reasons for these behaviors may be quite similar. She discusses the concept of competence relative to males and females.

She points out that some authors have attempted to differentiate between male and female roles by stressing that the male role demands a higher degree of competence. She points out, however, that:

> It might be more accurate to say that the areas of competence differ for males and females. Masculine competence is manifested in coping independently and effectively in competitive achievement situations associated with the male's functions as a provider and protector. In contrast, feminine competence is demonstrated in being attractive, loving and supportive in social relationships, particularly in her role as a wife and mother (p. 194).

Recent discussions of expressive and instrumental aspects of sex-roles, as well as discussions of sex-roles in general, can be found in Hetherington (1970) and Bardwick (1971). Quite comprehensive and recent reviews of the nature and assessment of sex-roles and sex-stereotypes can also be found in Toews (1973) and L. Schmidt (1973).

B. Measurement of Sex-Roles

Most of the work aimed at assessing sex-roles has dealt with measuring these roles as found in adults of college age and older. A review of this research is considered beyond the scope of this study. Excellent and comprehensive recent reviews of this work can be found in Bardwick (1971), Toews (1973), and L. Schmidt (1973).

Studies aimed at assessing the development of sex-roles in children are relatively few in number and have usually focussed on the effectiveness of sex-typing processes or on the degree to which sex-role identification or imitation has occurred. These assessment measures have taken a number of forms including observer ratings of various types of behavior (Sears, 1965; Sears, et al., 1965); self-reports of attitudes, attributes, interests, values, and preferences; behavioral ratings by

parents and peers; and indirect, more projective types of assessments based on toy and object selection and play (see Kagan, 1964; Oetzel, 1966; Mischel, 1966, 1970; Mischel and Mischel, 1971; Mussen, 1969).

Amongst the most widely used measures of sex-role performance and sex-role identification in children are the various forms of toy preference tests.

Terman, et al., in 1925 developed a masculinity index for ninety play and game activities (Terman and Tyler, 1954). The masculinity score was based on various indices of interest in, knowledge of, and time spent on these activities by a randomly selected sample of male and female children. A child's score on the test fell on a continuum which ran from masculine (e.g., tools, shooting, kites, and football) to feminine (e.g., dolls, dressing up, hopscotch, and playing house).

Benjamin (1932), in one of the earliest studies of sex-differences in toy preferences, found evidence of sex-typed toy preference as early as two years of age. Although the sample used in the study was relatively large, the assortment of toys was not, as only six toys were used. The toy preferences which were found showed a significant sex-difference, with female children picking boy and girl dolls and male children picking cars. Relatively high, though not significant, male preference scores were found for the horse and airplane toys.

Rabban (1950), in a study aimed at assessing social class differences in sex-role identification, developed a toy choice test as one of his principal measures. The twenty toys ultimately selected for this test were those on which over 70 per cent of 178 male and 203 female raters (including 9-11 year-old children and college students) agreed as

to their sex-appropriateness. After testing 75 male and 75 female children (ages three to eight years) from each of two social classes, Rabban concluded that:

> 1. Boys are more clearly aware of sex-appropriate behavior than are girls in both middle and lower working class people.
>
> 2. Boys and girls of the working class group are earlier and more clearly aware of the sex-role pattern than are both boys and girls of the middle class group. This class difference is especially great between the girls.
>
> 3. (a) Three year old boys and girls of both groups show incomplete recognition of sex differences and as a group are unaware of any appropriateness of sex-typed toy choices. (b) The fourth and fifth years are periods of growth in clarification of sex-role for working class boys. (c) Working class girls accept the sex-appropriate pattern by six years of age, but middle class girls do not fully acquiesce to the definition of appropriate sex-patterning even by the eighth year, when all other groups have accepted the social expectations (pp. 140-41).

Brown (1956) developed what he termed a test of sex-role preference. This test, known as the It Scale for Children (ITSC), consisted of 36 pictures of various objects, figures, and activities commonly associated with masculine or feminine roles. The child was asked to make various choices for a stick figure drawing known as "It." The toys used on the test, which were rated as masculine, included such things as tractor, train engine, dump truck and gun, while feminine objects included doll buggy, baby bath, and dishes. Brown states that the ". . . logic and validity of the scale rests primarily on the assumption that what is regarded as, and actually associated with, masculine or feminine behavior is an adequate basis for defining sex-role preference" (p. 5).

Sutton-Smith, Rosenberg, and Morgan (1963) developed a 180 item play inventory on which 1900 children from grades three to six indicated their likes and dislikes of various games and pastimes. Although the instrument was not intended necessarily as a measure of sex-role identity, they did find several significant differences between the sexes in activities and play objects. They found that male choices included such activities as soldiers, spacemen, football, model airplanes, and trains, while female activities included dolls, dressing up, houses, and jump rope.

Fagot (1973a, 1973b) studied adult stereotyping of toddlers and found that adults expected males and females in the 18-30 month range to show sex-typed behavior on six of 38 behaviors. Males were expected to show more roughhouse play, play more with transportation toys, and be more aggressive in their behavior. Females were expected to show a higher incidence of doll play, dress-up play, and looking-in-the-mirror activities.

Fagot in a later study (1974) reported observations of the behavior of twelve children, between 18 and 30 months, in their own homes on a list of 46 behaviors (later recombined to 31). She reported significant sex-differences on six of these behaviors. Males were found to play more frequently with blocks and to manipulate objects, while females more frequently played with soft toys, danced, asked for help, and dressed up in adult-like clothes.

Several other studies have found evidence of sex-typed toy choices which are regarded as indicators of sex-role identification (Hartup and Zook, 1960; De Lucia, 1963; Ward, 1969; 1972).

Some studies have found that certain categories of toys (i.e., those requiring greater physical activity) are more frequently chosen by males (Terman and Tyler, 1954; Goldberg and Lewis, 1969). Goldberg and Lewis found a preference for toys demanding greater physical activity as early as 13 months. Activity preferences as early as three years of age have been found in various other studies (see Oetzel, 1966; McCandless, 1967).

Many sex-differences associated with behaviors indicative of differing degrees and forms of dependency, passivity, and aggression have also frequently been regarded as measurements or indicators of the degree to which the child has developed into a sex-role or to which sex-role identification has occurred (see Sears, 1965; Hetherington, 1970; Mischel and Mischel, 1971). In this type of theoretical research, observed sex-differences in behavior of the type earlier discussed (see Chapter 2, pp. 15-22) are interpreted as indicating and supporting particular theoretical positions. This type of research is discussed in the following section.

For discussions and criticisms of these various approaches and instruments, see Terman and Tyler (1954), Kagan (1964), Mischel (1966, 1970), Mussen (1969), Hetherington (1970), and Mischel and Mischel (1971).

Theories of Sex Differences

Various explanations are given for the development of sex-differences. These theories can all be located along a nature/nurture/interaction continuum with most of the current theories tending to reflect the interaction position. While virtually no currently accepted theorist

takes one position exclusively, there are wide variations in where the greatest emphasis is located (Liebert, et al., 1974).

A lengthy discussion of the various theories of sex-differences is beyond the scope of this paper; however, a brief discussion of representative theoretical positions will be made.

A. Deterministic and Constitutional Theories

Theorists such as Freud (1925, 1962, 1963), Ellis (1933), and Erikson (1965) are representatives of the position that differences between the sexes result from broadly defined physiological and constitutional differences between males and females (Miller, 1969). Havelock Ellis, for example, proposed that the average ability of the sexes was essentially the same, but that there was a greater amount of variability found amongst males than amongst females; hence, there are a greater number of males low in achievement and a greater number of more successful males (Anastasi, 1958). Anastasi points out that ". . . the doctrine of greater male variability was regarded by its proponents as a fundamental biological law and was believed to hold for all traits, both psychological and physical" (p. 45).

Stoller (1965) states that Freud did not begin to see the child differentiate (in the psychosexual sense) into either male or female until the phallic stage. Freud believed that it was only here that opposite sex object choices were made. It was this selection of an opposite sex object choice which resulted in the child's identification with either the male or female parent.

Some clarification of the psychoanalytic concept of stage might be in order. Miller (1969) points out that stages in the psychoanalytic sense are frequently assumed to be solely the result of maturation of potentials in the child. He points out, however, that while a given capability may indeed be maturing (as contrasted to matured as a "fully formed complex process") at a certain time in a child's life, this is not the correct interpretation of a stage. He states that:

> . . . a stage can be said to exist . . . only when a socializing agent initiates a new type of consistent activity that is intended to modify the child's behavior. The activity may be necessitated by the child's initiation of a new kind of behavior . . . but it need not be (p. 482).

In this phallic stage, the identification that occurs is essentially of two basic types, anaclitic and defensive. The former occurs in both males and females, while the latter occurs typically in males. In the process of anaclitic identification, the child seeks to make himself like the person who has met his needs, cared for him, and loved him. In this way, the child can be conceptualized as increasing his own self-love by internalizing the qualities of the loving caretaker. Freud stated that in this process the child's ego, ". . . by identifying itself with the object, recommends itself to the id in place of the object and seeks to attract the libido to itself" (Wright, et al., 1970, p. 584).

In defensive identification or identification with the aggressor, the situation is somewhat different. Here the child meets or fears aggression from a powerful adult, usually the father. This fear of aggression arises because of what has been termed the child's Oedipal strivings (see Bardwick, 1971, p. 5)--namely, his desire to sexually possess his mother by killing his father. The child, on confronting this

situation, must resolve it in some way other than attempting obviously unsuccessful aggression against the more powerful adult. He is able to resolve this problem by identifying with the aggressor and internalizing the qualities of the aggressor--namely, adopting a self-punitive attitude towards himself. By so doing, he is able to resolve his Oedipal complex and restore his self-esteem while, at the same time, adding various additional aspects to his personality.

Not all authors find this position acceptable. Bardwick (1971), for example, points out that ". . . the psycho-analysts . . . conceive of identification as an all-or-none proposition with only one parent" (p. 144). She feels this to be not at all the case. Later in this section, certain criticisms of identification will be discussed, as well as the relationship between identification and imitation.

It is interesting to note that Parsons (1958), in a reassessment of the Freudian position, states that Freud, in his later work, paid greater attention to the role of environmental factors in personality development. Parsons believed that Freud conceived of the ego, in addition to the superego, as reflecting environmental forces, particularly in terms of the child's development of object-relations.

Although Ellis (1933) proposes that hormonal factors are a source of sex differences, a much more specific discussion of these factors is offered by authors such as Hamburg and Lunde (1966), Broverman, et al. (1968), Gray (1971a; 1971b), and Money and Ehrhardt (1972). These authors emphasize the effects of various hormonal substances such as the cholenergic and adrenergic hormones (Broverman, et al., 1968) and the gonadotropins (Gray, 1971a; 1971b) on cortical functioning. These substances can lead to the differing development of various cognitive and

personality dimensions. Hamburg and Lunde (1966) emphasize the differing rates of neurological maturation in males and females and their effects on the production of the sex hormones which bring about puberty.

Maccoby (1966b), discussing the work of Hamburg and Lunde, suggests that these differing neurological maturation rates and differences in various other parameters of physical maturation (see Tanner, 1970) could contribute to the various sex-differences in intellectual abilities observed in the early grades. Garai and Scheinfeld (1968), for example, point out that the female is two to six weeks developmentally ahead of the male at birth and that this lead is increased to about six months by the time of school entry.

The potential complexity of the influence of physiological factors on sex-differences is illustrated by Hampson (1965). Although Hampson emphasizes the environmental influence on the development of sex-roles, he points out that determination of a person's sex requires consideration of a number of physiological and anatomical variables. These variables include: (1) sex chromatin pattern, (2) gonadal sex indicated by morphology, (3) hormonal sex (which is correlated with secondary sex characteristics), (4) external genital morphology, and (5) internal accessory reproductive structures. The actual determination of a person's sex depends upon the concurrence of all these variables. This does not always occur. When some variation is found, the label hermaphrodite is applied.

A model offered by Feshback (1970) to explain the development of sex-differences in aggression in terms of the interaction between physical and constitutional factors and the environment could be of propaedeutic value in understanding relationships between these same factors in the

development of other sex-differences. Feshback states that:

> Constitutional differences may not lie in aggressive dispositions as such but rather in physical strength and motoric impulses, which may lead to a different constellation of experiences and reinforcements for males and for females (pp. 188-89).

In illustration of this position, he points out that:

> The indications that newborn females have greater skin sensitivity . . . and pain sensitivity . . . than newborn males provide examples of constitutional factors which, though not directly implicated in aggression, could exert a profound influence on its development. For example, greater skin sensitivity might predispose the child to prefer more passive forms of bodily contact and to reduce its participation in subsequent rough and tumble activities which are prototypic of physical aggressive responses (p. 189).

In a similar way, he goes on to add that it may require more effort for a parent to inhibit physical aggression in boys while requiring less effort to promote more passive, less aggressive behavior in girls.

Recent discussions of the role of physiological factors in the development of sex-differences can be found in Garai and Scheinfeld (1968), Bardwick (1971), and Money and Ehrhardt (1972).

A position which is within the category of biological theories of sex-related behaviors is that of the ethnologist Tiger (1969). Tiger, along with several well-known ethnologists (Ardrey, 1966; Lorenz, 1966; Morris, 1967), has sought to account for various aspects of human behavior through application of an evolutionary model which makes use of various environmental and instinctual factors (Lambert, 1971). Tiger's main focus has been on what he terms "bonding" in males, an instinctual need for association in groups. He develops his position by illustrating various organizations and situations in which this bonding can be found. He also points up certain of its potentially undesirable aspects such as

aggression, with the view in mind that by understanding our instinctual propensities we may, if we wish, be able to counter them. A criticism of various aspects of Tiger's work, such as his failure to consider bonding in women, can be found in Lambert (1971).

It is interesting to note that Kagan (1971) feels that there currently is a change in behavioral scientists' attitudes towards the etiology and significance of sex-differences which parallels the changes in attitudes towards the role of biological factors in the development of language and the origins of severe psychopathology. He states that:

> . . . environmental shaping had been viewed as the sole cause of sex differences in behavior. But psychology has suddenly witnessed a strong swing favoring biologically based differences in the organization and patterning of response systems (p. 26).

Hetherington (1970) expressed a similar view.

B. Environmental and Interactional Theories

No theorist totally denies the potential influence of constitutional factors in the development of sex-differences; however, several, particularly those emphasizing sex-role learning, offer little discussion of the influence of physiological variables (Kagan, 1964; Mischel, 1966; 1970; Lynn, 1959; 1964; 1966; Kohlberg, 1966; 1969; Mussen, 1969). Much of the theoretical discussion is centered around sex-typing and sex-role learning. This work assumes a set of socially accepted sex-role standards which the child gradually adopts. Mischel (1966) summarizes this position nicely when he states that:

> . . . according to social learning theory, the acquisition and performance of sex-typed behavior can be described by the same learning principles used to analyze any other aspect of an individual's behavior. In addition to

> discrimination, generalization and observational learning, principles include patterning of reward, non-reward and punishment under specific contingencies and the principles of direct and vicarious conditioning (p. 56-57).

Sears (1965) reflects the social learning position stating that ". . . masculinity and feminity are by no means automatic consequences of being born a girl or a boy" (p. 133). He believes that sex-typing, the process which leads to the establishment of sex-role, is to a significant degree a function of parental treatment. Sears and his co-authors, Alpert and Rau, believe that sex-roles are too complex to be taught by direct tuition and instead are learned significantly through identification or observational learning. This position, with some variations in specific aspects of the process, is generally quite widely accepted by the social learning theorists (Lynn, 1959; 1964; 1966; Bandura and Walters, 1963; Kagan, 1964; Mischel, 1966; 1970; Mussen, 1969).

Social learning theorists frequently use the concept of identification in reference to sex-role learning. This concept, though extensively used by both social learning and analytic theorists, lacks a singular clear definition (Bronfenbrenner, 1960; Hartley, 1964; Bardwick, 1971). Comprehensive discussions of identification can be found in Kagan (1958) and Bronfenbrenner. Discussions of sex-role identification can be found in Lynn (1959; 1964; 1966); Hartley (1964); Sears, Alpert, and Rau (1965); McCandless (1967); Biller and Borstelmann 1967; Mussen, (1969); and Bardwick (1971).

As was pointed out above, the original concept of identification was proposed by Freud in 1921 when he defined the term as the ". . . process which endeavors to mold a person's own ego after the fashion of one that has been taken as a model" (Mussen, 1969, p. 718). Due to difficulty

operationalizing the term, because of its vague and diffuse nature, many researchers ceased to use it. While accepting the fact that the term had some use, in a descriptive way in certain specific instances, they began to redefine it, frequently replacing it with the terms 'imitation' or 'modelling' (see Bandura and Walters, 1963; Bandura, 1969; Wright, et al., 1970; Mischel and Mischel, 1971). Wright, et al., suggests that the terms identification and imitation differ in two main ways. While both represent processes by which one person models himself after another, identification implies a relatively long-lasting relationship between the subject and his model and one in which one model may exert more influence over the subject than another. This need not be the case in imitation. Identification also suggests a process by which the model's value, beliefs, attitudes, and style of life, as well as particular behaviors, are adopted by the identifying person. Imitation is typically concerned with much smaller, more specific units of behavior. Imitation is thus a much more precise and much less inclusive term than identification.

Frequently, social learning theorists in their writing use the term 'identification.' In these works, a much more specific definition than the original Freudian one is used, the new definition frequently falling between the original definition and the more specific term 'imitation.'

Excellent discussions of both imitation and identification can be found in Wright, et al. (1970), and Mischel and Mischel (1971). The latter work is of particular interest as it reviews several of the studies on imitation, paying particular attention to the characteristics of models, namely, ". . . nurturance, control and similarity which are thought to influence adoption by the child of various modelled attributes and behaviors" (Mischel and Mischel, 1971, p. 367). A detailed review of this

work is considered beyond the scope of this paper and is available in the previously cited reference.

Kagan (1958) regards identification as an active cognitive learning process. He defines sex-role identity as ". . . the degree to which an individual regards himself as masculine or feminine . . ." (1964, p. 144). Lynn (1959), taking a less cognitive orientation, regards sex-role identification as the incorporation of the "unconscious responses" characteristic of such a role. Mussen (1969) states that:

> . . . learning theorists conceptualize identification as "learned drive" or "motive" to be like a model (e.g., parents). The child's identification with his parents is seen in his attempts to duplicate or emulate their ways of behaving, thinking and feeling and to adopt their ideals, attitudes and opinions (p. 718).

Bandura and Walters (1963) point out that the model in the identification process can be a real-life or symbolic one.

Certain social learning theorists feel that identification is not a unitary process and thus propose a breakdown of the steps leading to the child's identification. Lynn (1959) has proposed that the process involves the child moving from what he terms sex-role preference to sex-role adoption and, finally, sex-role identification. Sex-role preference ". . . refers to the desire to adopt the behavior associated with one sex or the other, or to the perception of such behaviors as more preferable." Sex-role adoption ". . . refers to the actual overt behavior of the individual" relative to a given sex-role, and sex-role identification refers to ". . . the actual incorporation of the role of a given sex and to the unconscious responses characteristic of such a role"(pp. 126-27).

Biller and Borstelmann (1967) feel that the first two aspects of sex-role acquisition proposed by Lynn are meaningful but that the concept of sex-role identification requires clarification. These authors propose to replace the vague concept of identification with what they term sex-role orientation, a term carrying fewer connotations. They state that their proposed concept represents the conscious or unconscious way an individual views himself. They believe that this learning process occurs primarily during the second and third year of life and, as the child matures, begins to resemble Kagan's (1964) idea of sex-role identity. They point out that in some ways their idea of sex-role orientation also resembles Kohlberg's (1966) cognitive idea of gender-identity or the child's self-categorization of himself as male or female.

Mussen (1969) believes that ". . . learning is of paramount importance in the very early phases of sex-role development and that identification and cognitive growth play vital facilitating roles later on" (p. 727). He feels that the critical sequence of events in sex-role learning is labelling, tuition or training, and identification. Basing his position on Kohlberg (1966), Mussen (1969) states that:

> . . . labeling the child properly initiates the process of sex-typing. But the simple act of labeling is not sufficient to set the process in operation. The assigned label must be salient for the child and must be regarded as positive, valuable and rewarding (p. 727).

He believes that what is important is not only the label but the associations to that label, including the context within which it is assigned. The parents are important in this model as they are responsible for the assignment of the label and the tuition. This tuition involves ". . . teaching the child appropriate sex-typed responses through rewards

and punishments" and ". . . providing a model of the proper general attitudes and personality characteristics for the child to emulate" (1969, p. 728).

Mussen's ideas of "labelling" and, to a lesser degree, "tuition," suggest the idea of "canalization" proposed by Hartley (1964). By canalization, Hartley refers to a very subtle rearing process through which a child is only offered certain selected items out of a possible array of items which could satisfy his desires (see Stone and Church, 1968, pp. 210-11). Through such a process, the child will, at a very early age, begin to develop both a preference for those items and cognitive schema which will ultimately be linked together when sex-role identification occurs (Hartley, 1964; Kagan, 1964, 1971; Kohlberg, 1966).

Millar (1968), in a discussion of the role of toys in a child's play, states that ". . . the number and kinds of toys which are around at any given moment make a difference both in the manner and the kind of children's play" (p. 218). Although she does not specifically discuss canalization, she does point out other learning processes which have an influence on the development of social skills in children. She points out, for example, that the quantity of toys has a definite effect on the amount of social interaction between children, and that similarly the quantity and kinds of toys also influence the persons who are likely to be involved in any interactions. One can readily see how certain categories of sex-typed toys, i.e., mechanical toys versus sets of dishes, could function in this way. In reviewing the work by Hall on dolls which was carried out just before the turn of the century, she gains support for her position, pointing out that ". . . doll-play is

imaginative play in which the child acts what he thinks and feels, with props" (p. 221). She quotes Hall who stated that ". . . the parental instinct is far less prominent in doll-play than is commonly believed" (p. 221).

In addition to the canalization process, Hartley (1964), in discussing female sex-role learning, hypothesizes the existence of several other rearing processes which could be used in teaching sex-role identification. She suggests that through these processes a child is given a set of experiences which are sex-specific and which ultimately become integrated into the child's personality. In addition to canalization, these experiences are gained through sex-differentiated discipline, sex-appropriate verbal lables, and active parental encouragement of identification (as represented by a form of symbiosis). She feels that in addition to these "indoctrination devices" (p. 6), the female child begins to receive negative feedback as to what she is not, i.e., when toilet training is occurring and when she observes masculine activities such as her father shaving.

Lynn (1964) suggests that a key aspect in male sex-role identification is the greater amount of divergent feedback or punishment given the male child. He hypothesizes that, for the male child, the role is frequently defined in terms of what he ought not do. Because of the various differences between behavior learned by punishment and that learned by reward, male behavior is considerably different than female. He suggests (Lynn, 1966) that, in addition to the type of feedback a child receives, there are other very different processes by which male and female sex-role learning occurs. He feels that the female is rewarded

for her identification with the mother, while the male, who is discouraged from maternal identification, is rewarded for conforming to a masculine social role. A summary of Lynn's theory and a number of hypotheses which derive from it can be found in his 1966 paper.

A position frequently referred to throughout this paper is that of Kohlberg (1966). He feels that ". . . if biological instincts are important in any area of man's social life, they are certainly most important in the sexual domain; therefore it is in this area that we will most likely discover the nature of the interaction between biological and cultural patterning" (p. 82). His basic thesis is that sexual attitudes are not derived from biological or cultural sources, but instead develop from the child's organization of his social world along sex-role dimensions. Kohlberg feels that the child learns about social roles largely through observational learning. This learning is cognitive in the sense that it is selective and internally organized by relational schemata. He regards this organization largely from a Piagetian point of view and states that ". . . recent research indicates that children develop a conception of themselves as having an unchangeable sexual identity at the same age and through the same processes that they develop conceptions of invariable identity of physical objects" (p. 83). He has found that a child is not certain of his gender identity before the age of five or six years and will tell you, for example, that a girl who puts on a boy's clothing becomes a boy. He believes that at this age what might be termed a conservation of sex-type occurs. He analyzes various studies of the sex-role development of children at different ages to show the presence of the Piagetian stages. He offers some very interesting discussion of the concrete operational child's perception of sex-roles,

illustrating that masculinity is associated with larger size, physical strength and acts of aggression, while femininity is associated with various activities within the home. He states that the five basic mechanisms in the development of sex-role concepts are: (1) tendency to schematize interests and respond to new interests that are consistent with self-concept identity, (2) tendency to make value judgments consistent with self-concept identity, (3) tendency for prestige, competence, or goodness of values to be closely and intrinsically associated with sex-role stereotypes, (4) tendency to view basic conformity to your own sex, moral, and (5) tendency to imitate or model persons who are valued because of prestige and competence and who are perceived as being like one's self.

In a discussion of the modelling process, Kohlberg (1969) states that he believes that modelling does not occur until after the child has internalized a large amount of sex-typed information. Having this information, he then copies the model whose behaviors are compatible with this information. Kohlberg points out that this cognitive-developmental process is, in fact, the reverse of the traditional social learning positions which suggest that the child copies roles and is then reinforced for this performance.

Kagan (1969, 1971), in discussing continuity and discontinuity of behavior over time, proposes an interesting view of sex-typed behavior. He proposes three types of behaviors, each of which results from different causal factors. He discusses:

1. Homotypic or phenotypic behaviors (those which, while showing a continuity or stability in the response form

over time, are the result of different underlying causal factors). Homotypic continuity can represent what he terms "fools gold." He uses this term because, while the type of behavior being studied appears to remain stable, ". . . the response is issued in the service of different motives, standards, expectancies, or sources of anxiety" (p. 17).

2. Heterotypic or genotypic behaviors (those behaviors which are manifestly different but are derived from the same underlying cause), and
3. Completely continuous behaviors (those behaviors in which both the underlying psychological process and the manifest form of the behavior remains stable).

Kagan suggests that sex-typed behavior is an example of a completely continuous behavior wherein the child's ". . . desire to maintain congruence with sex-role standards, as well as the specific instrumental behaviors that gratify this desire remain stable for a long time" (p. 17). For this type of behavior to develop, the child must internalize a sex-role standard and also possibly be "tutored" in some way in order to receive the gratification resultant from the maintenance of that standard.

Green (1967) discusses the continuity of sex-related behaviors from a somewhat different perspective than Kagan. In a discussion of the development of gender-role in children, he points out that a child's sex-typed behavior may be highly related to his adult sexual behavior. Green, who is interested primarily in abnormal behaviors, points out, after reviewing the literature, that ". . . adult transvestites, . . . transexuals . . . and some homosexuals, in a nearly uniform pattern,

report that their youth was characterized by an aversion to activities typical to same sexed peers and a strong attachment for cross-sexed play interests" (p. 89). On the basis of a large body of cross-cultural data illustrating that a child's assigned sex-role is carried into adulthood, Green hypothesizes that a similar, in this case disordered, adult sex-role will follow from a disordered childhood sex-role.

An alternative position on the development of sex-role, which reflects much of the work on the contributions of an individual parent to the sex-typed behavior of his child, is proposed by Johnson (1963). She accepts Parsons' (1955) instrumental and expressive categorization of sex-roles and discusses how they affect sex-role learning in the nuclear family. She believes that the father is the key figure in the development of the sex-differentiated behavior of both male and female children. She feels that the mother maintains an expressive type of relationship with both sexed children throughout their development, but that the father, while continuing to be instrumental in his role, takes a less demanding and more appreciative attitude towards his daughter than his son. She proposes that this difference in paternal behavior towards his daughter occurs when the child is of preschool age and that it is a key factor in the differing identification of the male and female child. Johnson offers various sources of support for her position including certain of the data on cross-sex identification (e.g., Emmerich, 1962). A recent discussion of expressive and instrumental aspects of sex-roles can be found in Bardwick (1971).

Although several authors have explored the effects and contributions of the individual parent to the general as well as the sex-role development of his child (see Hetherington, 1965; Sears, et al., 1965;

Rothbart and Maccoby, 1966; Oetzel, 1966; Feshback, 1970; Mischel, 1970; Biller and Weiss, 1970; Biller, 1971; Osofsky and O'Connel, 1972), what these effects and the interactions between them are remains unclear. Much of this work has focussed on the characteristics of the parent as a model in terms of such factors as nurturance, control, similarity (see Mischel and Mischel, 1971), and power (see Johnson, 1963; Hetherington, 1965; and Bardwick, 1971) and how these characteristics, ones on which there is frequently a parental sex-difference, influence the same- and opposite-sexed child. Other studies have concentrated on the effect of the absence of the parent (usually the father) on a child's development (i.e., Lynn and Sawrey, 1959; Mischel, 1970; Biller, 1971). A review of this body of research will not be included as it is considered beyond the scope of this study. The interested reader is referred to the various references cited above.

Sex-Role Differentiation

Several authors have recently suggested the need for research aimed at defining the nature of parental norms or expectancies for child behavior as well as parental interpretations of this behavior (Kagan, 1971; Lambert, 1971; White, 1971). White, in his studies aimed at discovering the upper limits of an infant's cognitive potential, refers to the socially agreed upon parental norms for child behavior and potential as being "adultomorphic assumptions" (p. 21). Kagan in a similar way refers to an "implicit theory of tutoring" (p. 18) which he feels parents have. Emmerich and Smoller (1964) in a similar vein encourage research on social norms and expectancies. They state that ". . . the question

of the nature and extent of parental norm specificity vs. generalization is fundamental to the study of socialization" (p. 382). These positions would all appear to be somewhat akin to the ideas of naive psychology espoused by Heider (Baldwin, 1967).

Emmerich (1962) and his co-workers (Smoller, 1964; Goldman and Shore, 1971) have sought to gain information on the nature of social and parental norms with a view to greater understanding of the bases of socialization. In his studies, which typically employ questionnaire techniques, Emmerich (1962) found that mothers of six- to ten-year-olds tended to be more nurturant and less restrictive than fathers. He also found that, surprisingly, parents (when compared as parent-son and parent-daughter) did not respond differently to male and female children on a nurturance-restrictiveness or on a power dimension. He reports, however, that a parent typically exercises more power toward his same-sex child.

Conflicting results were found in a later study by Emmerich and Smoller (1964). This study failed to find any evidence of sex-role differentiation by 60 parents of nursery school children. Parental differentiation appeared to be based more on the age than the sex of the child. The authors suggest that the conflicting nature of these findings could reflect the possibility that the measure of "expectations" was too abstract. Alternative explanations which they proposed include the possibility that the sampling of inter-personal norms was not comprehensive and also that perhaps parent-child dyads do not differentiate on the basis of sex until later age periods. As was pointed out earlier in the paper, Harlow (1971) made a similar observation of monkey behavior in

which differential treatment, particularly of the males, was not observed with the very young, but began to occur after about two months. Emmerich and Smoller also propose that the source of sex-typed norms may be the child's siblings and peers. Simon and Gagnon (1970) also propose that peers may be a source of sex-related behavioral norms. Their ideas, however, relate more to the exchange of sex-related information in the age span from late childhood to early adolescence.

The Emmerich and Smoller (1964) position is also offered indirect support by Harlow's work (1971). In his discussion of the socialization process, Harlow states that a key factor is the involvement of peers, as it is through this involvement that the child learns many of the behaviors and skills needed later in his life. Harlow discusses this socialization from various points of view including the peer or age mate love bonds which he believes very necessarily develop and also the types of play activities which aid in the development of these bonds.

Fagot (1973a; 1973b), in a study aimed at assessing the possible presence and nature of stereotypes about young children, asked 102 male and female college students to rate a list of 38 behaviors as to whether they were appropriate for two-year-old males and/or females. She found that six behaviors tended to be sex-typed (for boys, these were rough-house play, play with transportation toys, and aggressive behavior; and for girls, these were doll play, dress-up play, and looking in the mirror). Fagot suggests that most of the behaviors engaged in by toddlers are considered sex-neutral; however, adults do expect certain sex-differences. The article suggests that the male behaviors represent object play, while the female behaviors are representative of more styles of play, the former being more easily modified by parents.

Rothbart and Maccoby (1966) point out that any theory which attempts to understand the sources of sex-differences ". . . must consider the possible effects of differential parental pressures occurring as a function of the sex of the child" (p. 237). In their study, they sought to examine parental behavior toward a child as a function of the sex of the parent and the sex of the child. Parents were asked to record their reactions to twelve statements (such as "Daddy, it hurts" and "Leave my puzzle alone or I'll hit you in the head") which were made by a four-year-old child. The child was identified as being male for one group of parents and female for another. A specially constructed sex-differentiation questionnaire was also employed. Their results yielded an unexpected cross-sex effect with parents showing more permissiveness and positive attention to opposite-sexed children. The authors point out that ". . . the sex of the parent seems a better predictor of his differential response to boys and girls than does a sex-role stereotype" (p. 241). Parents who were high-differentiated on the questionnaire showed similar preferences to opposite-sex children. A high degree of differentiation in the parents served only to accentuate the cross-sex treatment differences.

Meyer and Sobieszek (1972) carried out a study aimed at investigating the effect of a child's sex on adults' interpretation of his behavior. Eighty-five adult male and female subjects were asked to rate videotaped examples of the behavior of two 17 month-old children in terms of 24 attributes (including male, female, and sex-neutral items). The raters were split into two groups and all were told that one child was male and the other was female. For each group, the sex designation of the children was reversed. No significant overall differences in the

ratings for the male or female children were found; however, all results were in the expected directions. They did find that males and raters having little child experience tended to rate the children in line with conventional sex stereotypes. They also found that Ss rated same-sexed children as having more makred qualities, both male and female, than opposite-sexed children. They interpreted this as suggesting that ". . . adults are able to define and respond more meaningfully to behaviors of same sex children" (p. 42). This differential response to same-sexed children is suggestive of the results obtained by Emmerich and Smoller (1964) which were previously discussed. The Meyer and Sobieszek study, like those of Emmerich and Rothbart and Maccoby, consider only a single age group of children, thereby overlooking any developmental or age differentiation which could exist in the adult SRD.

Lambert (1971) believes that the source of SRD learning lies in the family. To test this hypothesis, he designed and administered questionnaires to a cross-Canada sample of 7,500 children and 5,500 of their parents. He found that:

> . . . in general there was evidence of a positive relationship between parental role differentiation and sex-role differentiation. In order of increasing predictive potency, the measures of parental role specialization were: discipline, socio-emotional or caring, and power (as between the parents).
>
> Second, boys who shared noticeably in the distribution of power within their families tended to sex-type more than boys who had little power. The relationship was reversed for girls, so that the less power they reported, the higher were their SRD scores.
>
> Third, there was a clear tendency on the part of subjects who interacted differently with the sexes to think in segregated ways about the sexes (p. 69).

In discussing future research needs, Lambert suggested that more needed to be known about the antecedents of sex-role differentiation. He also suggested that ". . . future research should attempt to obtain different indicators of parental differentiation, and use children simply for measuring the dependent variable of interest, SRD" (p. 49).

Sex-Differentiated Treatment

Whichever theoretical basis one accepts, the subtlety of the sex-typing process must be appreciated. Schmidt (1973) reflects this subtlety in the following quotation which, although referring to the much broader overall concepts of the child's education and individual development, is equally applicable to sex-differentiated treatment and the child's sex-role development. Schmidt states that:

> The newborn child is experienced by the mother and the father, not as a biological representative of the species Homo sapiens but as 'our child,' born into our particular family at a particular point in time and thus dependent on us for a long time to come. Into their spontaneous care for the child, there enters almost imperceptibly the specific educational concern for the child: the desire to let the child become a certain kind of person. Some spontaneous tendencies of the child are encouraged, others are checked, forbidden, or simply eliminated by paying no attention to them. It is not simply by interacting with the child but by the specific educational intent of many of the adult's actions in relation to the child that the child's potentialities as an individual person are actualized (p. 38).

The topic of sex-differentiated treatment is currently receiving considerable attention by various authors interested in the "Women's Liberation Movement" (Friedan, 1963; Greer, 1973; Lifton, 1965; Millet, 1970, Bardwick, 1971). It would appear that a position basic to this movement is that the sexes are differentially treated as well as valued

by this society. Although this movement is not the primary focus of the author, this section of the paper will look at some of the work fundamental to it. This section reviews some of the research on sex-differentiated treatment, particularly as it applies to young children.

Regardless of whether one follows the analytic or the social learning theories of identification, the nature of the child's environment plays a significant role in terms of either the models to which the child is exposed or in terms of both the models and the differential treatment which the child receives. Within the analytic framework, the child is potentially exposed to both sexed models from birth (albeit, the child is typically much more exposed to the maternal caretaker when very young) and only begins to differentiate in a psychosexual sense when he has reached the phallic stage (Stoller, 1965) or has begun the identification process (Bardwick, 1971). The social learning theorists (including those emphasizing the cognitive aspects of sex-role development) put a greater emphasis on the child's experiences both in terms of the child's exposure to models and in terms of the sex-differentiated treatment he receives, both at the age when the phallic stage is occurring and when he is younger.

Sex-typing and sex-differentiated treatment are two closely related concepts. McCandless (1967) states that ". . . sex-typing precedes and is part of identification, and results from a pattern of rewards and punishments administered by parents, teachers, older brothers and sisters and playmates" (P. 450). Sex-differentiated treatment is represented in the "pattern of rewards and punishments" to which McCandless refers.

An interesting theoretical relationship exists between SRD and sex-differentiated treatment. When sex-differentiated treatment is found, one might hypothesize that either the parent is manifesting some degree of SRD in his treatment of the child or that some behavior (which could in some way be sex-specific) of the child is interacting with the behavior of the non-sex-differentiating parent, with the result that the sex-differentiated treatment is not a result of SRD by the parent. This latter hypothesis reflects the position of Bell (1968) who suggests that the child has the ability to modify the parents' responses to him. A similar position is taken by Escalona (1965; 1968). As was suggested in Chapter I, SRD measures can reflect either a behavioral or an attitudinal dimension. SRD can be used as an explanatory construct to account for a given type of differential treatment (Rothbart and Maccoby, 1966) or it can refer to an attitudinal measure (Lambert, 1971). In the latter case, the measure does not necessarily predict parental behavior. As was pointed out earlier, however, Rothbart and Maccoby did find a relationship between the two measures.

Tulkin and Cohler (1973), in an article aimed at studying the relationship between childrearing attitudes and mother-child interaction in the first year of life, point out that, although attitude scales have sought to measure the manner in which a mother relates to her child, empirical data supporting this aim have generally been inconclusive. They feel that the reason for this has been that most of the previous attempts to assess attitudes usually rested on one dimension, namely, authoritarian control. They propose a broader range of issues be considered. In what they term a "developmental approach" (p. 95), they

assume that ". . . the child's maturation presents her mother with a series of developmental tasks. The manner in which the mother resolves each of these developmental tasks with her child has consequences for the future direction of the mother-child relationship" (p. 95). They use the Maternal Attitude Scale which measures five categories of attitudes, namely, appropriate control, encouragement of reciprocity, appropriate closeness, acceptance of emotional complexity, and comfort in perceiving needs. They compared these attitude measures with 17 observed maternal behaviors and found several significant correlations, especially for middle-class mothers. They conclude that the instrument and approach are valid. They also state that:

> It will be difficult to show a relationship between attitudes and behavior unless investigators expand the range of attitudes and behaviors they assess beyond traditional issues of authoritarian control and unless they focus on childcare issues which are appropriate to the age of the child being observed (p. 103).

Although only the mothers of females were studied, it might be useful to suggest that research not only take account of the age of the child but also the child's sex.

Mussen (1969) believes that sex-differentiated treatment begins "very early" (p. 710). McCandless (1967) believes that these patterns of sex-differentiated expectations can be found "from perhaps 18 months on" (p. 450). Bardwick (1971) takes a somewhat conflicting position. She states that:

> . . . parents respond to their children in terms of their ages and not significantly in terms of their sex. I do not mean that parents are unaware of the sex of their child or that they do not find particular delights in the dimples of the female infant or the burly chest of the 6-pound son. I mean that most of the interactions of parents and young children are in terms

> of the helplessness and slowly developing abilities of the young child. Feeding, rocking, bathing and so on, are not sex-specific. In addition, even if the parent gives the youngster many sex-related cues, the perceptual and cognitive apparatuses of the infant do not allow for much awareness or sensitivity. I always suspect that people who talk about the omniscience of the infant never had one (p. 118).

In the following sections, some of the findings on sex-differentiated treatment will be presented.

A. Sex-Differentiated Treatment in Infancy

Relatively little information has been collected which reveals sex-differentiated treatment of infants. Although only a small amount of such data has been located, this could reflect the fact that typically such data has not been sought (McCandless, 1967; Bardwick, 1971).

The relatively recent work by Hampson (1965) suggests the presence of sex-differentiated treatment before the age of about two-and-one-half years. In a series of studies on hermaphroditic children who were mislabelled as to their more dominant sex, he found that these children typically experienced difficulty in attaining appropriate psychosexual orientation if their condition was not detected and corrected before the child reached two-and-one-half to three years of age. This finding suggests that some critical type of sex-differentiated treatment and learning occurring before this age. The finding that these children, when dis before this age, can develop appropriate gender-role, would suggest that influence of constitutional factors was of less significance than the environmental effects.

Money and Ehrhardt (1972), in an excellent and comprehensive book dealing with differentiation and dimorphism of gender identity from

conception to maturity, explore the criticalness of the timing of a change in a child's sex-label. They differentiate between two periods during which this might occur. Relabelling when the child is very young they call "reannouncement," believing that this ". . . requires changes only in the behavior of other people" (p. 13), while relabelling when the child is slightly older they call "reassignment," this requiring ". . . a change in the responses from the baby" (p. 13). They state that:

> . . . it is ill-advised to impose a sex-reassignment on a child in contradiction of a gender identity already well advanced in its differentiation--which means that the ceiling age for an imposed reassignment is in the majority of cases, around eighteen months (p. 13).

Rebelsky and Franks (1971) using a small sample measured the degree of paternal verbal interaction with infants from two weeks to three months of age. These authors found that, even though fathers spent relatively little time interacting with their children, the fathers of two- to four-week-old females vocalized more than fathers of males. By twelve weeks, this trend had reversed and fathers of males were spending a greater amount of time interacting with their infants.

Moss (1967), in an observational study of 30 first-born children between one and three months, found several measures of maternal behavior to be significantly different for males and females as early as the first month. He points out that ". . . by three months boys and girls are no longer clearly differentiated on maternal variables although the trend persists for males to tend to have higher mean score" (p. 27). Moss attributes this observation to the fact that male infants ". . . slept less and cried more during both observations and these behaviors probably contributed to the extensive and stimulating interaction the boys

experienced with the mother, particularly for the 3-week observations", (p. 27). It is interesting to note that, even when sleep time and irritability were controlled by co-variance, mothers, both at three weeks and three months, stimulated and aroused male infant ficantly more than female and imitated female sounds and vocalizations signif cantly more than male sounds and vocalizations. Moss states in references to this latter finding that ". . . this response could be viewed as the reinforcement of verbal behavior, and the evidence presented here suggests that the mothers differentially reinforce this behavior on the basis of the sex of the child" (p. 28).

Moss (1967), along with other authors (Escalona, 1965; 1968; Bell, 1968), takes the position that the child's behavior significantly affects, and to a degree determines, the parental behav or towards him. Moss states that:

> . . . at first the mother is shaped by the infant and this later facilitates her shaping the behavior of the infant. We would therefore say, that the infant, through his own temperament or signal system contributes to establishing the stimulus and reinforcement value eventually associated with the mother. According to this reasoning, the more irritable infants (who can be soothed) whose mothers respond in a contingent manner to their signals should become most amenable to the effects of social reinforcement and manifest a higher degree of attachment behavior. The fact that mothers respond more contingently toward female infants should maximize the ease with which females learn social responses.
>
> . . . An alternative explanation is that mothers respond contingently to girls and not to the boys as a form of differential reinforcement, whereby, in keeping with cultural expectations, the mother is imitating a pattern that contributes to males being more aggressive or assertive, and less responsive to socialization. Indeed these two explanations are not inconsistent with one another since the mother who is unable to sooth an upset male infant may eventually come to classify this intractable irritability as an expression of "maleness" (p. 30).

This position is somewhat similar to that of Feshback (1970) cited earlier.

Goldberg and Lewis (1969) found that at six mo mothers of girls touched their infants more than mothers of bo ey also found that mothers vocalized to and breast-fed female infants significantly more than male infants. They state that ". . . when the children six months old, mothers touched, talked to and handled their daughters more than their sons and when they were 13 months old, girls touched and talked to their mothers more than boys did" (p. 29). In a clinical observation, they report that mothers are f tly clearly irritated by incorrect sex-labelling of a child. They that the magnitude of the mother's displeasure is a clear indicator of her commitment to the sex of the child. One of their conclusions is that ". . . it is clear that the young child, before seeking to model his behavior, is already knowledgeable in some appropriate sex-role behavior" (p. 30).

Messer and Lewis (1972), in a study parallelling that of Goldberg and Lewis (1969), sought to study both social class and sex-differences in the attachment and play behavior of year-old infants. Messer and Lewis used a similar setting and the same measures to assess a lower-class sample in contrast to the middle-class sample used by Goldberg and Lewis. They found that:

> . . . the results for infants of lower-class parents seen in a different city, at a different time and by different Es, parallel those for the middle-class sample and thus lend strong support to the generality of the sex differences in several infant-mother attachment behaviors (p. 302).

They report that ". . . the most impressive class difference in one-year-old infants revealed by this study was that lower-class infants vocalized considerably less . . . than did middle-class infants" (p. 302).

Lewis (1972b) in a different study, obtained similar results. In an observational study of 32 three-month-old infants and their mothers, he found significant differences in maternal treatment of children in terms of the amount of maternal vocalizing and holding behaviors, the former being higher for females, the latter for males. Lewis discusses these results in terms of what he calls proximal (touching and holding) and distal (looking and vocalizing) modalities. He suggests ". . . that the behavioral associations of mothers of boys tend to be equally distributed between proximal . . . and distal . . . while the behavior associations of mothers of females tends to be loaded in the distal modality" (p. 108). He goes on to add that this differential treatment, although producing sex-differences in the child's behavior, is ". . . not a function of the infant's behavior but rather differential maternal responsivity as a function of the sex of the infant" (p. 110).

Fagot (1974), in an observational study of twelve families (including both mothers and fathers and their 18-24-month-old children), found significant evidence of sex-differentiated parental treatment. She found that both parents, especially mothers, gave more praise to girls than to boys and that both parents criticized girls more, the mother being the more critical. She also found that both sexed parents were more likely to join in the play of their sons than of their daughters. She reports that there was also a tendency, although not significant, for the mother to physically punish both sexed children more than the fathers. These findings can be considered as being both similar and supportive of the proximal and distal treatment modalities suggested by Lewis (1972b) which were previously discussed.

Kagan (1971), in his own studies and a review of the literature, has found evidence of greater variations in sex-typed behavior across social classes for female than male infants and preschoolers. He found that middle-class female infants of eight months would orient longer to speech and also quiet more to meaningful speech passages than would lower-class infants. Kagan states that while findings of sex-differences in older children could be attributed to identification factors this is clearly not the case in infants of eight to twelve months. He states that ". . . at this very early age, we believe that there is greater variability across social class levels in maternal reaction to daughters than to sons" (p. 185). In discussing observations of verbal behavior obtained in a series of home visits of children between 27 and 90 months, he similarly reports that ". . . well-educated mothers of daughters were three times more likely than poorly educated ones to chide their daughters for not performing up to a standard held by the mother" (p. 187). He adds that for sons there was no comparable class difference.

The findings of Rabban (1950) which were discussed earlier in the paper are of interest here. Rabban similarly found that males in both middle and lower classes were more clearly aware of sex-appropriate behaviors than were females of the same class levels. Although Rabban was not looking at verbal behavior, as was Kagan, he found that both lower-class males and particularly females were more clearly aware of their sex-appropriate roles than were middle-class children. Although both authors were looking at different variables, the possibility of either some type of confounding results or subtly differing rearing pattern is suggested.

B. Sex-Differentiated Treatment after Infancy

Many studies have reported findings of sex-differentiated treatment of children after infancy (Lynn, 1959; 1964; 1966; Kagan and Lemkin, 1961; Kagan, 1964; Sears, Alpert, and Rau, 1965; McCandless, 1967; Mussen, 1969; Lambert, 1971). Sex-differential treatment has been reported in many areas of parent-child interaction, including punishment and control, achievement expectations, and nurturance and affection (see Oetzel, 1966). Because much of this work has been discussed in previous sections of the paper (see Chapter II), additional elaboration in this section is unnecessary.

The fact of sex-differentiated treatment is a well-established fact. The extent and nature, norms, degree of systematization, and process initiating factors for this sex-differentiated treatment are not well developed or clearly understood.

Sex-differentiated treatment at all ages could hypothetically have both social and constitutional bases. The social bases could be directed by both aware and unaware perceptions. Goffman (1967), in discussing various interaction rituals, points out that these behaviors may or may not be within the awareness of the performer. Mischel (1966; 1970) raises a somewhat related point regarding a type of inconsistency in a person's behavior. He points out, in his discussion of the role of learning on the acquisition of sex-typed behavior, that he believes that this behavior reflects both the contingency rewards given by the parents as well as the behavior model offered by the parents. He suggests that the two are not necessarily consistent with each other. The parent could be treating the child in a sex-differentiated manner, yet the same parent,

through his own behavior, could be offering the child a very different model.

In several aspects of human interaction, highly systematized, culturally shared behavior patterns have been described. Lambert (1971), for example, states that he believes:

> . . . that actors, when they come into contact with each other, need not negotiate a contract entirely anew. They are, to a significant degree, scripted through socializing processes that provide them with common assumptions. . . . One such set of assumptions is the set of dominant images we all share, in varying degrees, of the sexes (p. 42).

He also points out that these assumptions are "typically unverbalized" (p. 41) and that they, along with knowledge, represent the grounds on which human action is based.

Various authors have begun an extensive study of these behaviors and their functions (Rosenthal and Jacobson, 1968; Rosenthal and Rosnow, 1969; Birdwhistle, 1970; Watzlawick, Beavin, and Jackson, 1967; Goffman, 1963; 1967; Laing, 1968). As was suggested above, these behaviors, and the information communicated through them, can be outside the awareness of the performer. In this interaction process, the same of course holds true for both parties. It is the feeling of the author that this type of interaction analysis approach could be quite useful in the study of sex-role development. Parents could, for example, without their awareness be transmitting to very young children of one sex quite different pieces of information than they would transmit to opposite-sexed children. Within this model, of course, the child is also a communicator sending messages to the parent. Although, as was previously pointed out, some work has been done on parent-child interaction (Escalona, 1965; 1968; Moss, 1967; Bell, 1968; Lewis, 1972b), to the best of the author's knowledge,

research using an interactional communication type of model has not been carried out; however, the foreshadowings of it are evident in the work of Lambert (1971).

CHAPTER III

DEVELOPMENT OF PROBLEM AND RESEARCH QUESTIONS

Development of Problem

In much of the current theorizing, the development of sex-differentiated behavior is hypothesized to occur as a result of both environmental and physiological factors and their interactions. This position is accepted by the author. An elaborated theoretical explanation of the nature, operation, and relative contributions of these environmental and physiological factors, and how they are related and interact, has yet to be developed in the literature. Current researchers, while acknowledging the overall complexity of the problem, typically focus their attention on very specific problems and variables within a given dimension, while attempting to eliminate or control as many potentially confounding variables as possible. Such an approach will be taken in this study.

The particular aspect of the problem which this paper is aimed at studying is the environmental one. The study is aimed at assessing the parent's sex-role differentiation of young children between birth and three years of age.

Kagan pointed out in 1964 that, at that time, a relatively small amount of work had been done on sex-role learning because:

> . . . the two major attempts to construct comprehensive schemes for understanding behavior--behavioral and psychoanalytic theory--placed needs at the center of their systems and made strivings for the goals of food,

> protection from pain, love, security, aggression, sex and dependency the primary determinants of behavior. These needs are common to both sexes and neither theory directed attention to sex differences in the hierarchy of patterning of these needs (p. 137).

Although work on the area has continued since Kagan made the previous statement, the area is still not extensively developed.

Much of the work on development in general, especially prior to the early 1950's, was very much focussed on describing characteristics of children. About this time, researchers began to change their focus of attention and began to study developmental processes in addition to characteristics. This change of focus brought about renewed interest in the area (Liebert, Poulos, and Strauss, 1974). Kagan's (1964) remarks illustrate how a similar trend was occurring, possibly somewhat more slowly, in sex differences research. This study is very much focussed on the processes of child development and reflects not only the changes in the whole field of development but the increased sensitivity to the various aspects of non-verbal behavior that appear to have marked influences on learning in interaction (see Chapter II, p. 63).

Within the social learning framework, various theorists have suggested the importance of early sex-typed experiences for the development of an appropriate sex-role (Lynn, 1959; 1966; Kagan, 1964; Hartley, 1964; Hampson, 1965; Stoller, 1965; Green, 1967; Biller and Borstelmann, 1967; Mussen, 1969; Goldberg and Lewis, 1969). Data illustrating sex-differentiated treatment and, theoretically, a child's experiences as a result of this treatment have been reported from shortly after birth.

There is some debate as to whether this treatment arises from SRD by parents or whether the behavior is a function of sex-differences in child behavior which actually call forth sex-differentiated behavior

in the parent. Various authors (Moss, 1967; McCandless, 1967; Kagan, 1971) suggest that probably both factors are influential in determining parental behavior. Kagan states that ". . . since cultures are apt to adopt practices that are friendly to biological attributes of the organism, both explanatory hypotheses may have some merit" (p. 186). As has been illustrated by the work of Hampson (1965) and Money and Ehrhardt (1972), early sex-typed experiences do have a significant effect on the subsequent sex-role development of the child; however, as was pointed out above, the relative effect of this as compared to other factors is not known.

Various authors (Kagan, 1964; Biller and Borstelmann, 1967; Ward, 1969) accept the position originally proposed by Brown (1956) and later developed by Lynn (1959) on the importance of "sex-role preference" in the development of sex-role identification. Kagan (1964), for example, feels that the child first must learn his label. After this has been accomplished, sex-role identification can occur. A similar view is taken by Mussen (1969) who refers to the first step in sex-role learning as "labelling."

Kagan (1971) states that as a result of early experiences the child develops various schema that later become integrated into various cognitive structures. Kagan's idea of schema differs slightly from that of Piaget (1969) in that Kagan puts greater emphasis on the nature of the experiences the child is offered rather than the child's internalization of his own actions. Although Kagan does not discuss these schema in terms of sex-role development, it would appear that this concept would be directly applicable to any type of sex-differentiated experience the

child might have as a function of his sex-differentiated treatment. Indirectly supporting this statement, Kagan, in a different context, points out that early sex-differentiated behavior must be accounted for on some other basis than identification, as identification is clearly not operative at eight to twelve months.

It would appear that in order for a child to develop sex-role preference or to 'learn his label,' he must receive some type of sex-differentiated experiences, particularly in the early stages of identification. As has been pointed out, research has shown that children do in fact receive some amount of sex-differentiated treatment at very young ages. The experiential or learning aspect of early sex-differentiated treatment, as per the child, could be regarded in terms of his developing schema (Kagan, 1971) while the parental "teaching" or "education" process (Schmidt, 1973) might be conceptualized in terms of those experiences which the parent offers the child. These experiences could take various forms including actual treatment (i.e., roughness or gentleness, amount of verbal stimulation, or amount of tactile stimulation) or more subtle forms such as one which Hartley (1964) has called "canalization," whereby the child is offered selected objects and symbols which are regarded as being appropriate to his sex.

What factors are responsible for the initiation of sex-differentiated treatment are not clear. Goldberg and Lewis (1969) feel, however, that parents have a strong investment in the sex of their children. Lambert (1971) states that the process is rooted "in the very structure of the family" (p. 31). Mussen (1969) believes that the process begins when the child is very young. He suggests, when describing

a hypothetical (though undesirable) experiment, that if children were reared in a highly controlled laboratory setting, between one and four years of age, they could probably be programmed in such a way as to produce stereotypical sex-appropriate behavior, profoundly reversed sex roles, or something in between" (p. 727). This would suggest that the critical period either in terms of the child's learning (his probable measure) or the parent's "tuition" falls within this period. It might also be suggested that the experiment be begun before the age of one year! As has been previously pointed out, McCandless (1967) believes that by the time children reach the age of about 18 months adults begin to expect sex-differences in behavior. He states, however, that the toys given "boys and girls differ almost from babyhood"(p. 452). Bardwick (1971) also expresses the opinion that there is little parental differentiation between the sexes. She believes that all babies are regarded as "feminine" until some unspecified age at which parents begin to differentiate between them according to sex.

The writings of these various authors suggest that parents may differentially respond to young children on the basis of the child's sex. This work also suggests that sex-typed parental treatment can play a significant role in a child's subsequent sex-role development. It might also be suggested that a parent's perception of a child, in terms of the degree to which the child is regarded as masculine or feminine, might serve as a controller, or partial controller, for certain of the experiences (i.e., sex-typed) that the parent might offer the child. This study, in researching parental SRD, is seeking to find if parents do differentially perceive children on the basis of their sex.

Various other authors believe that SRD is not as significant a factor as the child's age in determining the nature of parental treatment (Emmerich and Smoller, 1964; Rothbart and Maccoby, 1966). Rothbart and Maccoby found that the sex of the parent was a better predictor of sex-differentiated treatment than any sex-role stereotype. They also found that the strength of SRD by parents affected the degree to which parents practiced sex-differentiated treatment, rather than the nature of that treatment.

Several questions arise out of these studies. Does sex-role differentiation occur from birth or does it have a later onset? If sex-role differentiation is present at birth, is it as great as it is at later ages? Does sex-role differentiation gradually increase with the age of the child, or is there a "critical age" at which parents increase this differentiation? Another series of related questions raised by the work of Rothbart and Maccoby (1966) center around the relationship between the degree of SRD maintained by parents and the parents' actual sex-differentiated treatment, particularly of very young children.

Another aspect of the problem of early SRD centers around the question of whether parents practice SRD to an equal extent with both-sexed children. While several instances of sex-differentiated treatment have been reported throughout infancy and early childhood it is interesting to note that between three and five years of age male and female children have been found to make an equal number of appropriate choices of sex-typed objects (Rabban, 1950; Hartup and Zook, 1960; Kohlberg, 1966). These findings are interpreted as indicating that sex-role "identification" was proceeding at an equal rate for both-sexed children. This trend does not persist after five years of age (Brown, 1956;

De Lucia, 1963; Kohlberg, 1966).

These findings would suggest that while children of both sexes had received sex-differentiated treatment the relative effect of this treatment was approximately equal for both sexes. This could suggest that, in the rearing of the children, up to the age of testing, sex-differentiated practices, such as canalization, had been carried out to equal degrees. Although evidence of sex-differentiated treatment has been found, no work has been done in terms of SRD by parents towards the very young age group.

Successful sex-role identification or development is typically considered to be a function of the involvement of both parents (Johnson, 1963; Kagan, 1964; Lynn, 1964; Stoller, 1965; Mischel, 1970; Bardwick, 1971). Differing sex-differentiated behaviors by opposite-sexed parents have been reported from early childhood (Parsons, 1955; Emmerich, 1962; Kagan and Lemkin, 1961; Mussen and Rutherford, 1963; Rothbart and Maccoby, 1966; McCandless, 1967; Biller and Borstelmann, 1967). Relatively little is known about whether this differentiation also occurs in infancy. In terms of SRD, the question that could be asked is whether there is a consensus between male and female parents in terms of both the onset and/or the degree to which they display SRD.

Summary of Theoretical Position

The theoretical position taken by the author can be summarized as follows:

1. Sex-related behaviors (including sex-roles) are assumed to be the result of both constitutional and environmental factors and their interaction.

2. Although various, primarily psychophysiological, sex-differences, which have been discovered shortly after birth, would appear to have a physiological basis, various later-appearing aspects of sex-related behavior, although reflecting physiological factors also, to a significant degree reflect social learning experiences.
3. Children learn sex-roles as a result of sex-differentiated treatment and experiences which are begun when the child is very young.
4. The sex-differentiated treatment given the child reflects what might be termed a cultural or sub-cultural situation-specific patterns of behaviors which are shared by the parents. These patterns of behavior can be cued by the child either directly (i.e., by his physical characteristics or activity level) or indirectly (i.e., through various associations to such things as name, color, or other symbols).
5. It is assumed that parents share the male and female stereotypes found in their culture group and will convey to and expect their child to develop behaviors and personalities in line with these stereotypes.
6. SRD by parents is assumed to be reflected by the parental ratings of both-sexed children at the various ages as represented on the questionnaire used in this study.

Research Questions

A number of basic theoretical questions emanate from the preceding review of the literature. The questions which this study is

aimed at answering are the following:

1. Do parents perceive male and female children, of three years of age and under differently?
2. Do parents' perceptions of children depend on both the age and the sex of the child?
3. Do opposite-sexed parents perceive children differently?
4. Do male and female parents perceive male and female children differently?
5. Do opposite-sexed parents perceive children differently at different ages?
6. Do parents see children differently at different ages?
7. Do opposite-sexed parents perceive male and female children of different ages differently?

CHAPTER IV

THE BACKGROUND AND DEVELOPMENT OF THE INSTRUMENT

This study might be conceptualized as primarily representing an attempt to discover if parental concepts of young children differ on the basis of the child's sex. To assess this, a specific instrument needed to be developed. The instrument, which took the form of a questionnaire, essentially sought to determine if sub-categories of the concept 'child' were differentially responded to on the basis of child's sex and age. It also sought to determine if opposite sexed parents perceived these categories in a similar manner.

One should be aware that the concept 'child' and similarly sub-categories of this concept are both cognitively and affectively very complex; hence, initial establishment of conceptually discrete and consistent aspects or sub-categories of this concept pose a difficult problem. Little in the way of theoretical or empirical foundations have been found in the literature on which to base the development of a research instrument. It is intended that the development of this instrument might serve to initiate research efforts aimed at more clearly differentiating the nature of the concept 'child' as well as more specifically answering the research questions posed in this study.

The specific questionnaire, which was developed, is discussed

below. It contained two parts, the first being a series of questions aimed at obtaining specific descriptive information on the subjects while the second aimed at measuring SRD. (Please see Appendix B for a copy of the questionnaire.) The instrument was based on the Semantic Differential (SD) technique originally developed by Osgood and his colleagues (Osgood, Suci and Tannenbaum, 1957). The background and problems preceding the selection of an instrument and some of the limitations of other approaches which were considered are briefly described below. This is followed by a discussion of the general nature, background and development of the SD technique. The last section of this chapter deals with the development of the instrument used in the second phase of the study.

The Search for a Way

Although the SD technique was chosen for this study, it was not the first technique considered. Considerable time and effort went into trying to discover and develop alternative methods which might be used to assess parental SRD. Most of these methods, when carefully scrutinized, were either practically or (as was more often the case) operationally not acceptable. The majority of these early efforts focussed on using toys selected by parents for male and female children as indicators of the parents' sensitivity to children's sex.

Although relatively little work has been done on toys, particularly for the very young age group, it was felt that toys have a significant effect on various facets of a child's learning. It was also felt that parents, when selecting toys, significantly reflect or project many facets of their beliefs about children in general as well as the specific child for whom the toys are intended.

Toys can serve a great many functions, both for the child and the parent. There are doubtless many reasons why a parent chooses a particular toy. It was initially felt that two of the reasons influencing this selection might be the child's sex and age. It was also felt that the degree to which parents select toys along a sex-appropriateness dimension was a reflection of the SRD manifest by these parents. It was believed that if parents were asked to select toys for different-aged children any differences in their SRD, as a function of the child's age, would also be manifested.

The initial attempt to assess SRD was to have involved the parent being asked to select toys for each of a series of male and female children at various ages. Photographs of these children, labelled by age and sex, were to be the bases of the parent's selection. The toys from which the selection was to have been made were to have been previously rated as to their degree of male or female appropriateness. This approach was discarded as it would have forced a certain degree of sex-typed choice upon the parents and hence biased any results.

The second attempt was to have involved a similar set of child photographs; however, this time the toys from which the selection was to have been made were to have been randomly selected, thereby overcoming any possible biasing effects. This approach, although overcoming the

previous difficulties, also ran into a practical problem arising from the age-appropriateness dimension of the toys. Virtually no toys could be found which maintained age-appropriateness over the whole range of age bands being studied. When a toy did approach age-appropriateness, over the three year age range, its function or the basis of its intended use changed. In short, without a single set of stimuli covering the whole age range, the relative contributions of age, sex, and function could not be separated in the parent's choice and any data would merely reflect what parents thought appropriate for girls and boys at different ages. It would tell nothing specifically about the degree of SRD shown by the parents. Such normative data on toys might indeed supply useful insights about parental perceptions of both children and toys but would offer little specific information on the construct being studied.

The attempts to use toys as a means of assessing SRD were thus discontinued and the SD technique was adopted. This technique appeared to overcome the particular difficulties discussed above and also to answer the same questions.

When doing the initial work with toys, several informal observations were made which may serve as valid leads for future work on SRD. The most surprising observation was in terms of the relative numbers and categories of toys apparently available for males relative to females. It appeared that, if one considers toys as falling into three categories (namely, male, female, and sex-neutral), by far the greater numbers of toys, in local toy stores and toy catalogues, are in the male and neutral categories. There also appeared to be many more categories and play activities available in primarily masculine toys.

A second category of observations relate to infant and crib toys. Toy salespeople report that in the last few years there has been a marked increase in the demand for what might be termed active and manipulative play crib toys, as contrasted to the more traditional past categories of toys which were soft or could be sucked, mouthed, or rattled. These latter types of toys are still bought but not so exclusively.

There are also some changes towards greater flexibility in the coloring (i.e., blue and pink) of infant toys. This is illustrated by a pink hammer-shaped baby rattle offered for sale in various stores.

General Discussion of the Semantic Differential (SD)

The SD technique was originally developed by Osgood in the early 1950's and since that time has received wide and varied usage. Butzow (1968), Heise (1970), Kerlinger (1964), Osgood (1962; 1971), Osgood, Suci, and Tannenbaum (1957), and Snider and Osgood (1969), as well as various other authors, list a large number of studies from widely different fields in which the technique has been used. These fields include attitude, human value, personality, psychotherapy, and communication research, as well as research in cross-cultural, political science, and commercial areas. Since the range of areas in which the technique has been employed is discussed in other sources, such as those cited above, a review of this work will not be included in this paper.

As was stated above, the SD is not a single instrument; it is instead a technique aimed at assessing and quantifying meaning. Osgood and his co-workers state that the SD is ". . . essentially a combination of controlled associations and scaling procedures" (Osgood, et al., 1957, p. 20). He states that the subject is provided with

> . . . a concept to be differentiated and a set of bipolar adjectival scales against which to do it, his only task being to indicate, for each item (pairing of a concept with a scale) the direction of his association and its intensity on a seven-step scale (p. 20).

He goes on to add that:

> . . . By semantic differentiation, then, we mean the successive allocation of a concept to a point in the multidimensional semantic space by selection from among a set of given scaled semantic alternatives. Differences in the meaning between two concepts is then merely a function of the differences in their respective allocations within the same space, i.e., it is a function of the multidimensional distance between two points (p. 24).

Nunnally (1969), in his description of the technique, states that the term SD is used in a ". . . generic sense to refer to any collection of rating scales anchored by bipolar adjectives" (p. 535). He states that the SD, rather than being a particular instrument or test, is instead ". . . a very flexible approach to obtaining measures of attitudes and other sentiments" (p. 535).

Osgood and Suci (1955) state that the origins of the work on the SD come from studies of synesthesia. They state that:

> . . . In these studies it was found that the process of translating from a musical stimulus to "visual" response, for example, could be described as the parallel alignment in thinking of two or more dimensions of experiencing, each defined in terms of polar opposites . . . with translations occurring between equivalent portions of these related continua (p. 326).

They go on to add that this process is not limited to rare synesthetic individuals but is ". . . quite general and consistent in the population and congruent with standard systems of metaphor in the culture" (p. 526).

Osgood and Suci also point out that the logical basis of the SD is as follows:

1. The process of description or judgement can be conceived of as the allocation of a concept to an experiential continuum definable by a pair of polar terms.

2. Many different experiential continua, or ways in which meanings can vary, are essentially equivalent and hence may be represented by a single dimension.

3. A limited number of such continua can be used to define a semantic space within which the meaning of any concept can be specified (pp. 326-27).

The technique was originally developed as a means of measuring meaning. Osgood was interested in the linguistic encoding process through which meaning is derived from language. In his early works, he regarded this process essentially in terms of a representational mediation process. Through this process, he tried to gain an understanding of meaning at what he terms the "semantic or ideational level" (Snider and Osgood, 1969, p. 3). In other words, he sought to measure the meaning of signs. He began his analysis with what he termed a self-evident fact, namely, that ". . . the pattern of stimulation, which is the sign, is never identical with the pattern of stimulation which is the object" (Snider and Osgood, 1969, p. 6). On this basis he developed his mediation hypothesis which he formally stated in 1952 as follows:

> . . . a pattern of stimulation which is not the object is a sign of the object if it evokes in an organism a mediating reaction, this (a) being some fractional part of the total behavior elicited by the object and (b) producing distinctive self-stimulation that mediates responses which would not occur without the previous association of non object and object patterns of stimulation (pp. 9-10).

Osgood believed that through conditioning various additional pieces of meaning become added to the sign. These he termed "assigns--their meanings . . . literally 'assigned' to them via association with other signs rather than via association with the objects represented"

(Snider and Osgood, 1969, p. 10). Osgood states that:

> . . . it is apparent from the foregoing that the meaning which different individuals have for the same signs will vary with their behaviors towards the objects represented. This is because the composition of the mediation process, which is the meaning of a sign, is entirely dependent upon the composition of the total behavior occurring while the sign process is being established (pp. 10-11).

Although this individuality of meaning for various signs has some validity, Osgood and his co-workers have found, in their work subsequent to this early position statement, that there is also considerable intra- and inter-cultural agreement as to the "assigned" aspects of meaning (Osgood, 1962; 1971; Snider and Osgood, 1969). This consensus of meaning is significant enough to allow the development of an atlas of 550 concepts which are described in terms of their usage in American English (Snider and Osgood, 1969).

Various statements of Osgood's theoretical model can be found throughout the literature (i.e., Osgood, 1957; 1962; Snider and Osgood, 1969), hence a more complete discussion will not be included here. A recent and relatively unchanged statement of Osgood's theoretical position can be found in his article entitled "Exploration in Semantic Space: A Personal Diary" (1971).

Nunnaly (1967) essentially accepts the theoretical position presented by Osgood. In his concise discussion of what the instrument measures, Nunnally explains that meaning is a very global term referring to ". . . all possible reactions that people have to words and things" (p. 540). He believes that there are three overlapping aspects of meaning, namely: denotation (the description of an object in terms of its physical characteristics); connotation (what implications the object has for the particular person); and association (other objects brought to

mind when an individual sees or hears about a particular object). He believes that the SD primarily measures the connotative aspects of concepts. He also adds that the SD is partially measuring denotative meaning; however, this information is incidental.

Osgood concurs that the word "meaning" can be used in several senses (Osgood, et al., 1957). He is, however, hesitant to accept the position that the SD is measuring connotative meaning. Although considering this interpretation, he initially preferred to discuss what was measured by the technique only in mediational terms (Osgood, et al., 1957). While continuing to retain his basic theoretical position, Osgood has modified his position regarding what the SD measures. He states his position change as follows:

> The accumulating data have proved my expectation wrong . . . the dominant factors of evaluation, potency and activity that keep appearing certainly have a response-like character reflecting the ways we can react to meaningful events rather than the ways we can receive them. . . . But these major factors also seem to have an 'affective' as well as a response-like character (p. 19).

For this reason, Osgood currently regards the technique as assessing affective meaning.

Heise (1969), in a paper on methodological issues related to the use of the SD, points out that most adjective pairs used in SD research are true linguistic contrasts and that it is assumed in this work that linguistic contrasts provide a means for making up scales which define basic affective contrasts. He adds, however, that certain of the SD scales often used (i.e., masculine--feminine, hard--soft) are not true affective contrasts.

McGuire (1973) points out these alternative interpretations of the SD. He states that, in general, two kinds of usage for the technique can be found. The first is the assessment of connotative meanings of the type orignally described above; the second is the structuring of the attitude domain. For the latter use, he believes that the ". . . problem is much like Osgood's original problem of trying to bring order to the connotative meanings of words" (p. 296). He adds that:

> In either case a semantic differential format may be used to collect ratings on certain concepts in the domain of interest relative to a set of pertinent bipolar adjective scales. . . . Used in this way, the semantic differential is an instrument of exploration rather than measurement (p. 296).

It is as an exploratory instrument that the SD is used in this study.

Physically, the SD consists of a number of scales, each scale being a bipolar adjective pair, together with one or more concepts which are to be rated with the scales. The scales are usually seven-point rating scales, the underlying nature of which has been empirically determined. Each scale measures one or sometimes two dimensions of the semantic space referred to earlier.

Through their research, Osgood and his colleagues have found that, very frequently, the adjective pairs used to rate various concepts will tend to form three fairly distinct clusters. These clusters form the basis for the dimensions or factors Osgood refers to when describing the semantic space in which various concepts are located. The three dimensions or factors Osgood has most frequently found to lie behind the scales are considered to reflect evaluation, potency, and activity. The most important cluster usually found consists of the 'evaluative'

adjectives such as pleasant--unpleasant and good--bad. A second cluster of adjectives frequently found seem to reflect strength or 'potency' ideas such as strong--weak or large--small. The third factor includes adjectives reflecting 'activity' or motion such as fast--slow and active--passive. Various authors point out (Kerlinger, 196 ; Nunnally, 1967; Heise, 1969; McGuire, 1974) that while these factors are indeed common ones they are not the only ones possible and, depending upon the concepts being rated, and to a lesser degree the scales being used, different factors or dimensions may be found.

Osgood, et al. (1957), state that the term 'concept' is used ". . . in a very general sense to refer to the 'stimulus' to which the subject's checking operation is a terminal 'response'" (p. 77). They add that what may function as a concept in this broad sense is practically infinite. They point out that both in their work and that of others the concepts rated have ranged from single words or word phrases to various types of concrete and abstract pictures, objects, and experiences. Heise (1970) presents a more recent and extensive list of studies illustrating the wide range of alternative ways in which concepts have been presented. The concepts are most frequently presented as printed words, usually nouns or noun phrases.

For specific discussions of methodological procedures, scoring analysis, and techniques, see Osgood, et al. (1957), Kerlinger (1964), Nunnally (1967), Heise (1969; 1970), and McGuire (1973).

For reviews and critiques of the SD technique, see Carroll (1959), Heise (1969; 1970), Nunnally (1967), Kerlinger (1964), and Snider and Osgood (1969), and McGuire (1973).

Development of the Questionnaire

The specific instrument developed for this study was based on the SD technique and consisted of ten concepts which were to be rated by 20 bipolar adjective pairs. The instrument was developed following the guidelines and recommendations found in the works of Osgood, Suci, and Tannenbaum (1957), Nunnally (1967), Heise (1969; 1970), and McGuire (1973; 1974). Where a difference of opinion on specific points existed, an attempt was made to follow the consensus view of the authors discussing the particular point.

Each rater was asked to rate both "boys" and "girls" at each of five ages, a total of ten different concepts. The ages rated included newborn, six-months, one-year, twenty-one-months, and three-years. These ages were chosen as the first four represented the approximate age period of relatively distant landmarks in a child's life, while the terminal age represented an age at which sex-differentiated child behavior and parent attitudes were clearly evident.

Each concept was rated in terms of a set of 20 bipolar adjectives, each of which reflected a sex-difference observed in the behavior of children of three years of age or younger and/or a sex-difference which other researchers had found to be attributed to males or females, either within the age group of interest or of older age groups. All adjective pairs chosen were considered by the experimenter and various of his colleagues to be either appropriate for the age groups being studied or of a general enough nature to be applicable to any age group.

In order to find specific adjective pairs that might be used, various categories of the literature were reviewed. A review of the

literature describing sex-differences in the behavior of young children was carried out and all significant sex-differences were listed. The studies from which potential sex-differences were selected included: Bardwick (1971), Lewis (1972b), Goldberg and Lewis (1969), Fagot (1973a; 1973b, 1974), Kagan (1971), Hartup and Zook (1960), Moss (1967), Hamburg and Lunde (1966), Terman and Tyler (1954), Mischel (1966), and Kagan and Moss (1962).

A second body of literature reviewed dealt with male and female stereotypes. Potential age-appropriate, sex-typed bipolar adjectives were also selected from this literature. The studies from which these adjective pairs were chosen included: Bardwick (1971), Toews (1973), L. Schmidt (1973), Broverman, et al. (1968), Broverman et al. (1970) Lambert (1971), and Kammeyer (1964). The work by Osgood and his colleagues (Osgood, et al., 1957; Snider and Osgood, 1969), in which concepts such as "man," "woman," "boy," and "girl" were rated on various SD scales, was also considered as a source of possible scales. On the basis of these reviews, a list of 35 possible bipolar adjectives meeting the previously stated criteria was developed. This list of adjective pairs can be found in Table 2.

Using these 35 adjective pairs as scales, a pilot instrument was developed. Six concepts (boy and girls at three ages--newborn, 18-months, and three-years) were then rated on these scales. A group of 105 persons of both sexes, ranging in age from 17 to 43 years from various backgrounds including undergraduate university students, second-year nursing students, students from a community college, and various friends and colleagues of the author, as well as anyone else who could be co-opted,

TABLE 2

Bipolar Adjective Scales Used to Rate Male and Female Children
Includes Means, Standard Deviations, and Selected T-scores
(N = 105)

Scales	Females Mean ($\bar{X}$)	Females Standard Deviation	Males Mean ($\bar{X}$)	Males Standard Deviation	Differences in Means	t	p
1. Active--Passive	2.889	1.751	2.365	1.616	.524		
2. Weak--Strong	3.929	1.644	4.325	1.642	.396		
3. Quiet--Loud	4.262	1.470	4.960	1.482	.698		
4. Pleasing--Annoying	2.587	1.255	2.952	1.547	.365		
5. Rough--Gentle	4.770	1.426	3.706	1.579	1.064	3.893	.01
6. Easily quieted--Not easily quieted	3.865	1.644	4.508	1.698	.643	4.093	.001
7. Masculine--Feminine	4.936	.957	3.143	.923	1.793	8.056	.001
8. Shy--Outgoing	3.841	1.417	4.309	1.312	.468		
9. Not affectionate--Affectionate	5.302	1.323	5.127	1.327	.175		
10. Impulsive--Not impulsive	3.024	1.445	2.516	1.320	.508		
11. Responsive--Not responsive	2.429	1.342	2.452	1.307	.023		
12. Hard--Soft	5.556	1.073	4.619	1.436	.937		
13. Beautiful--Ugly	1.976	1.072	2.254	1.168	.278		
14. Smooth--Rough	2.317	1.295	2.690	1.422	.373		
15. Sharp--Dull	2.952	1.332	2.817	1.101	.135		
16. Calm--Excitable	4.913	1.558	5.198	1.297	.285		
17. Colorful--Colorless	2.484	1.396	2.524	1.429	.040		
18. Cries easily--Never cries	3.270	1.262	3.214	1.245	.056		
19. Not self-confident--Self-confident	4.214	1.445	4.357	1.488	.143		
20. Dependent--Independent	2.778	1.573	2.905	1.692	.127		
21. Needs attention--Does not need attention	2.230	1.216	2.302	1.236	.073		
22. Likes to be talked to--Prefers quiet	1.841	.868	1.936	.824	.095		
23. Large--Small	4.976	1.300	4.230	1.599	.746		
24. Sensitive to pain--Not sensitive to pain	2.508	1.413	2.597	1.371	.089		
25. Likes watching--Does not like watching	2.635	1.531	2.762	1.472	.127		

TABLE 2
(Continued)

Bipolar Adjective Scales Used to Rate Male and Female Children
Includes Means, Standard Deviations, and Selected T-scores
(N = 105)

Scales	Females Mean ($\bar{X}$)	Females Standard Deviation	Males Mean ($\bar{X}$)	Males Standard Deviation	Differences in Means	t	p
26. Not strong-willed--Strong-willed	4.857	1.44[illegible]	5.230	1.328	.373		
27. Cuddly--Not cuddly	2.190	1.029	2.849	1.453	.659		
28. Delicate--Not delicate	2.722	1.145	3.683	1.582	.961	10.274	.001
29. Dislikes attention--Likes attention	6.040	1.130	6.048	1.007	.008		
30. Meek--Dominant	4.294	1.538	4.492	1.562	.198		
31. Alert--Not alert	2.294	1.222	2.309	1.165	.015		
32. Confident--Not confident	3.460	1.343	3.413	1.299	.047		
33. Likes being held--Dislikes being held	2.111	1.156	2.595	1.448	.484		
34. Dislikes being rocked--Likes being rocked	5.627	1.314	5.111	1.590	.516		
35. Likes being touched--Dislikes being touched	2.214	1.159	2.659	1.432	.445		

were asked to complete the ratings. A smaller group of 18 Ss, from within the larger group, was asked to use the same scales but rate males and females at seven ages instead of the three ages rated by the larger group. These ages were at six-month intervals from newborn to three years. The data from the smaller group was used to assess the feasibility of this approach as a measure of SRD, while the larger group ratings were used as a basis for selecting those scales to be used in the final instrument.

A complete analysis of the data from the smaller group was not carried out. To assess the feasibility of this approach for answering the major questions being asked, namely, whether SRD by parents is found in ratings of children under three years of age, the means and standard deviations of these scores were calculated as were 't' statistics for four of the scales which appeared to be more clearly discriminatory. The difference between the mean ratings for males and females on each age were also calculated. These scores are presented in Table 2. All 't' scores computed were significantly different at or below the $p = .01$ level.

On the basis of this small group data, it was decided that the study should be continued and the abbreviated form of the questionnaire (i.e., males and females at three ages) mentioned earlier were given to the additional 87 Ss.

In order to reduce the time required to complete the questionnaire, it was necessary to reduce the number of scales from that used in the first phase of the study. It was decided that in order to maintain a reasonable completion time, an instrument of no more than

20 scales should be used. It was also decided that factor analysis could offer guidelines for selecting those scales to be used.

A principal component factor analysis was carried out and a varimax rotation of the derived factor scores was performed. As a result of this, three relatively strong orthogonal factors accounting for 45.95 per cent of the total variance emerged. See Table 3 for a summary of the factor loadings for all scales.

The factors derived could be described as follows:

Factor 1: This factor could be considered as representing dynamism and reflecting attributes such as responsiveness and assertiveness. This factor bears some resemblance to the activity dimension typically found of the SD (as reflected by scales such as active-passive and impulsive-not impulsive); however, ratings on certain scales (such as affectionate-not affectionate and confident-not confident) suggest that the activity label is not adequate.

Factor 2: This factor appears to represent what might be termed as disposition, as perceived or judged by the adult. This factor reflects what might be regarded as personality attributes (i.e., shy-outgoing, meek-dominant, rough-gentle) but, when discussing very young children, the term disposition is considered more appropriate. It might be speculated that there is a possible conceptual similarity between disposition in young children and their personality. This factor appears to bear some similarity to Osgood's evaluative factor (i.e., scales such as weak-strong,

TABLE 3

Bipolar Adjective Scales Used in Determining Items to be Used in the Final Form of the CDQ
Specific Factor Loadings are Included

	Scales	Factor 1	Factor 2	Factor 3	h^2
1.	Active--Passive*	.671	-.418	-.190	.661
2.	Weak--Strong	-.570	.416	.339	.653
3.	Quiet--Loud	-.467	.616	.079	.604
4.	Pleasing--Annoying	.143	.643	.164	.461
5.	Rough--Gentle	.387	-.667	-.326	.701
6.	Easily quieted--Not easily quieted*	.207	.588	-.012	.389
7.	Masculine--Feminine*	.018	-.528	-.156	.303
8.	Shy--Outgoing	-.381	.367	.334	.391
9.	Not affectionate--Affectionate*	-.527	-.104	-.250	.352
10.	Impulsive--Not impulsive*	.528	-.324	-.077	.389
11.	Responsive--Not responsive*	.581	.084	.095	.354
12.	Hard--Soft*	.113	-.725	-.200	.579
13.	Beautiful--Ugly	.378	.581	.069	.485
14.	Smooth--Rough*	.075	.682	.115	.483
15.	Sharp--Dull*	.631	-.059	.012	.402
16.	Calm--Excitable	-.429	.443	-.105	.392
17.	Colorful--Colorless	.668	.154	.117	.484
18.	Cries easily--Never cries*	.008	.064	.608	.373
19.	Not self-confident--Self-confident	-.561	.107	.470	.548
20.	Dependent--Independent*	-.438	.218	.529	.519
21.	Needs attention--Does not need attention*	.005	.153	.682	.489
22.	Likes to be talked to--Prefers quiet	.428	.011	.551	.488
23.	Large--Small*	.290	-.496	-.313	.428
24.	Sensitive to pain--Not sensitive to pain*	.142	.177	.458	.262
25.	Likes watching--Does not like watching*	.469	-.082	.340	.342
26.	Not strong-willed--Strong willed*	.499	.198	.385	.436
27.	Cuddly--Not cuddly*	.022	.469	.5[illegible]	.534
28.	Delicate--Not delicate*	-.240	.586	.48[illegible]	.636
29.	Dislikes attention--Likes attention	-.244	.199	-.[illegible]	[illegible]
30.	Meek-Dominant	-.478	.410	[illegible]	.541

TABLE 3
(Continued)

Bipolar Adjective Scales Used in Determining Items to be Used in the Final Form of the CDQ
Specific Factor Loadings are Included

Scales	Factor 1	Factor 2	Factor 3	h^2
31. Alert--Not alert*	.643	-.099	-.004	.424
32. Confident--Not confident*	.631	-.081	-.352	.529
33. Likes being held--Dislikes being held*	-.135	.397	.582	.515
34. Likes being rocked--Dislikes being rocked	.135	-.116	-.495	.277
35. Likes being touched--Dislikes being touched	.000	.305	.594	.395
Sum of individual loadings	5.895	5.520	4.667	16.082
Percentage of common variance	36.66	34.32	29.02	
Percentage of total variance	16.84	15.77	13.33	45.95

*These scales were used on the final form of the questionnaire.

pleasing-annoying, and beautiful-ugly); however, various other scales (such as delicate-not delicate and masculine-feminine) suggest that this label does not adequately reflect this dimension.

Factor 3: The dimension reflected by this scale might be termed vulnerability. This factor also reflects one of Osgood's dimensions, namely, potency (i.e., scales such as cries easily-never cries and needs attention-does not need attention). Certain scales (such as likes being held-does not like being held and needs attention-does not need attention), however, suggest that the potency label for this factor is not adequate.

It is interesting to note that these three factors in certain ways reflect the evaluative, potency, and activity dimensions typically found in analyses of SD scales. The relative weightings of these factors, however, differ from the sequence typically found in Osgood's research.

The final form of the instrument reflected these three factors with ten scales selected from factor one, seven from factor two, and six from factor three. The bases on which these scales were selected are as follows:

1. Scales were initially ranked according to their loading on each factor and those 20 scales having the highest loadings, which also met the criteria listed below, were selected. The minimum loading for any scale selected was .41.
2. Only scales loading on one or, at most, two factors were selected.

Additional scales were eliminated to remove excessive duplication when several scales meeting the above criteria and having near equal loading on a given factor were found. Certain other scales were eliminated (such as pleasing-not pleasing, colorful-colorless, and beautiful-ugly) which, although meeting the above criteria, produced a negative rater reaction. Other scales were eliminated because it was felt by the author that for reasons of limited age-appropriateness (i.e., not self-confident-self-confident) these scales would be of questionable worth. See Table 4 for the scales chosen to be included on the final instrument, as well as a listing of the factors represented by these scales.

When the instrument was used in the second phase of the study, the scale scores were given a unit or zero value (Wackwitz and Horn, 1971), depending upon the factor(s) on which they were orignally loaded. A factor loading of .41 was considered as the minimum value acceptable for a value of one to be given. (See Table 4 for the weightings used on each scale.) Scales originally loading on a given factor were then summated and this was considered as representative of a score on a sub-category or aspect of the concept child.

These aspect scores, as they subsequently shall be called, are not considered as being necessarily equivalent to the original factors from which they were derived, but rather as representative of descriptively and conceptually useful sub-categories or aspects of the concept 'child.' These aspects are considered as more appropriately representative of or equivalent to what have been called subtest scores (Liebert, et al., 1974). These aspect scores will continue to be referred to by the descriptive lables given the factors from which they were derived.

TABLE 4

[illegible] Used in the Final Form of the Questionnaire
[illegible]d the Factors on which these Scales Load

		Factor		
		#1	#2	#3
	Not [illegible]pons[illegible]ve--Responsive	-*[1]		
	Ale[illegible];	+*		
	[illegible]ily--Never cries			+*
	[illegible]--L[illegible]	+*		
	[illegible] St[illegible]		-*	
	Deper[illegible]--Independent	-*		+*
7.	Impu[illegible]ive--Not impulsive	+*		
8.	Not confident--Confident	-*		
9.	Needs attention--Does not need attention			+*
10.	Passive--Active	-*	+*	
11.	Dislikes being held--Likes being held			-*
12.	Feminine--Masculine		+*	
13.	Sensitive to pain--Not sensitive to pain			+*
14.	Not delicate--Delicate		-*	-*
15.	Affectionate--Not affectionate	-*		
16.	Strong-willed--Not strong-willed	-*		
17.	Smooth--Rough		+*	
18.	Does not like watching--Likes watching	-*		
19.	Large--Small		-*	
20.	Easily quieted--Not easily quieted		+*	
	TOTAL	10	7	6

[1]Positive (+) and negative (-) signs indicate the weighting used on the scale when computing the summated factor scores.

In its final form, the instrument was presented in an 8-1/2" by 5-1/2" booklet and was entitled "Child Description Questionnaire" (CDQ). The booklet contained 16 pages including the title page. The last ten pages included the concepts to be rated, one concept and 20 scales per page. The concepts were sequenced according to age group from newborn to three years, and alternated according to sex, beginning with "Newborn Boy." The instrument was set up so that opposite-sex ratings, at the same age, were on opposite sides of the page, thereby making direct comparisons somewhat more difficult. The second and third pages of the CDQ asked for personal descriptive information such as age, years married, the sex and age of each child, country of birth, etc.. Raters were given the option of omitting personal information items such as their name and income range. Pages five and six of the questionnaire gave specific instructions for completing the scales. See Appendix B for a more complete description of the personal information questions asked, as well as specific instructions for completing the scales. The sequence and polarity of the scales for each concept were the same. This sequence and polarity was randomly determined.

CHAPTER V

METHODOLOGY

The Sample

A sample of 165 families (330 parents) was drawn from the 1973 Edmonton census data. The population of the city at the time of the census was slightly over 453,000 persons. It was originally desired that the sample used in the study be randomly selected from this population. To draw such a sample, however, was found to be operationally impracticable due to the organizational nature of the census data. Because of this difficulty, it was decided that, in place of a randomly selected sample drawn from the city as a whole, a random sample drawn from different parts of the city would be used. The parts of the city from which the sample was drawn were themselves randomly selected. The sample was utlimately drawn from 50 of a possible 453 enumeration areas of the city.

The population from which the sample was drawn consisted of all families having not more than three children of three years of age or under. To qualify for the study, a parent had to be married, living with his spouse, English-speaking, and Canadian-born. These latter items of information were not available from the census data, hence subjects (Ss) not meeting these criteria had to be eliminated after the sample was drawn.

Out of a possible maximum of 330 parents (165 families), 179 parents (96 mothers and 83 fathers) supplied the completed questionnaires used in the final analyses. This represents 54.2 per cent of the total

possible sample or 57.8 per cent of the sample after Ss not meeting criteria were eliminated. This percentage of return is considerably higher than that usually found on similar questionnaire-type research (Travers, 1969).

Out of the total possible sample, fifty-four families (32.7 per cent) did not take part for various reasons. A number expressed lack of interest or situational difficulties that precluded their taking part (12.7 per cent); some could not be contacted (18.2 per cent); some families were no longer intact (1.2 per cent); and one had been incorrectly categorized in the census data (0.6 per cent). One-hundred-and-eleven families (67.3 per cent) expressed a willingness to take part in the study. Out of the group of 222 possible parents, data from 28 males and 15 females were either not available or not used. The specific reasons why these data were not used can be found in Table 5.

Table 5

Number of Subjects Excluded and Reasons for Excluding Them

Reason	Number of Families Excluded	Number of Mothers	Number of Fathers
1. Both parents not Canadian-born	4	4	4
2. Father not Canadian-born	-	-	5
3. Mother not Canadian-born	-	1	-
4. Questionnaire by both parents incomplete	9	9	9
5. Questionnaire by father incomplete	-	-	4
6. Questionnaire by mother incomplete	-	1	-
7. Questionnaire not returned by father	-	-	6
8. Questionnaire not returned by mother	-	0	-
Total	13	15	28

A summary of the descriptive data on those subjects who took part in the study can be found in Table 6.

Table 6

Sample Characteristics: Descriptive Data

Data	Mean	Standard Deviation	Range
Mothers (N = 96)			
Age (years)	25.90	4.28	19-43
Years Married	5.26	2.94	2-21
Number of Brothers and/or Sisters	3.3	1.75	1-11
Number of Children	1.41	.52	1-3
Number of Male Children	.74	.43	1-3
Number of Female Children	.65	.38	1-2
Age of Children (years)	1.79	.68	.1-3.8
Age of Male Children (years)	1.92	1.0	.1-3.8
Age of Female Children (years)	1.65	.82	.1-3.5
Blishen Index Rating[1] of Working Mothers (N = 38)[2]	48.25	12.33	29.99-70.14
Income Range of Working Mothers	1.48	.92	1-4
Fathers (N = 83)			
Age (years)	28.70	4.38	20-46
Years Married	5.48	3.00	2-21
Number of Brothers and/or Sisters	3.61	2.25	1-12
Number of Children	1.41	.52	1-3
Number of Male Children	.79	.42	1-3
Number of Female Children	.61	.38	1-2
Age of Children (years)	1.79	.70	.1-3.8
Age of Male Children (years)	1.89	1.0	.1-3.8
Age of Female Children (years)	1.63	.85	.1-3.0
Blishen Index Rating[1] of Fathers	48.51	15.95	28.12-76.01
Income Range[3] of Fathers (N = 75)	3.88	1.25	1-6

[1]For an explanation of this rating system, see Blishen (1967).

[2]Twenty-seven mothers were employed full-time and 11 part-time.

[3]Parents had the option of not supplying this information. Parents were asked their income range rather than their specific income. The income ranges were as follows:

1 = Less than $3000
2 = $3000 - 5999
3 = $6000 - 9999
4 = $10000 - $14999
5 = $15000 - $18999
6 = Over $19000

Procedures

All families whose names were drawn were sent a letter which explained how their names had been obtained and briefly described the study. The letter also informed them that they would soon be contacted and requested to take part in the study (see Appendix A for a copy of this letter).

An attempt was made to contact each family by telephone within five to seven days after the letter was sent. If contact was made, the study once again was briefly outlined and any parental questions were answered. If a mother and father consented to take part in the study at this time, they were each sent identical copies of the CDQ, one labelled "Mother's copy," the other "Father's Copy." About one week after these were mailed, the family was once again contacted and an appointment was made to collect the completed questionnaires. On this second telephone contact, any additional questions which the parents had were answered and parents were asked to be sure that they had completed the full questionnaire. When the questionnaires were collected, a brief printed description of the study was given the parents and the study was discussed with them. No parent was told before the collection of the questionnaires that the study was focussed on any aspect of sex-differences.

Any family that could not be reached by telephone, or did not have a telephone, was sent a postcard stating that it had not been possible to contact them and requesting them, if they were willing to take part in the study, to contact the author at either the phone numbers or address given on the card.

Analyses

To answer the research questions asked in this study, parent ratings obtained on the CDQ were used. The CDQ was designed to measure parental perceptions of three sub-categories or aspects of children. An independent score for each aspect was calculated. Each score was the summed total of the ratings on those specific scales which represented a given aspect. Each aspect score represented a dependent variable which was considered discrete and hence was individually analyzed.

The design used in the study was a 2x2x5 factorial with repeated measures on the last two variables (Winer, 1962). The variables represented the sex of the parent raters (2), the sex of the children rated (2), and the ages of the children (5). The specific questions answered by each statistical measure can be found in Table 7. For descriptive purposes, t-tests between specific scale ratings for male and female children at each age were calculated.

A significant level of $p = .05$ was used when considering the significance of differences for both the analysis of variance and t-test statistics (Winer, 1962; Ferguson, 1966). *A posteriori* Scheffe tests were completed to assess the significance of specific cell mean differences. Due to the rigorous nature of the Scheffe test, a difference at the $p = .1$ level was considered significant (Winer, 1962; Ferguson, 1966).

All computations performed for this study were done on an IBM 360-67 computer system located at the University of Alberta. XDER programs ANOV 10, ANOV 40, DEST 02, DEST 07, and FACT 01 were used in completing the analyses.

Table 7

Statistical Measures Used to Answer Specific Research Questions

Research Question	Statistical Measure[1]
1. Do parents perceive male and female children, of three years of age and under, differently?	B main Effect
2. Do parents' perceptions of children depend on both the age and the sex of the child?	B x C Interaction Effect
3. Do opposite-sexed parents perceive children differently?	A main Effect
4. Do male and female parents perceive male and female children differently?	A x B Interaction Effect
5. Do opposite-sexed parents perceive children differently at different ages	A x C Interaction Effect
6. Do parents see children differently at different ages?	C main Effect
7. Do opposite-sexed parents perceive male and female children, of different ages, differently?	A x B x C Interaction Effect

[1]All statistical measures are derived from a three-way analysis of variance with two repeated measures (Winer, 1962).

CHAPTER VI

RESULTS

In attempting to gain information useful in answering the specific research questions posed in this study, the CDQ was used. The three scores obtained from this instrument were individually analyzed and in effect supplied information on three aspects of SRD. Three separate three-way analyses of variance, with two repeated measures, were completed. Both sexes of parents (variable A) were analyzed relative to both sexes of children (variable B) at five different ages (variable C). The measures on the latter two variables were repeated as a given parent-rater rated both sexed children at all of the age levels.

Each score derived from the CDQ represented one of the three categories of child description on which the questionnaire was originally based. Tables 8, 9, and 10 present the results of these analyses for aspects one, two, and three, respectively. Cell means on which these various analyses are based can be found in Appendix C.

The results of the various analyses will be presented relative to the specific research questions which they were seeking to answer.

Question 1. Do parents perceive male and female children, of three years of age and under, differently?

Parents did perceive male and female children of three years of age and younger as being significantly different in terms of all three of the aspects measured by the CDQ. Parents rated male and female children differently in terms of aspect one, dynamism ($F=15.5089$, $p<0.0001$);

TABLE 8

Analysis of Variance Results for Aspect One, Dynamism, Based on Parent's Sex (A), Child's Sex (B), and Child's Age (C)

Source	S.S.	m.s.	d.f.	F	p
Between					
A (Parent's Sex)	470.163	470.163	1	5.0600	0.0257[1]
Error	16446.329	92.917	177		
Within					
B (Child's Sex)	558.659	558.659	1	15.5089	0.0001
A x B	0.485	0.485	1	0.0135	0.9078
Error	6375.856	36.022	177		
C (Child's Age)	40060.836	10015.209	4	355.1547	0.0000
A x C	113.471	28.368	4	1.0060	0.4036
Error	19965.293	28.200	708		
B x C	173.006	43.251	4	4.3240	0.0018
A x B x C	187.209	46.802	4	4.6790	0.001
Error	7081.786	10.003	708		

[1]All significance levels below p=.05 are underlined.

TABLE 9

Analysis of Variance Results for Aspect Two, Disposition, Based on Parent's Sex (A), Child's Sex (B), and Child's Age (C)

Source	S.S.	m.s.	d.f.	F	p
Between					
A (Parent's Sex)	26.255	26.255	1	0.2264	0.6348
Error	20524.466	115.957	177		
Within					
B (Child's Sex)	26366.983	26366.983	1	268.9715	0.0000[1]
A x B	76.496	76.496	1	0.7803	0.3782
Error	17351.120	98.029	177		
C (Child's Age)	16021.366	4005.342	4	238.5903	0.0000
A x C	156.461	39.115	4	2.3300	0.0546
Error	11885.572	16.788	708		
B x C	2075.592	518.898	4	43.3841	0.0000
A x B x C	55.726	13.932	4	1.1648	0.3251
Error	8468.082	11.961	708		

[1]All significance levels below p=.05 are underlined.

TABLE 10

Analysis of Variance Results for Aspect Three, Vulnerability, Based on Parent's Sex (A), Child's Sex (B), and Child's Age (C)

Source	S.S.	m.s.	d.f.	F	p
Between					
A (Parent's Sex)	36.326	36.326	1	0.2983	0.5856
Error	21551.302	121.759	177		
Within					
B (Child's Sex)	6867.059	6867.059	1	136.6670	0.0000[1]
A x B	1.482	1.482	1	0.0295	0.8638
Error	8893.658	50.247	177		
C (Child's Age)	21502.075	5375.519	4	246.0318	0.0000
A x C	95.920	23.980	4	1.0975	0.3567
Error	15469.005	21.849	708		
B x C	1274.231	318.558	4	32.1534	0.0000
A x B x C	67.094	16.774	4	1.6930	0.1497
Error	7014.474	9.907	708		

[1] All significance levels below p=.05 are underlined.

aspect two, manifest personality ($F = 268.9715$, $p < 0.0001$); and aspect three, vulnerability ($F = 136.6670$, $p < 0.0001$).

Question 2. Do parents' perceptions of children depend on both the age and the sex of the child?

A significant interaction effect between the age and the sex of a child was found on all three aspects studied. Parents perceived males and females of different ages differently in terms of dynamism ($F = 4.3240$, $p < 0.002$), disposition ($F = 43.3841$, $p < 0.0001$), and vulnerability ($F = 32.1534$, $p < 0.0001$). These results suggest that both the age and the sex of children are significant factors in parental perception of children.

Results of a posteriori Scheffe tests ($p = .1$) between cell means for aspect one (see Table 11), aspect two (see Table 12), and aspect three (see Table 13) suggest that parents clearly discriminate between all ages of male children. In terms of aspect three, a similar result was found for female children. On aspect one, parents discriminated between all ages of female children except twenty-one-month- and three-year-olds; and, similarly, on aspect two, parents discriminated between all ages except between the one-year, twenty-one-month, and three-year levels.

On an age-by-age basis, parents did not perceive male and female children as being significantly different until three years in terms of aspect one. When a similar comparison is made of aspect two, it was found that parents saw opposite-sexed children as different at all ages. Males and females were seen as significantly different, in terms of aspect three, at all age levels except the newborn.

TABLE 11

Summary of Results of Scheffe Tests for Aspect One, Child's Sex (B) by Child's Age (C) Interaction[1]

	B_1					B_2				
	C_1	C_2	C_3	C_4	C_5	C_1	C_2	C_3	C_4	C_5
B_1 (Male child)										
C_1 (newborn)	-	*[2]	*	*	*	-	*	*	*	*
C_2 (six months)		-	*	*	*	*	-	*	*	*
C_3 (one year)			-	*	*	*	*	-	-	-
C_4 (twenty-one months)				-	*	*	*	*	-	-
C_5 (three years)					-	*	*	*	*	*
B_2 (Female child)										
C_1 (newborn)						-	*	*	*	*
C_2 (six months)							-	*	*	*
C_3 (one year)								-	*	*
C_4 (twenty-one months)									-	-
C_5 (three years)										-

[1]All significant results below the diagonal are omitted.

[2]An asterisk (*) indicates a significant difference in cell means at or below the p=.1 level.

TABLE

Summary of Scheffe Test Results for Aspect Two, Child's Sex (B) by Child's Age (C) Interaction Effect[1]

	B_1					B_2				
	C_1	C_2	C_3	C_4	C_5	C_1	C_2	C_3	C_4	C_5
B_1 (Male child)										
C_1 (newborn)		*[2]	*	*	*	*	*	-	-	-
C_2 (six months)			*	*	*	*	*	*	*	*
C_3 (one year)				*	*	*	*	*	*	*
C_4 (twenty-one months)					*	*	*	*	*	*
C_5 (three years)						*	*	*	*	*
B_2 (Female child)										
C_1 (newborn)						-	*	*	*	*
C_2 (six months)							-	*	*	*
C_3 (one year)								-	-	-
C_4 (twenty-one months)									-	-
C_5 (three years)										

[1]All significant results below the diagonal are omitted.

[2]An asterisk (*) indicates a significant difference between cell means at or below the p=.1 level.

TABLE 13

Summary of Scheffe Test Results for Aspect Three, Child's Sex (B) by Child's Age (C) Interaction Effect[1]

	B_1					B_2				
	C_1	C_2	C_3	C_4	C_5	C_1	C_2	C_3	C_4	C_5
B_1 (Male child)										
C_1 (newborn)			*[2]	*	*	-	-	*	*	*
C_2 (six months)				*	*	*	*	-	-	*
C_3 (one year)					*	*	*	*	*	-
C_4 (twenty-one months)						*	*	*	*	*
C_5 (three years)										
B_2 (Female child)										
C_1 (newborn)								*	*	*
C_2 (six months)									*	*
C_3 (one year)										*
C_4 (twenty-one months)										
C_5 (three years)										

[1]All significant results below the diagonal are omitted.

[2]An asterisk (*) indicates a significant difference between cell means at or below the p=.1 level.

On aspect two, female children from one to three years were not perceived as significantly different from newborn males. Similarly, on aspect one, one-year-old males were not seen as being significantly different from one- to three-year-old females.

Figures 1, 2, and 3 graphically present mean parental ratings of males and females at each age level studied for aspects one, two, and three, respectively.

Question 3. Do opposite-sexed parents perceive children differently?

Male and female parents were found to perceive children as being significantly different only in terms of aspect one, dynamism ($F = 5.0600$, $p < .03$). A similar result was not found on aspects two and three.

Question 4. Do male and female parents perceive male and female children differently?

No significant interaction effects were found on any of the three aspects studied that would suggest that opposite-sexed parents perceive male and female children differently.

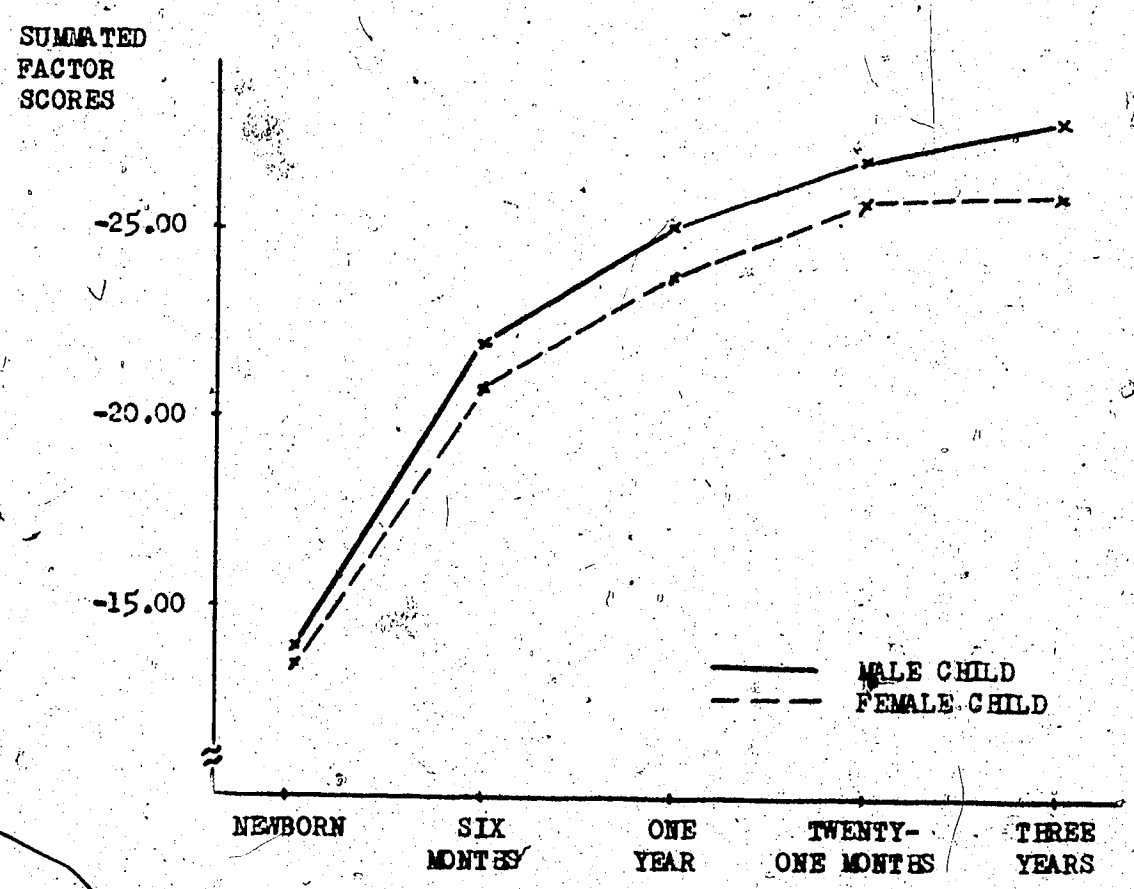
Question 5. Do opposite-sexed parents perceive children differently at different ages?

There were no indications of opposite-sexed parents differentially perceiving children at different ages on any of the three aspects considered.

Question 6. Do parents perceive children differently at different ages?

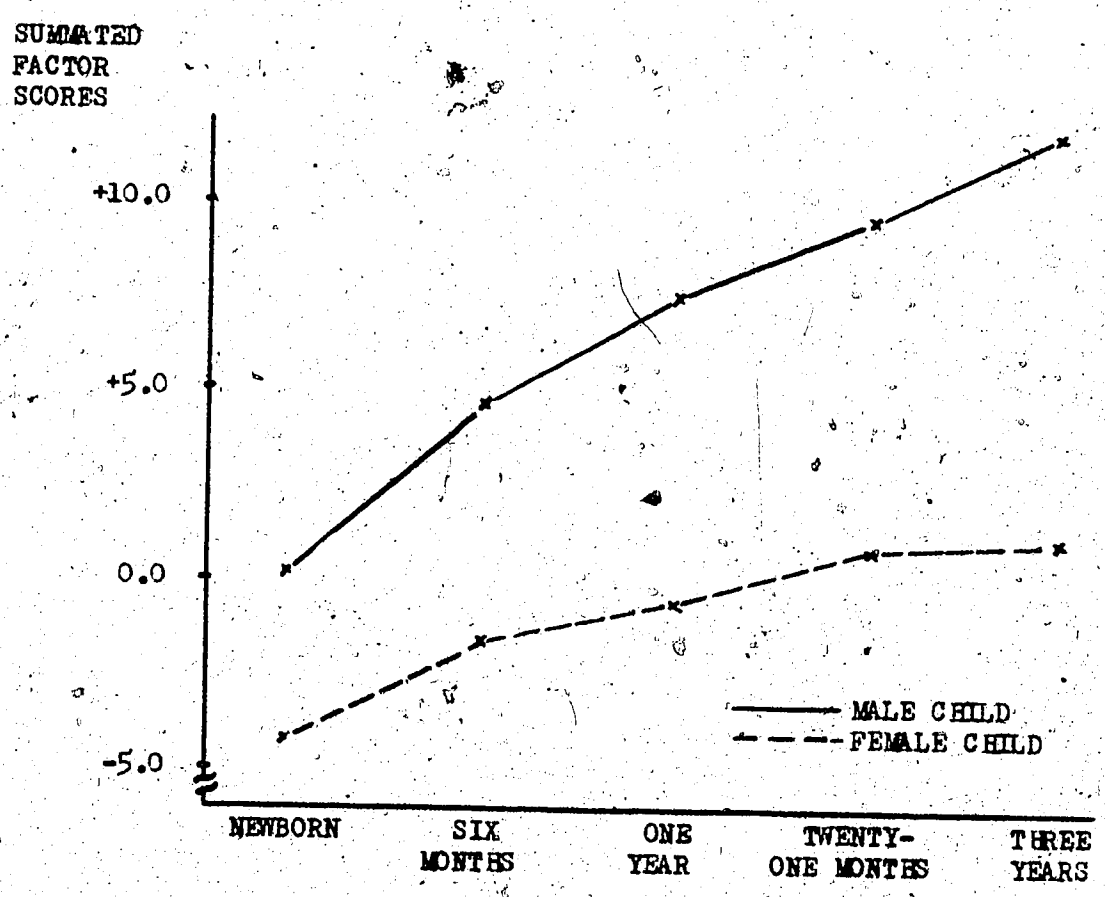
Significant age main effects were found on all three aspects studied. Parents perceived male and female children differently as a function of age in terms of dynamism ($F = 355.1547$, $p < 0.0001$),

FIGURE 1



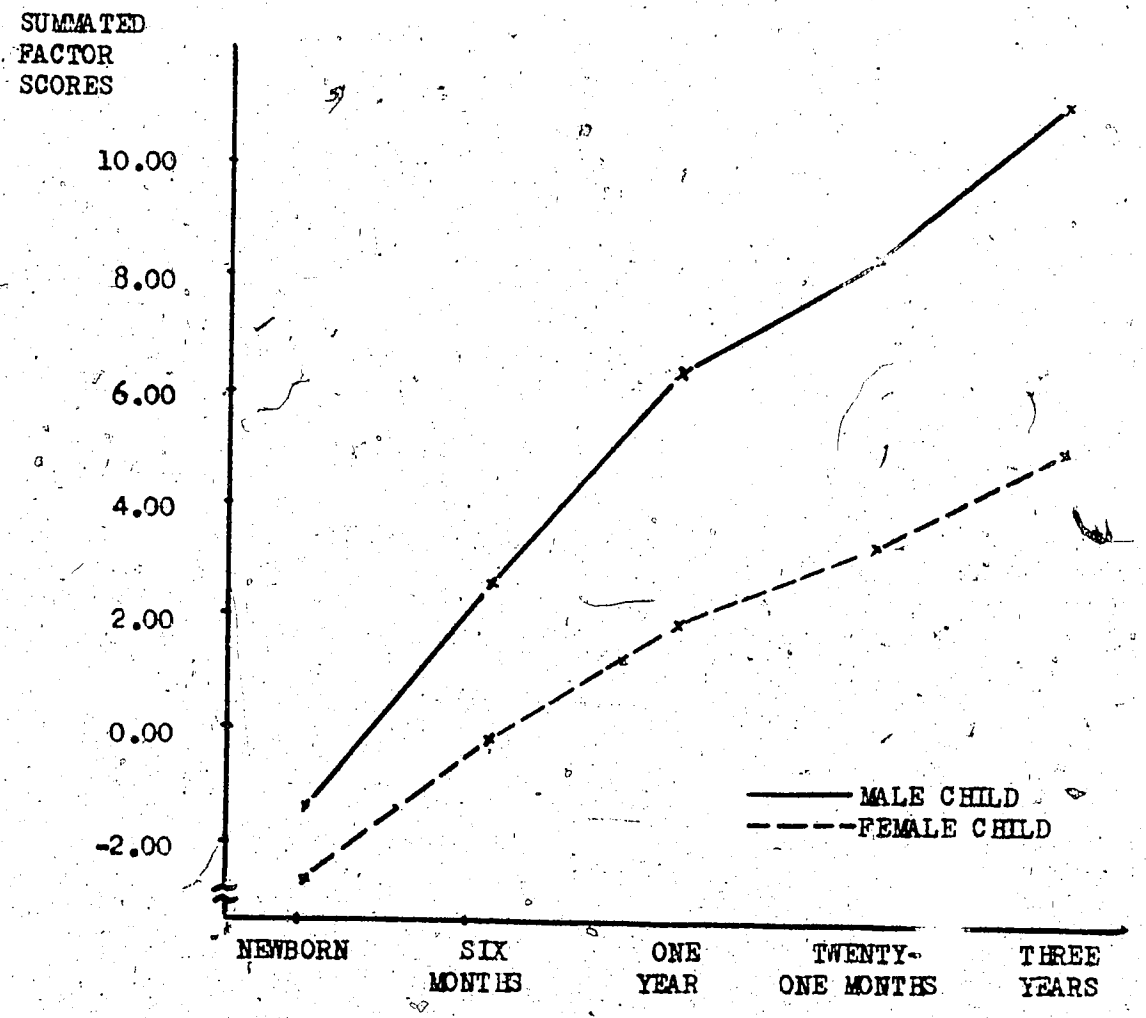
MEAN PARENTAL RATINGS OF MALE AND FEMALE CHILDREN AT FIVE AGES ON ASPECT ONE, DYNAMISM. (CRITICAL DIFFERENCE (SCHEFFE, p=.1) =1.40.)

FIGURE 2



MEAN PARENTAL RATINGS OF MALE AND FEMALE CHILDREN AT FIVE AGES ON ASPECT TWO, DISPOSITION. (CRITICAL DIFFERENCE (SCHEFFE, p=.1) =1.53)

FIGURE 3



MEAN PARENTAL RATINGS FOR MALE AND FEMALE CHILDREN AT FIVE AGES ON ASPECT THREE, VULNERABILITY. (CRITICAL DIFFERENCE (SCHEFFE, p=.1 1.39.)

disposition ($F = 238.5903$, $p < .0001$), and vulnerability ($F = 246.0318$, $p < 0.0001$).

A posteriori Scheffe tests between cell means revealed a very similar pattern for all three aspects studied (see Tables 14, 15, and 16). Parents perceived newborns and six-month-olds as significantly different from all other age groups. One-year-olds and three-year-olds were also seen as significantly different on all three aspects. In terms of three, vulnerability, parents saw a significant difference between twenty-one-month- and three-year-old children. In all cases, one-year-olds and twenty-one-month-olds were not perceived as being significantly different.

Graphic presentation of cell means for aspects one, two, and three, respectively, are found in Figures 4, 5, and 6.

Question 7. Do opposite-sexed parents perceive male and female children of different ages differently?

A significant interaction effect was found between parents' sex, child's sex, and child's age on aspect one, dynamism ($F = 4.3240$, $p < 0.002$). This suggests that opposite-sexed parents do perceive male and female children of different ages differently.

Scheffe tests revealed that significant differences were found between 147 of a possible 190 cells (see Table 17). Graphic presentation of male and female parents' ratings of male and female children at each age level can be found in Figure 7.

When male and female parents' ratings are considered on an age-by-age basis, it was found that no significant differences were found in parental ratings of same- and opposite-sexed children at the newborn level. At the six-month level, it was found that fathers perceived no significant difference between male and female children but that mothers

TABLE 14

Summary of Scheffe Test Results for Aspect One, Child's Age (C), Main Effect[1]

	C_1	C_2	C_3	C_4	C_5
C_1 (newborn)	-	*[2]	*	*	*
C_2 (six months)		-	*	*	*
C_3 (one year)			-	-	*
C_4 (twenty-one months)				-	-
C_5 (three years)					-

[1]All significant results below the diagonal are omitted.

[2]An asterisk (*) indicates a significant difference in cell means at or below the p=.1 level.

TABLE 15

Summary of Scheffe Test Results for Aspect Two, Child's Age (C), Main Effect[1]

	C_1	C_2	C_3	C_4	C_5
C_1 (newborn)		*[2]	*	*	*
C_2 (six months)			*	*	*
C_3 (one year)				-	*
C_4 (twenty-one months)					-
C_5 (three years)					

[1]All significant results below the diagonal are omitted.

[2]An asterisk (*) indicates a significant difference between cell means at or below the p=.1 level.

TABLE 16

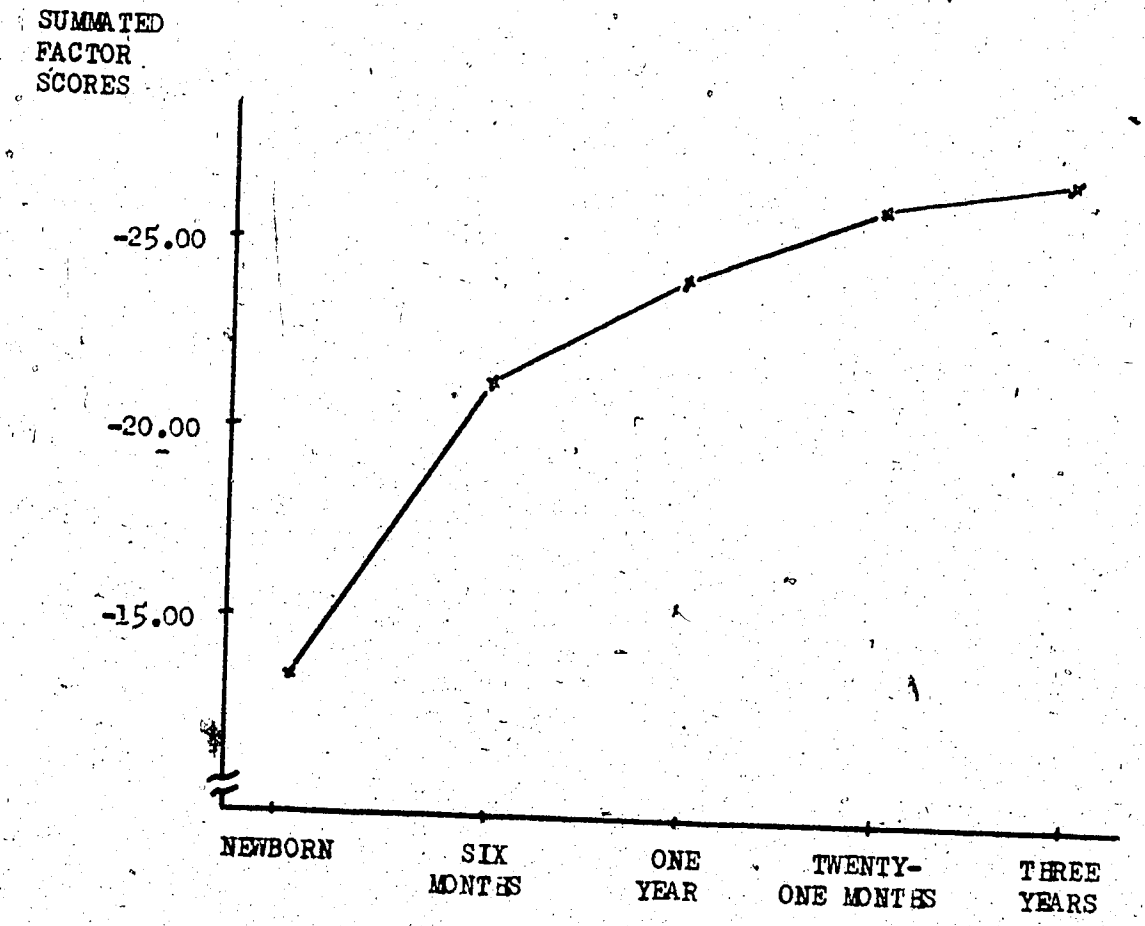
Summary of Scheffe Test Results for Aspect Three, Child's Age (C), Main Effect[1]

	C_1	C_2	C_3	C_4	C_5
C_1 (newborn)		*[2]	*	*	*
C_2 (six months)			*	*	*
C_3 (one year)				-	*
C_4 (twenty-one months)					*
C_5 (three years)					

[1]All significant results below the diagonal are omitted.

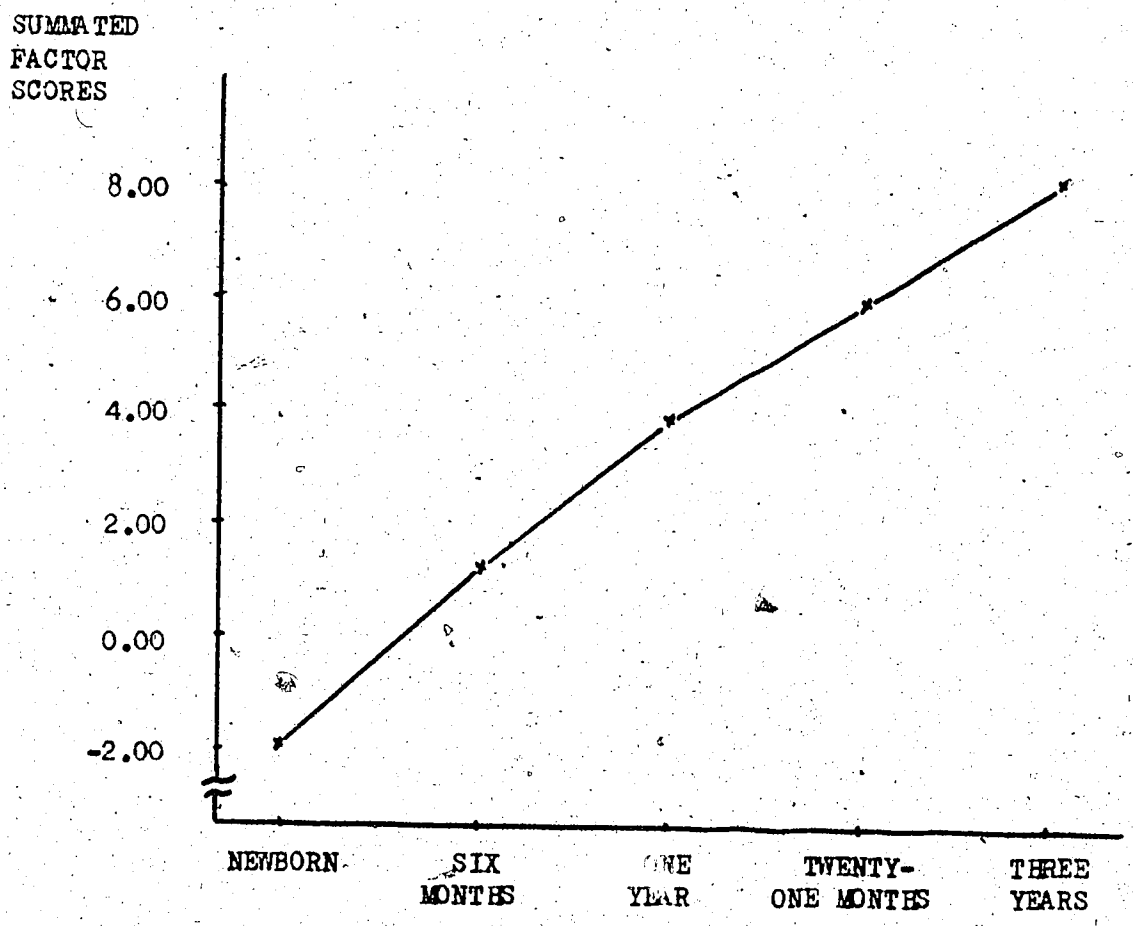
[2]An asterisk (*) indicates a significant difference between cell means at or below the p=.1 level.

FIGURE 4



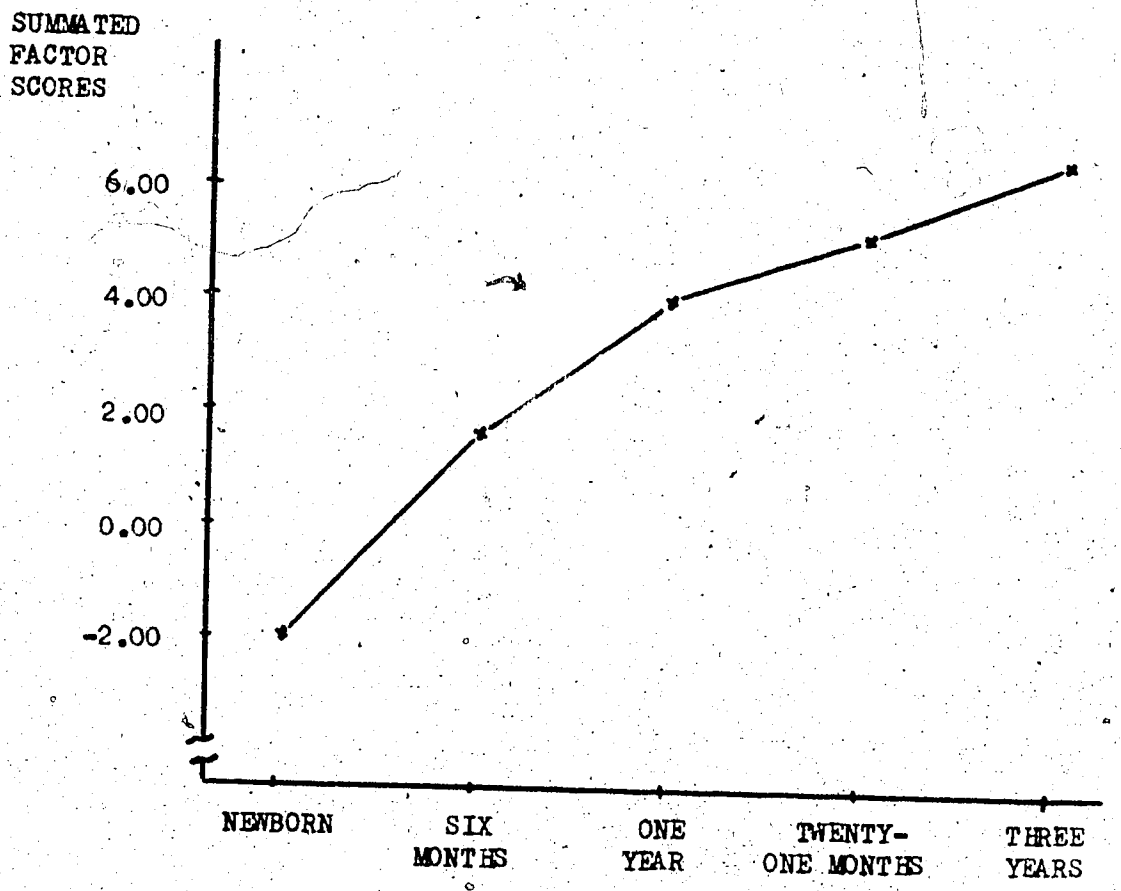
MEAN PARENTAL RATINGS OF CHILDREN AT FIVE AGES ON ASPECT ONE, DYNAMISM. CRITICAL DIFFERENCE (SCHEFFE, p=.1) =2.35.)

FIGURE 5



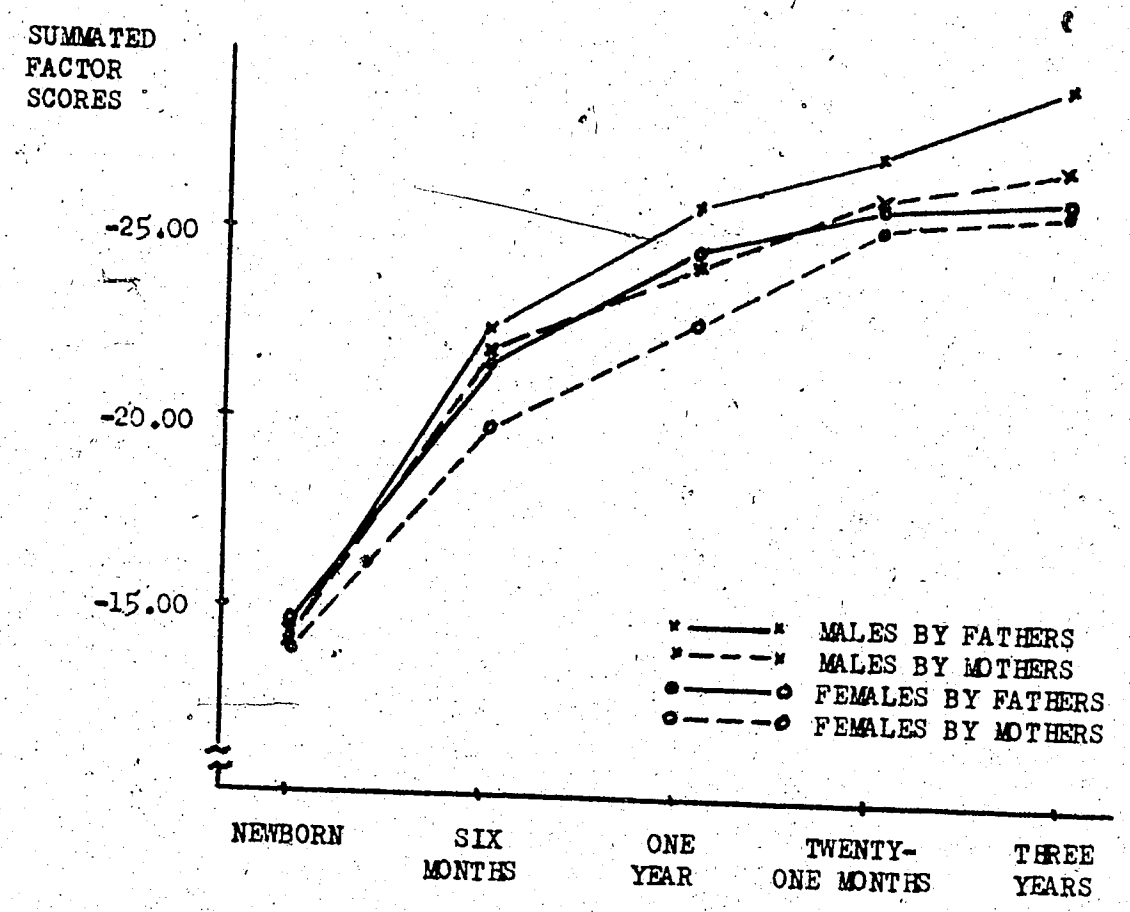
MEAN PARENTAL RATINGS OF CHILDREN AT FIVE AGES ON ASPECT THREE, VULNERABILITY. CRITICAL DIFFERENCE (SCHEFFE, p=.1) =2.07.

FIGURE 6



MEAN, PARENTAL RATINGS OF CHILDREN AT FIVE AGES ON TWO, DISPOSITION. (CRITICAL DIFFERENCE (SCHEFFE, p=.1) =1.81.

FIGURE 7



MEAN RATINGS BY MOTHERS AND FATHERS OF MALE AND FEMALE CHILDREN AT FIVE DIFFERENT AGES ON ASPECT ONE, DYNAMISM. CRITICAL DIFFERENCE (SCHEFFE, p=.1) =1.40.

saw males and females as significantly different. Mothers perceived male children in a manner similar to the way the father perceived both the males and females but perceived female children as being significantly different from this group.

At the one-year level, a greater amount of spread between parental ratings can be noted. At this age, fathers perceived no significant difference between opposite-sexed children. A similar result was found for mothers. When opposite-sexed parents' ratings of male children were considered, a significant difference was noted. A similar significant difference was found between opposite-sexed parents' ratings of female children.

At the twenty-one-month level, the pattern of ratings once again changed. Mothers' ratings of male and female children and fathers' ratings of female children were clustered and reflected no significant differences. Once again, no significant difference was found between fathers' ratings of male and female children. Mothers similarly did not rate males and females differently. Mothers' ratings of females and fathers' ratings of males were found to be significantly different, however.

At the three-year level, as at the twenty-one-month level, mothers' ratings of male and female children and fathers' ratings of female children were clustered and reflected no significant differences. Fathers' ratings of male children (which had also changed significantly from the previous age level) were significantly different from both their ratings of female children and from maternal ratings of male and female children.

On studying Figure 7, it can be noted that paternal ratings of male children at all ages, except newborns, are considerably and

and significantly lower than maternal ratings of female children, while maternal ratings of male and paternal ratings of female children tend to remain quite similar.

It should be pointed out that several additional significant differences between maternal and paternal ratings of male and female children at the different age levels were also found. These results can be found in Table 17 and Figure 7 but will not be restated in this section.

Mean parental ratings for male and female children on each of the 20 scales used in the questionnaire are presented for each age level, respectively, in Tables 18, 19, 20, 21, and 22. Significant differences between the mean ratings for male and female children are noted. It was found that parents rated newborn males and females in significantly different ways on six of the 20 scales. This number increased to ten scales at the six-month level, twelve scales at the one-year and twenty-one-month levels, and fifteen scales at the three-year level.

TABLE 12

SUMMARY OF RESULTS OF SCHEFFE TESTS FOR ASPECT TWO, PARENT'S SEX (A) x CHILD'S SEX (B) x CHILD'S AGE (C) INTERACTION.[1]

		A_1										A_2									
		B_1					B_2					B_1					B_2				
		C_1	C_2	C_3	C_4	C_5	C_1	C_2	C_3	C_4	C_5	C_1	C_2	C_3	C_4	C_5	C_1	C_2	C_3	C_4	C_5
A_1 B_1	C_1	*	*	*	*			*	*	*	*		*	*	*	*			*	*	*
	C_2		*	*	*		*		*	*	*	*		*	*	*	*	*		*	*
	C_3				*		*	*				*	*	*			*	*	*		
	C_4				*		*	*	*			*	*	*			*	*	*	*	
	C_5						*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
A_1 B_2	C_1							*	*	*	*		*	*	*	*			*	*	*
	C_2								*	*	*	*		*	*	*	*	*		*	*
	C_3									*		*	*		*	*	*	*	*	*	*
	C_4											*	*	*			*	*	*		
	C_5											*	*	*			*	*	*		
A_2 B_1	C_1												*	*	*	*		*	*	*	*
	C_2													*	*	*	*	*		*	*
	C_3														*	*	*	*			*
	C_4																*	*	*		
	C_5																*	*	*	*	
A_2 B_2	C_1																	*	*	*	*
	C_2																		*	*	*
	C_3																			*	*
	C_4																				
	C_5																				

A_1 = MALE PARENT
A_2 = FEMALE PARENT
B_1 = MALE CHILD
B_2 = FEMALE CHILD
C_1 = NEWBORN
C_2 = SIX MONTHS
C_3 = ONE YEAR
C_4 = TWENTY-ONE MONTHS
C_5 = THREE YEARS

1. ALL SIGNIFICANT RELATIONSHIPS BELOW THE DIAGONAL ARE OMITTED

2. ASTERISKS (*) INDICATE SIGNIFICANT DIFFERENCES BETWEEN CELL MEANS AT OR BELOW THE P = .1 LEVEL.

TABLE 18

Means and Standard Deviations of Parental Ratings of Newborn Male and Female Children on Individual Scales

	Mean Male	Mean Female	S.D. Male	S.D. Female	T
Not responsive--responsive	4.02	3.97	1.85	1.77	0.292
Alert--not alert	3.55	3.52	1.79	1.78	0.177
Cries easily--never cries	3.13	3.09	1.59	1.58	0.233
Sharp--dull	3.70	3.53	1.53	1.51	1.043
Hard--soft	5.07	5.55	1.64	1.63	-2.813*
Dependent--independent	1.92	1.94	1.60	1.61	-0.164
Impulsive--not impulsive	4.07	4.02	1.99	1.74	0.283
Not confident--confident	3.47	3.44	1.68	1.65	0.191
Needs attention--does not need attention	1.80	1.70	1.27	1.15	0.829
Passive--active	4.04	3.82	2.00	1.92	1.079
Dislikes being held--likes being held	6.06	6.12	1.44	1.38	-0.375
Feminine--masculine	4.73	2.79	1.32	1.30	14.005*
Sensitive to pain--not sensitive to pain	2.78	2.41	1.70	1.42	2.192*
Not delicate--delicate	4.88	5.65	1.86	1.35	-4.526*
Affectionate--not affectionate	3.51	3.32	1.73	1.73	1.039
Strong-willed--not strong-willed	3.33	3.57	1.65	1.59	-1.400
Smooth--rough	2.74	2.12	1.62	1.16	4.201*
Does not like watching--likes watching	4.90	4.78	1.86	1.69	0.626
Large--small	4.60	5.17	1.91	1.61	-3.023*
Easily quieted--not easily quieted	3.16	3.41	1.78	1.86	-1.279

*$p < .05$ (d.f.=356, two-tailed).

TABLE 19

Means and Standard Deviations of Parental Ratings of Six-Month-Old Male and Female Children on Individual Scales

	Mean Male	Mean Female	S.D. Male	S.D. Female	T
Not responsive--responsive	5.84	5.71	1.28	1.16	1.039
Alert--not alert	1.98	2.11	1.14	1.06	-1.056
Cries easily--never cries	3.80	3.21	1.58	1.42	3.728*
Sharp--dull	2.75	2.82	1.36	1.16	-0.502
Hard--soft	4.50	5.28	1.67	1.55	-4.595*
Dependent--independent	3.09	2.94	1.73	1.60	0.823
Impulsive--not impulsive	3.13	3.49	1.35	1.45	-2.410*
Not confident--confident	4.28	4.09	1.63	1.47	1.159
Needs attention--does not need attention	2.22	2.09	1.27	1.03	1.051
Passive--active	5.55	5.06	1.32	1.48	3.287*
Dislikes being held--likes being held	5.30	5.62	1.77	1.53	-1.854
Feminine--masculine	5.26	2.75	1.31	1.12	19.417*
Sensitive to pain--not sensitive to pain	2.89	2.45	1.57	1.23	3.000*
Not delicate--delicate	4.12	5.26	1.74	1.45	-6.705*
Affectionate--not affectionate	2.56	2.37	1.35	1.30	1.398
Strong-willed--not strong-willed	2.66	3.09	1.29	1.33	-3.111*
Smooth--rough	3.23	2.28	1.57	1.08	6.677*
Does not like watching--likes watching	5.80	5.92	1.26	1.18	-0.953
Large--small	3.88	4.74	1.68	1.45	-5.198*
Easily quieted--not easily quieted	3.30	3.39	1.61	1.54	-0.504

*$p < .05$ (d.f.=356, two-tailed).

TABLE 20

Means and Standard Deviations of Parental Ratings of One-Year-Old Male and Female Children on Individual Scales

	Mean Male	Mean Female	S.D. Male	S.D. Female	T
Not responsive-- responsive	6.16	6.07	1.12	1.05	0.780
Alert-- not alert	1.62	1.74	0.96	1.15	-1.156
Cries easily-- never cries	4.16	3.46	1.58	1.44	4.397*
Sharp-- dull	2.30	2.34	1.31	1.10	-0.350
Hard-- soft	4.01	4.91	1.67	1.56	-5.269*
Dependent-- independent	3.92	3.65	1.73	1.69	1.514
Impulsive-- not impulsive	2.60	2.90	1.24	1.41	-2.147*
Not confident-- confident	4.89	4.81	1.30	1.36	0.595
Needs attention-- does not need attention	2.80	2.56	1.44	1.35	1.632
Passive-- active	6.12	5.75	1.17	1.31	2.775*
Dislikes being held-- likes being held	4.46	5.26	1.74	1.57	-4.531*
Feminine-- masculine	5.51	2.61	1.14	1.25	22.887*
Sensitive to pain-- not sensitive to pain	3.16	2.48	1.61	1.25	4.481*
Not delicate-- delicate	3.42	4.98	1.59	1.41	-9.840*
Affectionate-- not affectionate	2.32	2.02	1.21	1.07	2.457*
Strong-willed-- not strong-willed	2.24	2.53	1.08	1.18	-2.425*
Smooth-- rough	3.75	2.63	1.68	1.18	7.321*
Does not like watching-- likes watching	5.80	5.83	1.26	1.17	-0.218
Large-- small	3.52	4.37	1.46	1.40	-5.609*
Easily quieted-- not easily quieted	3.26	3.33	1.58	1.40	-0.460

*$p < .05$ (d.f.=356, two-tailed).

TABLE 21

Means and Standard Deviations of Parental Ratings of Twenty-One-Month-Old Male and Female Children on Individual Scales

	Mean Male	Mean Female	S.D. Male	S.D. Female	T
Not responsive-- responsive	6.21	6.30	1.11	0.92	-0.885
Alert-- not alert	1.53	1.51	0.88	0.83	0.186
Cries easily-- never cries	4.30	3.55	1.52	1.46	4.726*
Sharp-- dull	2.24	2.27	1.38	1.18	-0.206
Hard-- soft	3.69	4.83	1.58	1.49	-7.015*
Dependent-- independent	4.64	4.31	1.86	1.85	1.683
Impulsive-- not impulsive	2.46	2.73	1.20	1.44	-1.913
Not confident-- confident	5.54	5.32	1.20	1.30	1.607
Needs attention-- does not need attention	3.18	2.72	1.56	1.40	2.997*
Passive-- active	6.38	5.99	1.00	1.33	3.105*
Dislikes being held-- likes being held	4.13	5.05	1.73	1.64	-5.166*
Feminine-- masculine	5.73	2.37	1.14	1.12	28.158*
Sensitive to pain-- not sensitive to pain	3.34	2.58	1.66	1.28	4.879*
Not delicate-- delicate	3.18	4.85	1.62	1.47	-10.182*
Affectionate-- not affectionate	2.31	1.88	1.17	1.00	3.695*
Strong-willed-- not strong-willed	1.96	2.34	1.07	1.23	-3.123*
Smooth-- rough	4.06	2.64	1.65	1.14	9.399*
Does not like watching-- likes watching	5.65	5.88	1.51	1.31	-1.532
Large-- small	3.35	4.07	1.43	1.42	-4.823*
Easily quieted-- not easily quieted	3.48	3.47	1.68	1.57	0.032

*$p < .05$ (d.f.=356, two-tailed)

TABLE 22

Means and Standard Deviations of Parental Ratings of Three-Year-Old Male and Female Children on Individual Scales

	Mean Male	Mean Female	S.D. Male	S.D. Female	T
Not responsive--responsive	6.39	6.22	1.07	1.28	1.299
Alert--not alert	1.43	1.46	0.95	1.00	-0.326
Cries easily--never cries	4.80	3.85	1.48	1.54	5.980*
Sharp--dull	2.15	3.26	1.45	1.43	-0.734
Hard--soft	3.26	4.74	1.54	1.49	-9.269*
Dependent--independent	5.05	4.63	1.94	1.89	2.073*
Impulsive--not impulsive	2.43	2.73	1.36	1.44	-1.996*
Not confident--confident	5.87	5.60	1.16	1.26	2.141*
Needs attention--does not need attention	3.63	3.21	1.74	1.67	2.324*
Passive--active	6.61	6.16	0.89	1.18	-4.097*
Dislikes being held--likes being held	3.51	4.66	1.83	1.60	-6.288*
Feminine--masculine	6.11	2.22	1.00	1.28	31.967*
Sensitive to pain--not sensitive to pain	3.62	2.62	1.78	1.39	5.923*
Not delicate--delicate	2.62	4.76	1.40	1.56	-13.650*
Affectionate--not affectionate	2.65	1.85	1.39	0.91	6.444*
Strong-willed--not strong-willed	1.77	2.21	1.03	1.15	-3.819*
Smooth--rough	4.53	2.80	1.76	1.32	10.533*
Does not like watching--likes watching	5.63	5.70	1.50	1.34	-0.520
Large--small	3.06	4.01	1.44	1.30	-6.547*
Easily quieted--not easily quieted	3.52	3.34	1.89	1.59	0.969

*$p < .05$ (d.f.=356, two-tailed).

CHAPTER VII

DISCUSSION AND IMPLICATIONS

This study sought to discover if SRD of children of three years of age and under was found in a random sample of urban, English-speaking, Canadian-born parents. Operationally, the study sought to discover if such parents differentially rated male and female children at five age levels ranging from newborn to five years in terms of three categories of child attributes derived in an earlier phase of the study. A number of additional questions relating to the similarity of views held by opposite-sexed parents, the effect of the child's age on the parents' perceptions, and the various interactions between these variables, were also asked. This chapter is divided into two sections, the first aimed at discussing the findings of the study carried out to answer these questions and the second aimed at presenting the implications of these findings for future theoretical and research studies.

As was previously pointed out, the study had two phases, the first being the development of an instrument potentially useful for studying SRD and the second being the actual use of this instrument with a parental sample. Much of the work on the first phase of the study has been previously discussed (see Chapter IV), hence will not be repeated. In the second section of this chapter, implications of both the work carried out while developing the CDQ as well as the findings made in the second phase of the study will be presented.

Discussion

The principal research question asked in this study, namely, do parents perceive male and female children of three years of age and under differently?, can be answered in the affirmative. The results of this study suggest that parents do differentially perceive male and female children, at least in terms of the three aspects used in this research. As was found while developing the CDQ, adults perceive children in a number of ways or in terms of a number of dimensions or factors. Analyses of the original scales on which the CDQ was based revealed that three of the most significant categories on which these perceptions were based are what has been termed the child's dynamism, his disposition and his vulnerability. These factors accounted for approximately 46 per cent of the total variance in the adults' ratings. When the concept of child was further divided into sub-categories of both age and sex, as it was in this study, it was found that parents continued to perceive children as significantly different in a large percentage of these sub-categories. It was also found that significant interactions existed between a large number of these sub-categories. Although various authors have speculated as to the onset and nature of early parental perceptions and differentiations in concepts of children (i.e., McCandless, 1967; Mussen, 1969; Bardwick, 1971; Lambert, 1971), very little work or specific information is available on these questions.

It is not particularly surprising that those aspects of children that reflect what has been termed their dynamism should be perceived in a significantly sex-differentiated manner. As was previously pointed out, the dynamism aspect can be considered as being in some respects similar

to Osgood's activity dimension (see Chapter IV, page 90). Along with reflecting activity, this factor also measures the degree to which children are considered as being responsive, alert, affectionate, confident, etc. (see Table 4). When one considers the pervasiveness of the sex-stereotypes, along these and similar dimensions, which are held by adults (Hetherington, 1970; Bardwick, 1971; Toews, 1973; L. Schmidt, 1973), it might be expected that parents would similarly perceive young children. It was not known, however, that such sex-differentiated perceptions were found in this age group.

It was found that although a quite clear distinction was made between the various age levels (except for the lack of a distinction between twenty-one-month and three-year-old females) rated on this factor, a sex-differentiated perception was not found until the three-year level. This suggests that sex-differentiated perceptions, in terms of dynamism, are not of a blanket or age-free nature, but instead are age-related, specifically not occurring until the child reaches approximately three years of age.

As was previously pointed out, children were also perceived in a sex-differentiated manner in terms of aspect two, disposition. As has been suggested, this aspect is considered to be representative of what might also be referred to as the child's personality. When one considers the complexity of this construct, particularly in terms of its personality connotations, and the degree to which personality constructs are differentiated on the basis of a person's sex, it is not surprising that a similar differentiation should be found here. Little was previously known about the degree to which differentiation might be found in terms of a construct such as disposition or personality, particularly

relative to the sex of children in this age group. It is interesting to note that this was the only aspect considered in the study which showed significant sex-differentiated perceptions at each of the five age levels studied. This might suggest that, at least in terms of parental perceptions, children's dispositions relative to their sex are significantly different at birth and remain that way throughout the first three years.

As has been previously pointed out, the discussion of this aspect makes the assumption of some commonality or alignment between disposition and other more typically used constructs of personality. This assumption may have limited validity as, while reflecting certain aspects of children which might be considered as representative of personality, this aspect also reflects a type of evaluative parental reaction to the appearance of the child.

The third sub-category to reflect sex-differentiated parental perceptions was aspect three, vulnerability. This aspect, when considered on an age-by-age basis, did not reflect sex-differentiated perceptions at the newborn level, but did reflect such differentiations at all other age levels. Once again, it is not particularly surprising that this aspect should reflect sex-differentiated parental perceptions. Various studies of sex-stereotypes and sex-roles have suggested that males and females are typically differentially perceived in terms of characteristics such as those related to strength and physical power or weakness and vulnerability (Hetherington, 1970; Bardwick, 1971). Aspect three is considered to reflect such characteristics. It is interesting to note that while male children are, on the average, slightly larger and more muscular than female children (Garn, 1958; Tanner, 1970), characteristics

which might result in their being considered less vulnerable, they are also more prone to illness, general deformities, and birth defects than females (Wright, 1956; Hamburg and Lunde, 1966), characteristics which might result in their being considered more vulnerable. While these are actually significant sex-differences, they are also quantitatively very small mean differences and ones which have little likelihood of being noticed or brought to the awareness of a parent. In spite of the complexity and possibly contradictory nature of these facts, parents clearly see males as being less dependent, less sensitive to pain, crying less, and so forth.

If one considers the significant child age by child sex interactions which were found on all three aspects (see Figures 1, 2, and 3), it can be noted that, particularly on aspects two and three, and to a similar though lesser degree on aspect one, parents increasingly differentiated between males and females as the child's age increased. On aspects one and three, no significant differences were found for newborns. This lack of sex-differentiated perceptions on aspect one continued until the three-year level but ceased on aspect three at the six-month level. Aspect two yielded significant sex-differentiated perceptions at all age levels. Although no relationship has or can be firmly established on the basis of this study, it is interesting to note the possible parallel between available information on sex-typed treatment and the findings of sex and age differentiated perceptions found in this study.

As was previously pointed out (see Chapter II, pp. 56-61), evidence of sex-differentiated treatment of children from newborn to three years of age and older has been established. Findings of

sex-differentiated treatment of newborns has so far consisted of little more than findings of color-differentiated dress and naming (McCandless, 1967). Evidence of increased sex-typed treatment, i.e., in terms of significant differences in maternal vocalization and physical contact behaviors at three months (Moss, 1967; Lewis, 1972), six months (Goldberg and Lewis, 1969), and one year (Messer and Lewis, 1972), and also in a wider range of areas at 18 to 24 months (Fagot, 1974), suggest that sex-typed parental treatment, or at least findings of sex-typed treatment, increases with the age of the child. These results would appear to parallel the findings of increasing perceptions of sex differences in children as their age increases. Obviously, no link has been clearly established between these two findings but it might be speculated that sex-differentiated perceptions play a role in determining the sex-differentiated treatment. Whether the sex-differentiated perceptions are derived from actual child behaviors or from some other alternative source has not clearly been established. As has previously been pointed out, however, parental sensitivity to actual sex differences in children is considered a lesser factor.

It is noteworthy that all three aspects reflected a sensitivity to the age of the children in all cases, with scores which showed highly similar developmental curves (see Figures 4, 5, and 6). These curves reflected clear discriminations between ages at the younger age levels, with this discrimination becoming less clear or absent between the twenty-one-month and three-year levels on aspects one and two and between the one-year and twenty-one-month levels on all three aspects. It might be suggested that this latter finding reflects the relative lack of major developmental changes in children between one-year and

twenty-one-months. A reason for a significantly different perception of twenty-one-month and three-year-old children on aspect three and not on aspects one and two cannot be readily given. It might be speculated that these relatively marked age changes in the perceptions of children are reflections of actual developmental or maturationally based changes in children. As the general growth curves (i.e., Liebert, et al., 1974) begin to reflect some degree of negative acceleration, it would appear that parents begin to make fewer age-related discriminations in their perceptions of children.

A significant difference between opposite-sexed parents' perceptions of children and a significant interaction effect between parents' sex, child's sex, and child's age were found on aspect one, dynamism. Fathers were found to perceive children as being more responsive, alert, independent, strong-willed, etc., than mothers. No clear-cut explanation of this result can be readily given. Two, albeit speculative, explanations might be offered. One is that mothers, because they typically spend more time with children in this age group, may perceive young children differently and perhaps more accurately in terms of their dynamism than fathers. An alternative and similarly speculative explanation might be offered which relates to the activity-related aspect of the dynamism aspect. Fathers, according to the male stereotype, are more activity-oriented than mothers. Because of this orientation, they may more readily emphasize or be sensitive to the dynamism aspect of young children and hence perceive them differently than mothers. It is once again emphasized that both of these alternatives are highly speculative and offered only for possible propaedeutic reasons.

No explanation can be offered as to why similar significant differences were not found between opposite-sexed parents' ratings on aspects two and three, or, inversely, were found only on aspect one.

The significant three-way interaction on aspect one also cannot be readily accountef for or explained. It is interesting to note that both mothers and fathers tended to perceive opposite-sexed children as not being significantly different, yet tended in their ratings of same-sexed children to differ quite markedly. It is also interesting to note that paternal ratings of females, although significantly different from maternal ratings of females at the second and third age levels studied, become quite similar at the twenty-one-month and three-year levels. Maternal and paternal ratings of males show no similar trend and in fact appear to become increasingly differentiated as the age levels increase (see Figure 7). As was previously pointed out, no explanation for these complex and apparently different patterns can be offered.

Before generalizing too broadly from this data, it should be pointed out that the degree to which the sample used in this study can be considered as random cannot be determined. Although a random sample was originally drawn, only 57.8 per cent of the persons qualifying for the study in fact took part. While this percentage of responses is considerably above what might normally have been expected (Travers, 1969), the differences between those parents who took part and those who did not are unknown. Because of this less than complete sample, the reader is cautioned against overgeneralizing from these findings.

A second cautionary note that should be made before one generalizes too broadly from this data relates to the uniqueness of the three aspects of the parental conceptions of children being studied. When the original data on which the CDQ was based was factor-analyzed, three orthogonal factors were found. Selected scales loading on these factors formed the basis of the three aspects of child perception which the CDQ is purported to measure. Because unit rather than weighted values were given these scales when computing aspect scales, and because the sample used in the second phase of the study was different ffom that used in the first phase, the uniqueness or orthogonality of these scales may no longer exist. To assess this possibility, Pearson product-moment correlations between these individual factor scores at each age level for each sex (see Table 23) and also collapsed over ages and sex (see Table 24) were calculated. While all these correlations are significant ($p < .05$), this, in part, reflects the size of the group on which the analyses were based ($N = 179$). The level of the correlations, particularly in the case of aspects two and three, would suggest that for this sample these aspects overlap to some degree and hence may not be considered as totally discrete. The relatively low correlations between aspects one and two and one and three would suggest that these aspects are relatively discrete.

It is not in fact surprising that some relationship was found between the aspect scores, particularly aspects two and three. One might reasonably expect some overlap between parental perceptions of a child's disposition and his vulnerability. Similarly, the overlap between perceived disposition and dynamism is not, conceptually at least, entirely unexpected.

TABLE 23

Pearson Product-Moment Correlations between Aspects One, Two, and Three, for Both-Sexed Children at Each Age Level

	Aspects 1, 2	Aspects 2, 3	Aspects 1, 3
MALES			
Newborn	-.60	.48	-.38
Six months	-.47	.46	-.38
One year	-.38	.47	-.29
Twenty-one-months	-.25	.45	-.31
Three years	-.30	.47	-.34
FEMALES			
Newborn	-.46	.44	-.30
Six months	-.26	.44	-.27
One year	-.29	.52	-.29
Twenty-one-months	-.21	.47	-.20
Three years	-.21	.56	-.31
MEAN	-.34	.48	-.31

TABLE 24

Pearson Product-Moment Correlations between Aspects One, Two, and Three, Summated over Child's Sex and Child's Age

	Aspect 1	Aspect 2	Aspect 3
1	.00	-.39	-.23
2	-.39	.00	.46
3	-.23	.46	.00

Implications

It has been previously pointed out that pervasive SRD or sex-differentiated constructs of males and females can be readily found in our society (Lambert, 1971). This study has sought to discover if such categorizations are equally applicable to young children. In spite of the fact that the instrument used in this study was of a relatively gross or unspecific nature (i.e., a printed word phrase being used to represent a concept as complex as that of a male or female child at a specific age), considerable support for the notion of SRD in this age group was found. It was also found that those aspects of parental perceptions of children which were studied were also further differentiated on an age basis. The implications of these findings are primarily of a theoretical nature but have potentially a more direct childrearing and educational significance.

The role of such differentiations in adult, or in this case specifically parental, conceptions of children has not been thoroughly explored or stated in the literature. It has typically been held that parental treatment of children is a function of or reflects the interaction between the particular attitudes held by the parent, as well as certain individual differences and state characteristics of both the child and the parent. Situational variables are also frequently assumed to play a role. The degree to which such attitudes are reflected in behavior has been a topic of some discussion in the developmental literature, particularly that relating to the development of sex differences (Emmerich and Smoller, 1964; Rothbart and Maccoby, 1966), but, as Tulkin and Cohler (1973) point out, ". . . the relationship between childrearing

attitudes and parental behavior remains one of the unresolved issues in the study of socialization" (p. 95).

It might be suggested that a possible link between parental attitudes and child treatment might be found in the particular concepts of children that are held by the parents. What is being proposed is a conceptual differentiation between an attitude--for example, a set of sex-typed expectancies--and the conception of a child that is held by the parent. What is being suggested is that attitudes can be considered as being applicable to certain categories of perceptions or conceptualizations of people; hence, the attitude and conceptualization might both be considered as being independent of each other and free to vary. In terms of this particular study, it might be suggested that when a parent treats a child in a sex-differentiated manner that treatment is a reflection of both the parent's perception of the child as being male or female (as contrasted to, for example, an infant undifferentiated in terms of sex) as well as the sex-differentiated attitudes or expectancies which the parent has.[1] The age of the child can also be considered as being reflected in both the expectancy pattern and the categories to which the expectancies apply.

The position being proposed could be viewed as an extension of the position taken by Rosenthal and his colleagues (Rosenthal and Jacobsen, 1968; Rosenthal and Rosnow, 1969). Their position states that

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[1] The specific parental behavior could also reflect several other factors such as the particular state of the parent and/or child, situational variables, etc. These additional variables, while their influence is acknowledged, are not the focus of this particular formulation.

the particular expectations a person has about another influence the treatment or experiences offered by that person to the other. The position is typically discussed relative to a teacher's expectations of a child. Within this theory, a teacher's expectations of a child serve to influence the treatment of the child. The child's behavior in response to this treatment begins to reflect or conform to the expectancies held by the teacher. This position would appear to be generally compatible with much of the available information on the development of sex-specific behaviors in children, especially those sex-specific behaviors which appear to result from the experiences and treatments the child is offered by the parent. The parental expectancies, in the Rosenthal sense, can be considered as being akin to the sex-role constructs or sex stereotypes held by the parents.

While the potential applicability of the Rosenthal position is essentially accepted by the author, this position has received some criticism in the literature, both on methodological grounds (Thorndike, 1968) and on the grounds that the Rosenthal effect (Rosenthal and Jacobsen, 1968) has not been readily replicated (José and Cody, 1971). The reason for the lack of replicability could lie in the fact that both Rosenthal and José and Cody were modifying the teachers' perceptions of given children from what might be termed the teachers' normal perceptions of the child to a perception of the child which suggested that child would be likely to show increased intellectual powers or somehow 'bloom.' What is being proposed is that the Rosenthal position can be elaborated and potentially have increased explanatory and predictive power if the relationship between the adult expectancy and the adult conception of the

child is considered. It is being proposed that a given expectancy has as an integral part one or more particular categories to which the expectancy applies. By considering both the expectancy and the particular categories associated with it, increased predictability of behavior on behalf of the holder of the expectancy could occur. In the case of the Rosenthal and Jacobsen (1968) study, for example, it might be hypothesized that the teachers taking part had different sets of expectations for normals and for 'bloomers.' When the teachers' perceptions of the children were changed, alternative expectancies and hence differing behaviors occurred. In the José and Cody (1971) study, on the other hand, it might be suggested that possibly the expectancies of the teachers were not different for 'normals' and 'bloomers,' and that changing the teachers' perceptions of specific children did not call forth different expectancies and hence differential treatment did not occur.

If this proposed relationship between expectancies and perceptions is accepted, it might be suggested that similar differentiations in parental conceptions of young children, as were found in this study, could play a significant role in terms of which parental expectancies or the degree to which certain expectancies (i.e., sex-typed) are applied to children. What is basically being proposed is that depending upon the parental perception of the child, a given expectancy may either be differentially applied or possibly not applied at all. Hence, if expectations can be considered as influencing parental behavior (i.e., sex-typed treatment), then differing child perceptions (i.e., as male or female contrasted to child undifferentiated on the basis of sex) could play a significant role in the parental behavior or child treatment.

Within the Rosenthal position, an alternative and slightly different explanation of the relationship between perceptions, expectancies, and behaviors might also be considered. In this alternative explanation, it might be proposed that the parental perceptions of the child, rather than calling forth a given expectancy to varying degrees, could call forth very specific sets of expectancies. These specific expectancies could depend upon very specific categorizations or attributes of children, such as their sex and/or age, as well as possibly their size, activity level, language capability, etc.. This position proposes that the parent has a complex and highly differentiated (and possibly in many ways culturally specific) set of expectancies from which a specific set or sets are called forth depending upon the particular perceptions of the child which are held. These highly differentiated and categorically quite specific expectancies are, once again, hypothesized to influence the parental treatment of the child. This parental treatment of the child could be hypothesized to change, either when the expectancies themselves change or the perception or categorization of the child to which the expectancies are applied changes.

The relationship between parental or social conceptions of children and treatment of children is not an entirely new topic in developmental literature. It is, however, one which has been relatively little explored. Authors writing on the historical and current social conceptions of the child and childhood (i.e., Ariès, 1962; Kessen, 1965) have illustrated how, as the conceptions of children have changed, a similar change in the treatment of children has come about. Recent changes in the conceptions of the nature of children, brought about by

authors such as Freud, Watson, and Piaget, have considerably altered both the educators' and parents' treatment of children, as well as the researchers' perceptions and consequent interest in children (Liebert, et al., 1974).

Although the proposed theory was not directly tested in this research study, one aspect of this theory, namely the presence and age relatedness of SRD, was explored. As was previously pointed out, the actual mechanisms accounting for the relationship between sex-typed parental treatment and SRD are not well understood. The specific nature of the parent[al] conceptions of children at various ages and the degree to which these factors play a role in the actual development of children are also not well understood and can only be clarified through additional research studies. The relationship between the parents' conceptions of children and their experiences with children is also an area of research in which additional study is needed. The SRD construct or sex-differentiated conceptions of young children might also be profitably studied in terms of variations in these conceptions, both between and within urban, rural, and different ethnic groups, as well as different socio-economic and educational groups.

The findings of this research, in suggesting that parental perceptions of children are differentiated in terms of the child's dynamism, position, and vulnerability, and that these categories are further differentiated on an age and sex basis, may have propaedeutic value in initiating future research studies aimed at both clarifying these conceptions and finding their relationship to parental treatment and ultimately the development of children. The specific usage made of

of the semantic differential technique, the basis of the CDQ, may also have a use in other forms of particularly exploratory research aimed at finding differentiations between persons, behaviors, ages, etc..

It is recommended that prior to initiating future research, based either on the CDQ or the results of this study, that a replication study using different scales, scale selection criteria, and samples be completed. Beyond the theoretical bases previously discussed, no other validation criteria as to the nature of parental conceptions of children and the differentiation of these categories as a function of the child's sex, child's age, and parents' sex are readily available, particularly for this age group studied.

REFERENCES

Acheson, R. N.
"Maturation of the Skeleton." In Falkner, B. F. (ed.). Human Development. Philadelphia, Pennsylvania: W. B. Saunders, 1966, 465-502.

Allport, G. W. and Vernon, P. E.
"A Test for Personal Values." Journal of Abnormal and Social Psychology, 1931, 26, 231-48.

Anastasi, Anne.
Differential Psychology. New York: Macmillan and Co., 1958a.

_____.
"Heredity, Environment, and the Question 'How?'" Psychological Review, 1958b, 65, 197-208.

Ardrey, R.
African Genesis. New York: Dell, 1966.

Aries, P.
Centuries of Childhood: A Social History of Family Life. New York: Vintage Books, 1962.

Baldwin, A. L.
Theories of Child Development. New York: Wiley, 1967.

Bandura, A.
Principles of Behavior Modification. New York: Holt, Rinehart and Winston, 1969.

_____; Ross, D.; and Ross, S. A.
"Imitation of Film-mediated Aggressive Models." Journal of Abnormal and Social Psychology, 1963, 66 (1), 3-11.

_____ and Walters, R. H.
Social Learning and Personality Development. New York: Holt, Rinehart and Winston, 1963.

Bardwick, J. M.
Psychology of Women; A Study of Bio-cultural Conflicts. New York: Harper and Row, 1971.

Barry, H.; Bacon, M. K.; and Child, I. L.
"A Cross-cultural Survey of some Sex Differences in Socialization." Journal of Abnormal and Social Psychology, 1957, 55, 327-32.

Bayley, N.
"Consistency of Maternal and Child Behaviors in the Berkeley Growth Study." Vita Humana, 1964, 7, 73-95.

Beach, F. A.
Sex and Behavior. New York: Wiley, 1965.

Bell, R. A.
"A Reinterpretation of Effects in Studies in Socialization." Psychological Review, 1968, 75 (2), 81-95.

Bell, R. Q.
"Relations between Behavior Manifestations in the Human Neonate." Child Development, 1960, 31, 463-77.

_____ and Costello, W. S.
"Three Tests for Sex Differences in Tactile Sensitivity in the Newborn." Biologia Neonatorum, 1964, 335-47.

_____ and Darling, J. F.
"The Prone Head Reaction in the Human Neonate: Relation with Sex and Tactile Sensitivity." Child Development, 1965, 36 (4), 943-49.

Benjamin, H.
"Age and Sex Differences in Toy-Preferences of Young Children." Journal of Genetic Psychology, 1932, 41 (4), 417-29.

Bennett, E. M. and Cohen, L. R.
"Men and Women: Personality Patterns and Contrasts. Genetic Psychology Monograph, 1959, 59, 101-55.

Bennett, G. H.; Seashore, H. C.; and Wesman, H. G.
The D.A.T. Manual. New York: Psychological Corporation, 1959.

Bentzen, F.
"Sex Ratios in Learning and Behavior Disorders." National Elementary Principal, 1966, 46, 13-17.

Biller, H. B.
Father, Child and Sex Role. Lexington, Massachusetts: Heath Lexington, 1971.

_____ and Borstelmann, L. J.
"Masculine Development: An Integrative Review." Merrill-Palmer Quarterly, 1967, 13, 253-94.

_____ and Weiss, S. D.
"The Father-Daughter Relationship and the Personality of the Female." Journal of Genetic Psychology, 1970, 116, 79-93.

Birdwhistell, R. L.
Kinesics and Context. Philadelphia: University of Pennsylvania Press, 1970.

Blishen, B. R.
"A Socio-economic Index for Occupations in Canada." Canadian Review of Sociology and Anthropology, 1967, 4 (1), 41-53.

Boring, E. G.
"Perspective: Artifact and Control." In Rosenthal, A. and Rosnow, R. L. (eds.). Artifact in Behavioral Research. New York: Academic Press, 1969, 1-12.

Braine, M. D. S.; Heimer, C. B.; Wortes, H.; and Freedman, A. M.
"Factors Associated with Impairment of the Early Development of Prematures." Monographs for the Society for Research in Child Development, 1966, 31, 1-92.

Bronfenbrenner, V.
"Freudian Theories of Identification and their Derivatives." Child Development, 1960, 31, 22-40.

Broverman, D. M.; Klaiber, E. L.; Kobayashi, Y.; and Vogel, W.
"Roles of Activation and Inhibition in Sex Differences in Cognitive Abilities." Psychological Review, 1968, 75, 23-50.

Broverman, I. K.; Broverman, D.; Clarkson, F. E.; Rosenkrantz, P. S.; and Vogel, S.
"Sex-role Stereotyping and Clinical Judgements of Mental Health." Journal of Consulting and Clinical Psychology, 1970, 34 (1), 1-7.

Brown, D. G.
"Sex-role Preference in Young Children." Psychological Monographs, 1956, 70 (14, whole of 421).

_____.
"Masculinity-Femininity Development in Children." Journal of Consulting Psychology, 1957, 21, 197-202.

_____ and Lynn, D. B.
"Human Sexual Development: An Outline of Components and Concepts." Journal of Marriage and the Family, 1966, 28 (2), 155-62.

Butzow, J.
"The Development and Validation of a Behaviorally Defined Interest Instrument for Science." Unpublished Doctoral thesis, Rochester, New York: University of Rochester, 1968.

Carroll, J. B.
"A Review of the Measurement of Meaning." Language, 1959, 35, 58-77.

Coleman, J. C.
Abnormal Psychology and Modern Life. Chicago: Scott, Foresman and Co., 1964.

Cramer, B.
"Sex Differences in Early Childhood." Child Psychiatry and Human Development, 1971, 1 (3), 133-51.

Dalton, K.
"Menstruation and Examinations." The Lancet, 1968, 2, 1386-88.

D'Andrade, R. G.
"Sex Differences and Cultural Institutions." In Maccoby, E. E. (ed.). The Development of Sex Differences. Palo Alto, California: Stanford University Press, 1966, 173-203.

De Lucia, Lenore A.
"Toy-preference Test: A Measure of Sex-role Identification." Child Development, 1963, 34, 107-17.

Dixon, W. J. and Massey, F. M.
Introduction to Statistical Analysis. New York: McGraw-Hill 1969.

Ellis, H.
Psychology of Sex. New York: Mentor, 1933.

Emmerich, W.
"Variations in the Parental Role as a Function of the Parent's Sex and the Child's Sex and Age." Merrill-Palmer Quarterly, 1962, 8, 3-11.

_____; Goldman, K. S.; and Shore, R. E.
"Differentiation and Development of Social Norms." Journal of Personal and Social Psychology, 1971, 18 (3), 323-53.

_____ and Smoller, F.
"The Role of Patterning of Parental Norms." Sociometry, 1964, 27 (3), 382-90.

Erikson, E. H.
"Sex Differences in the Play Configurations of Preadolescents." American Journal of Orthopsychiatry, 1951, 21, 667-92.

_____.
"Inner and Outer Space: Reflections on Womanhood." In Lifton, R. J. (ed.). The Woman in America. Boston: Beacon, 1965, 1-26.

Escalona, S. K.
"Some Determinants of Individual Differences in Early Ego Development." Transactions of N. Y. Academy of Sciences, 1965, 27 (7), 802-17.

_____.
The Roots of Individuality. Chicago: Aldine, 1968.

_____.
"Basic Modes of Social Interaction: Their Emergence and Patterning during the First Two Years of Life." Merrill-Palmer Quarterly, 1973, 19, 205-32.

Fagot, B. I.
"Sex-related Stereotyping of Toddlers' Behaviors." Developmental Psychology, 1973a, 9 (3), 429.

_____.
"Sex-related Stereotyping of Toddlers' Behavior: An Extended Report." Unpublished paper, University of Oregon, 1973b.

_____.
"Sex Differences in Toddlers' Behavior and Parental Reaction." Developmental Psychology, 1974 (in press).

Ferguson, G. A.
Statistical Analysis in Psychology and Education. New York: McGraw-Hill, 1966.

Feshback, S.
"Aggression." In Mussen, P. H. (ed.). Carmichael's Manual of Child Psychology, Vol. II. New York: John Wiley and Sons, 1970, 261-359.

Fraser, A.
A History of Toys. London: Weidenfeld and Nicolson, 1966.

Freud, S.
"Some Psychological Consequences of the Anatomical Distinctions between the Sexes" (1925). Collected Papers. London: Hogarth, 1952, 5.

_____.
Three Contributions to the Theory of Sex. New York: Dutton, 1962.

_____.
The Sexual Enlightenment of Children. New York: Collier, 1963.

Friedan, Betty.
The Feminine Mystique. New York: Dell, 1963.

Gagnon, J. H.
"Sexual Deviation: Social Aspects." In Sills, D. L. (ed.). Encyclopedia of the Social Sciences. New York: Macmillan, 1968, 215-22.

_____ and Simon, W. (eds.).
Sexual Deviance. New York: Harper and Row, 1967.

Garai, J. E. and Scheinfeld, A.
"Sex Differences in Mental and Behavioral Traits." Genetic Psychology Monographs, 1968, 77, 169-299.

Garn, S. M
"Roentgenogrammetric Determinants of Body Composition." Human Biology, 1957, 29, 337-53.

_____.
"Fat, Body Size and Growth in the Newborn," Human Biology, 1958, 30, 265-80.

_____ and Clark, L. C., Jr.
"The Sex Differences in the Basal Metabolic Rate." Child Development, 1953, 24, 215-24.

Gebhard, P. H.; Gagnon, J. H.; Pomeroy, W. B.; and Christenson, C. U.
Sex Offenders: An Analysis of Types. New York: Harper and Row, 1965.

Goffman, E.
Stigma: Notes on the Management of Spoiled Identity. Englewood Cliffs, New Jersey: Prentice-Hall, 1963.

_____.
Interaction Ritual: Essays on Face-to-Face Behavior. Garden City, New York: Anchor, 1967.

Goldberg, Susan and Lewis, M.
"Play Behavior in the Year-old Infant: Early Sex Differences." Child Development, 1969, 215-24.

Gough, H. C.
Manual, California Psychological Inventory. Palo Alto: Consulting Psychologists Press, 1957.

_____.
"A Cross-cultural Analysis of the CPI Femininity Scale." Journal of Consulting Psychology, 1966, 30, 136-41.

Gray, J.
"Sex Differences in Emotional Behavior in Mammals including Man: Endocrine Bases." Acta Psychologica, 1971a, 35, 29-46.

Gray, J.
"Sex Differences in Emotional and Cognitive Behavior in Mammals, including Man: Adaptive and Neural Bases." Acta Psychologica, 1971b, 39, 89-111.

Green, R.
"Sissies and Tomboys: A Guide to Diagnosis and Management." In Wahl, C. W. (ed.). Sexual Problems: Diagnosis and Treatment in Medical Practice. New York: Free Press, 1967, 89-114.

Greenson, R. R.
"Masculinity and Femininity in our Time." In Wahl, C. W. (ed.). Sexual Problems: Diagnosis and Treatment in Medical Practice. New York: Free Press, 1967, 39-52.

Greer, G.
The Female Eunuch. London: Paladin, 1971.

Hamburg, D. D. and Lunde, D. T.
"Sex Hormones in the Development of Sex Differences in Human Behavior." In Maccoby, E. E. (ed.). The Development of Sex Differences. Palo Alto, California: Stanford University Press, 1966, 223-351.

Hampson, J. L.
"Determinants of Psychosexual Orientation." In Beach, F. A. (ed.). Sex and Behavior. London: Wiley, 1965.

Harlow, H. F.
Learning to Love. San Francisco: Albion, 1971.

Hartley, R. E.
"A Developmental View of Female Sex-role Definition and Identification." Merrill-Palmer Quarterly, 1964, 10 (1), 3-17.

Hartup, W. W. and Zook, E. A.
"Sex-role Preferences in Three- and Four-year-old Children." Journal of Consulting Psychology, 1960, 34 (5), 420-26.

Heise, D. R.
"Some Methodological Issues of Semantic Differential Research." Psychological Bulletin, 1969, 22 (6), 406-22.

———
"The Semantic Differential and Attitude Research." In Summers, G. F. (ed.). Attitude Measurement. Chicago: Rand McNally and Co., 1970, 235-53.

Herron, R. E. and Sutton-Smith, B.
Child's Play. New York: Wiley, 1971.

Hetherington, E. M.
"A Developmental Study of Sex of the Dominant Parent on Sex-Role Preference, Identification, and Imitation in Children." Journal of Personality and Social Psychology, 1965, 2 (2), 188-94.

_____.
"Sex-typing, Dependency and Aggression." In Spencer, T. D. and Kass, N. (eds.). Perspectives in Child Psychology: Research and Review. New York: McGraw-Hill, 1970, 193-231.

Johnson, M. M
"Sex-role Learning in the Nuclear Family." Child Development 34, 1963, 319-33.

José, J. and Cody, J. J.
"Teacher-pupil Interaction as it Related to Attempted Changes in Teacher Expectancy and Academic Ability and Achievement." American Educational Research Journal, 1971, 8, 39-49.

Josselyn, I. M
"Passivity." In Chess, S. and Thomas, A. (eds.). Annual Progress in Child Psychiatry and Child Development. New York: Brunner/Mazel, 1969, 468-84.

Kagan, J.
"The Concept of Identification." Psychological Review, 1958, 65 (5), 296-305.

_____.
"Acquisition and Significance of Sex Typing and Sex Role Identity." In Hoffman, N. L. and Hoffman, L. W. (eds.). Review of Child Development Research. New York: Russell Sage 1964, 137-68.

_____.
"Three Faces of Continuity in Human Development." In Goslin, D. A. (ed.). Handbook of Socialization Theory. Chicago: Rand McNally, 1969, 983-1002.

_____.
Change and Continuity in Infancy. New York: Wiley, 1971.

_____ and Lemkin, J.
"The Child's Differential Perception of Parental Attributes." Journal of Abnormal and Social Psychology, 1961, 61 (3), 440-47.

_____ and Lewis, M.
"Studies of Attention in the Human Infant." Merrill-Palmer Quarterly, 1965, 11 (2), 95-127.

_____ and Moss, H. A.
Birth to Maturity. New York: Wiley, 1962.

Kagan, J.; Moss, H. A.; and Sigel, I. E.
"Psychological Significance of Styles of Conceptualization." In Wright, J. C. and Kagan, J. (eds.). Basic Cognitive Process in Children, Monographs of the Society for Research in Child Development, 1965, 11 (2) 95-127.

Kammeyer, K.
"The Feminine Role: An Analysis [illegible]titude Consistency." Journal of Marriage and the Fami[illegible] 964, 24, 295-305.

Kerlinger, F. N.
Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, 1964.

Kessen, W.
The Child. New York: Wiley, 1965.

Kimura, D.
"Functional Asymmetry of the Brain in Dichotic Listening." Cortex, 1967, 3, 163-68.

Knop, C.
"The Dynamics of newly born Babies." Journal of Pediatrics, 1946, 29, 721-28.

Kohlberg, L.
"A Cognitive-developmental Analysis of Children's Sex-r[illegible] Concepts and Attitudes." In Maccob E. E. (ed.). The Development of Sex Differences. Palo Alto, California: Stanford University Press, 1966, 82-172.

_____.
"Stage and Sequence: The Cognitive Developmental Approach to Socialization." In Goslin, D. A. (ed.). Handbook of Socialization Theory and Research. Chicago: Rand McNally, 1969, 347-480.

Krech, D.; Crutchfield, R. S.; and Ballachey, E. L.
Individual in Society: A Textbook in Social Psychology. New York: McGraw-Hill, 1962.

Laing, R. D.
The Politics of the Family. Toronto: CBC Publications, 1968.

Lambert, R. D.
Sex-role Imagery in Children: Social Origins of the Mind. Studies of the Royal Commission on the Status of Women in Canada. Ottawa: Information Canada, No. 1, 1971.

_____.
Personal communication, November, 1973.

Lewis, M.
"Culture and Gender Roles: There's no Unisex in the Nursery." Psychology Today, 1972a, 5 (12), 54-57.

_____.
"State as an Infant-environment Interaction: An Analysis of Mother-Infant Interaction as a Functic Sex." Merrill-Palmer Quarterly, 1972, 18 (2), 95-123.

_____; Kagan, J.; and Kalafat, J.
"Patterns of Fixation in the young Infant." Paper read at the Society for Research in Child Development, Minneapolis, Minnesota, 1965.

_____; Meyers, W.; Kagan, J.; and Grossberg, R.
"Attention to Visual Patterns in Infants." Paper presented at the Symposium on Studies of Attention in Infants, American Psychological Association. Philadelphia, Pennsylvania, August, 1963.

Liebert, R. M.; Poulos, R. W.; and Strauss, G. D.
Developmental Psychology Englewood Cliffs, New Jersey: Prentice-Hall, 1974.

Lifton, R. J. (ed.).
The Women in America. Boston: Beacon, 1965.

Lillienfield, A. M. and Pasamanick, B.
"The Association of Maternal and Fetal Factors with the Development of Mental Deficiency. II. Relationship of Maternal Age, Birth Order, Previous Reproductive Loss and Degree of Mental Deficiency." American Journal of Mental Deficiency, 1956, 60, 557-69.

Lipsitt, L. P. and Levy, N.
"Electrotactical Threshold in the Human Neonate." Child Development 30, 1959, 347-54.

Lorenz, K.
On Aggression. London: Methuen, 1967.

Lynn, D. B.
"A Note on Sex Differences in the Development of Masculine and Feminine Identification." Psychological Review, 1959, 66, 126-35.

_____.
"Divergent Feedback and Sex-role Identification in Boys and Men." Merrill-Palmer Quarterly, 1964, 10 (1), 17-23.

Lynn, D. B.
"The Process of Learning Parental and Sex-role Identification." Journal of Marriage and the Family, 1966, 28, 466-70.

_____ and Sawrey, W. L.
"The Effects of Father-absence on Norwegian Boys and Girls." Journal of Abnormal and Social Psychology, 1959, 59, 258-62.

McCandless, B. R.
Children: Behavior and Development, 2nd edition. New York: Holt, Rinehart and Winston, 1967.

_____.
"Childhood Socialization." In Goslin, D. A. (ed.). Handbook of Socialization Theory and Research. Chicago: Rand McNally, 1969, 791-820.

McCarthy, D. A.
"Sex Differences in Language Development." In Kuhlen, R. G. and Thompson, G. G. (eds.). Psychological Studies of Human Development. New York: Appleton-Century-Crofts, 1963, 401-06.

McClelland, D. C.
"Wanted: A New Self-image for Women." In Lifton, R. J. (ed.). The Women in America. Boston: Beacon, 1964, 173-92.

_____; Atkinson, J. W.; Clark, R. A.; and Lowell, E. L.
The Achievement Motive. New York: Appleton-Century-Crofts, 1953.

Maccoby, E. E. (ed.).
The Development of Sex Differences. Palo Alto, California: Stanford University Press, 1966a.

_____.
"Sex Differences in Intellectual Functioning." In Maccoby, E. E. (ed.). The Development of Sex Differences. Palo Alto, California: Stanford University Press, 1966b, 25-57.

McGuire, T. O.
"Semantic Differential Methodology for the Structuring of Attitudes." American Education Research Journal, 1973, 10 (4), 295-306.

_____.
Personal communication, May, 1974.

Mandell, A. J. and Mandell, M. P.
"Suicide and Menstrual Cycle." Journal of American Medical Association, 1967, 200 (9), 132-33.

Mead, M.
Sex and Temperament in Three Primitive Societies. New York: Dell, 1935.

_____.
Male and Female. New York: Dell, 1949.

_____.
"The Childhood Genesis of Sex Differences in Behavior." In Tanner, J. M. and Inhelder, B. (eds.). Discussions on Child Development, Vol. 3. London: World Health Organization, 1958.

Messer, S. B. and Lewis, M.
"Social Class and Sex Differences in the Attachment and Play Behavior of Three Year Old Infants." Merrill-Palmer Quarterly, 1972, 18 (4), 295-306.

Meyer, J. W. and Sobieszek, B. E.
"Effect of a Child's Sex on an Adult's Interpretation of Behavior." Developmental Psychology, 1972, 6 (1), 42-48.

Millar, Susanna.
The Psychology of Play. Hammondsworth, Middlesex, England: Penguin, 1968.

Miller, D. R.
"Psychoanalytic Theory of Development: A Re-evaluation." In Goslin, D. A. (ed.). Handbook of Socialization Theory and Research. Chicago: Rand McNally, 1969, 481-502.

Millet, K.
Sexual Politics. New York: Avon, 1970.

Mischel, W.
"A Social-learning View of Sex Differences in Behavior." In Maccoby, E. E. (ed.). The Development of Sex Differences. Palo Alto, California: Stanford University Press, 1966, 56-81.

_____.
"Sex-typing and Socialization." In Mussen, P. H. (ed.). Carmichael's Manual of Child Psychology, Vol. II. New York: Wiley, 1970, 3-72.

_____ and Mischel, H.
"The Nature and Development of Psychological Sex Differences." In Lesser, G. S. (ed.). Psychology and Educational Practice. Glenview, Illinois: Scott, Foresman, 1971, 357-79.

Money, J.
"Influence of Hormones on Sexual Behavior." Annual Review of Medicine, 1965, 16, 67-82.

Money, J. and Ehrhardt, A. A.
Man & Woman, Boy & Girl. Baltimore, Maryland: John Hopkins University Press, 1972.

Montagu, Ashley.
The Natural Superiority of Women. New York: Collier, 1970.

Morris, D.
The Naked Ape. Toronto: Bantam, 1967.

Moss, H. A.
"Sex, Age and State as Determinants of Mother-infant Interaction." Merrill-Palmer Quarterly, 1967, 13 (1), 19-36.

Moss, R. H.; Kopell, B. S.; Melges, F. T.; Yalon, I. D.; Lande, D. T.; Clayton, R. B.; and Hamburg, D. A.
"Fluctuations in Symptoms and Moods during the Menstrual Cycle." Journal of Psychosomatic Research, 1969, 13, 37-44.

Munpower, D. L.
"Sex Ratios found in Various Types of Referred Exceptional Children." Exceptional Children, 36, 8, 1970, 621-23.

Mussen, P. H.
"Early Sex-role Development." In Goslin, D. A. (ed.). Handbook of Socialization Theory. Chicago: Rand McNally, 1969, 707-29.

_____ and Rutherford, E.
"Parent-child Relations and Parental Personality in Relation to young Children's Sex-role Preferences." Child Development, 1963, 34, 589-607.

Nunnally, J. C.
Psychometric Theory. New York: McGraw-Hill, 1967.

Oetzel, R. M.
"Annotated Bibliography and Classified Summary of Research in Sex Differences." In Maccoby, E. E. (ed.). The Development of Sex Differences. Palo Alto, California: Stanford University Press, 1966, 223-351.

Osgood, C. E.
"Studies on the Generality of Affective Meaning Systems." American Psychologist, 1962, 17, 10-28.

_____.
"Exploration in Semantic Space: A Personal Diary." Journal of Social Issues, 1971, 27 (4), 5-64.

_____ and Suci, G. J.
"Factor Analysis of Meaning." Journal of Experimental Psychology, 1955, 50, 325-28.

Osgood, C. E.; Suci, G. E.; and Tannenbaum, P. H.
The Measurement of Meaning. Urbana: University of Illinois Press, 1957.

Osofsky, J. D. and O'Connell, E. J.
"Parent-child Interaction." Developmental Psychology, 1972, 7 (2), 157-68.

Parsons, T.
"Family Structure and Socialization of the Child." In Parsons, T. and Bales, R. F. (eds.). Family Socialization and Interaction Process. Glencoe, Illinois: Free Press, 1955.

_____.
"Social Structure and the Development of Personality: Freud's Contribution to the Integration of Psychology and Sociology." Psychiatry, 1958, 21, 321-40.

Pauley, F. R.
"Let's Give Boys a Break." Phi Delta Kappan, April, 1959, 281-83.

Piaget, J. and Inhelder, B.
The Psychology of the Child. New York: Basic Books, 1969.

Pumpian-Mindlin, E.
"Contributions of Psychoanalytic Theory to the Understanding of Sexual Development and Behavior." In Wahl, C. W. (ed.). Sexual Problems: Diagnosis and Treatment in Medical Practice. New York: Macmillan, 1967, 22-27.

Rabban, M.
"Sex-role Identification in young Children in Two Diverse Social Groups." Genetic Psychology Monographs, 1950, 42, 81-158.

Rebelsky, Freda and Hanka, C.
"Father's Verbal Interaction with Infants in the First Three Months of Life." Child Development, 1971, 42 (1), 64-69.

Roessler, R. T.
"Sexuality and Identity: Masculine Differentiation and Feminine Constancy." Adolescence, 1971, 6 (22), 187-96.

Rosenthal, R. and Jacobson, L.
Pygmalion in the Classroom: Teacher Expectations and Pupil's Intellectual Development. New York: Holt, Rinehart and Winston, 1968.

Rosenthal, R. and Rosnow, R. L. (eds.).
Artifact in Behavioral Research. New York: Academic Press, 1969.

Rosenkrantz, P.; Vogel, S.; Bee, H.; Broverman, I.; and Broverman, D. M. "Sex-role Stereotypes and Self-concepts in College Students." Journal of Consulting and Clinical Psychology, 1968, 32 (3), 287-95.

Rothbart, M. K. and Maccoby, E. E. "Parent's Differential Reactions to Sons and Daughters." Journal of Personality and Social Psychology, 1966, 4 (3), 237-43.

Schaeffer, D. L. (ed.). Sex Differences in Personality: Readings. Belmont, California: Brooks/Cole, 1971.

Schmidt, L. C. "Sex-role Attitudes and Changing Life Styles of Professional Women." Unpublished Doctoral thesis, University of Alberta, 1973.

Schmidt, W. H. O. Child Development: The Human Cultural and Educational Context. New York: Harper and Row, 1973.

Sears, R. R. "Development of Gender Role." In Beach, F. A. (ed.). Sex and Behavior. London: Wiley, 1965, 137-63.

_____; Maccoby, E. E.; and Levine, H. Patterns of Child Rearing. Evanston, Illinois: Row, Peterson, 1957.

_____; Rau, L.; and Alpert, R. Identification and Child Rearing. Palo Alto, California: Stanford University Press, 1965.

Sexton, P. "How the American Boy is Feminized." Psychology Today, 1970, 23,29, 66-67.

Sherriffs, A. C. and Jarrett, R. F. "Sex Differences in Attitudes about Sex Differences." Journal of Psychology, 1953, 35, 161-68.

Simon, W. and Gagnon, J. H. "Psychosexual Development." In Wertheimer, M. (ed.). Confrontation: Psychology in the Problems of Today. Atlanta, Georgia: Scott, Foresman, 1970, 43-51.

Snider, J. G. and Osgood, C. E. (eds.). Semantic Differential Technique: A Source Book. Chicago: Aldine, 1969.

Stoller, R. J.
Sex and Gender. New York: Science House, 1965.

Stone, G. P.
"The Play of little Children." In Herron, R. E. and Sutton-Smith, B. (eds.). Child's Play. New York: Wiley, 1971, 4-14.

Stone, L. J. and Church, J.
Childhood and Adolescence. New York: Random House, 1968.

Stone, L. J.; Smith, H. T.; and Murphy, L. B. (eds.).
The Competent Infant: Research and Commentary. New York: Basic Books, 1973.

Strong, E. K., Jr.
Manual, Strong Vocational Interest Blanks. Palo Alto, California: Consulting Psychologists Press, 1959.

Sutton-Smith, B.; Rosenburg, B. G.; and Morgan, E. F.
"Development of Sex-differences in Play Choices during Preadolescence." Child Development, 1963, 34, 119-26.

Tanner, J. M.
"Physical Growth." In Mussen, P. H. (ed.). Carmichael's Manual of Child Psychology, Vol. I. New York: Wiley, 1970, 77-156.

Terman, L. M. and Tyler, L. E.
"Psychological Sex Differences." In Carmichael, L. (ed.). Manual of Child Psychology. New York: John Wiley and Sons, 1954, 1064-1114.

Thorndike, R. L.
"Review of R. Rosenthal and L. Jacobsen, Pygmalion in the Classroom." American Educational Research Journal, 1968, 4, 708-11.

Tiger, L.
Men in Groups. London: Nelson, 1969.

Tinbergen, N.
"On War and Peace in Animals and Man." Science, 1968, 160, 1, 11-18.

Tobach, E.
"Some Evolutionary Aspects of Human Gender." American Journal of Orthopsychiatry, 1971, 41 (5), 710-15.

Toews, L. K. W.
"Self-hatred in College Women: Sex-role Stereotypes and Same-sex Affiliation." Unpublished Doctoral thesis, University of Alberta, 1973.

Travers, R. M. W.
An Introduction to Educational Research. New York: Macmillan and Co., 1969.

Tulkin, S. R. and Cohler, B. J.
"Childrearing Attitudes and Mother-child Interaction in the First Year of Life." Merrill-Palmer Quarterly, 1973, 19 (2), 95-106.

Tyler, L. E.
The Psychology of Human Differences. New York: Appleton-Century-Crofts, 1965.

_____.
"Sex Differences." In Encyclopedia of Educational Research. London: Macmillan, 1969, 1217-21.

Wackwitz, J. H. and Horn, J. L.
"On Obtaining the best Estimates of Factor Scores within an ideal simple Structure." Multivariate Behavioral Research, 1971, 6 (4), 389-408.

Ward, W. D.
"Process of Sex-role Development." Developmental Psychology, 1969, 1 (2), 163-68.

_____.
Personal communication, April, 1972.

Watzlawick, P.; Beavin, J. H.; and Jackson, D. D.
Pragmatics of Human Communication, A Study of Interactional Patterns, Pathologies, and Paradoxes. New York: Norton, 1967.

White, B. L.
Human Infants: Experience and Psychological Development. Englewood Cliffs, New Jersey: Prentice-Hall, 1971.

Winer, B. J.
Statistital Principles in Experimental Design. New York: McGraw-Hill, 1962.

Witkin, H. A.; Dyk, R. B.; Faterson, H. F.; and Goodenough, D. R.
Psychological Differentiation. New York: Wiley, 1962.

Wolff, P. H.
"Observations on Newborn Infants." Psychosomatic Medicine, 1959, 21, 110-18.

Wright, D. S.; Taylor, A.; Davies, D. R.; Sluckin, W.; Lee, S. G. M.; and Reason, J. T.
Introducing Psychology: An Experimental Approach. Baltimore, Maryland: Penguin Books, 1970.

Wright, M. J.
Sex Differences in Children. Ottawa, Canada: Mental Health Division, Department of National Health and Welfare, 1956.

Zimbardo, P. and Ebbesen, E. B.
Influencing Attitudes and Changing Behavior. Reading, Massachusetts, 1969.

APPENDIX A

INTRODUCTORY LETTER TO PARENTS

FACULTY OF EDUCATION
EDUCATIONAL
TELEPHONE (403) 432-5249

THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA
T6G 2G5

A research team at the University of Alberta is currently engaged in a study of how parents perceive young children. One way of learning about how children develop is to ask parents for information they have gained while dealing with their own as well as other people's children. We are particularly interested in arriving at a comprehensive overview of the differences and similarities in children of different sexes and at different ages, as seen by parents. We believe that such information will prove of considerable help to all who are engaged in child care and child rearing.

We are asking you whether you would be willing to participate in this study. You may ask: Why me? We are interested in the experience of parents who currently have children of three years of age and younger. We looked at the recent City Census and randomly selected parents with children of this age; your names were among them.

The study will require approximately 45 minutes of your time and will entail completing a questionnaire describing the degree to which you have found children at different ages to display various characteristics. The questionnaire can be completed in your own home at your convenience. After completing the questionnaire, you will be given a description of the study. If you wish, you will also be forwarded a summary of the results of the study upon its completion. Our experience so far has indicated that parents have found both the completion of the questionnaire and the following explanation and discussion an interesting and informative experience.

I shall be contacting you in about a week. If you are willing to participate--and I very much hope that you will be--we can then make the necessary arrangements.

If, in the meantime, you have any questions, please do not hesitate to call me at 432-5030 during the day, or 433-5467 during the evening.

Yours sincerely,

Gary H. Jeffery, Psychologist
Doctoral Candidate and
Research Coordinator

GHJ/mlc

APPENDIX B

CHILD DESCRIPTION QUESTIONNAIRE (CDQ)

CHILD DESCRIPTION QUESTIONNAIRE

By Gary H. Jeffery

PLEASE COMPLETE THE PERSONAL INFORMATION SECTION FIRST, THEN GO ON TO THE SPECIFIC CHILD DESCRIPTION ITEMS.

*ALL INFORMATION WHICH YOU SUPPLY IN THIS QUESTIONNAIRE WILL BE KEPT STRICTLY CONFIDENTIAL, AND WILL BE USED SOLELY FOR RESEARCH PURPOSES.

DESCRIPTIVE PERSONAL INFORMATION

Please answer the following general information questions:

NAME: _____, _____
Surname Given Names

AGE: _____ MARITAL STATUS: ( ) MARRIED
( ) DIVORCED
( ) WIDOWED
( ) SEPARATED
( ) SINGLE

IF CURRENTLY MARRIED, HOW MANY YEARS HAVE YOU BEEN IN THE CURRENT MARRIAGE?

_____

LIST THE AGES AND SEXES OF YOUR CHILDREN:

AGE	SEX (CIRCLE)
_____	M F
_____	M F
_____	M F
_____	M F
_____	M F

WERE YOU BORN IN CANADA? ( ) YES ( ) NO

IF NO, (a) WHERE WERE YOU BORN? _____

(b) HOW LONG HAVE YOU LIVED IN CANADA? _____

WAS YOUR FATHER BORN IN CANADA? ( ) YES ( ) NO

IF NO, WHERE WAS HE BORN? _____

WAS YOUR MOTHER BORN IN CANADA? ( ) YES ( ) NO

IF NO, WHERE WAS SHE BORN? _____

HOW MANY BROTHERS AND/OR SISTERS DO, OR DID, YOU HAVE? _____

WHICH OF THE FOLLOWING BEST DESCRIBES YOUR CURRENT EMPLOYMENT STATUS?

( ) FULL-TIME

( ) PART-TIME

( ) TEMPORARILY UNEMPLOYED

( ) NOT REGULARLY EMPLOYED, OR SEEKING EMPLOYMENT

*WHAT IS YOUR APPROXIMATE ANNUAL INCOME (NOT INCLUDING THAT OF YOUR SPOUSE)?

( ) LESS THAN $3,000

( ) $3,000 - $5,999

( ) $6,000 - $9,999

( ) $10,000 - $14,999

( ) $15,000 - $18,999

( ) $19,000 PLUS

BRIEFLY DESCRIBE YOUR PRINCIPLE OCCUPATION. INCLUDE THE TITLE OR NAME OF YOUR JOB, AS WELL AS A BRIEF DESCRIPTION OF THE JOB WHEN THERE IS A CHANCE THAT THE TITLE IS NOT ADEQUATELY CLEAR.

*THIS, AS WELL AS ALL OTHER INFORMATION ON THIS QUESTIONNAIRE IS STRICTLY FOR DESCRIPTIVE AND STATISTICAL ANALYSIS, AND SHALL BE USED SOLELY FOR RESEARCH PURPOSES.

WOULD YOU CONSIDER THE POSSIBILITY OF BEING INVOLVED IN FUTURE RESEARCH?

( ) YES ( ) NO

DO YOU WISH A SUMMARY OF THE RESEARCH FINDINGS?

( ) YES ( ) NO

SPECIFIC QUESTIONNAIRE INSTRUCTIONS

We would like to know something about how adults perceive young children. We are interested in your perceptions of both boys and girls at various ages. To help you recall what children are like at the five ages in which we are interested, here is a brief description of some of their general characteristics.

Newborns: Here we are considering the child who has recently come home from the hospital. He sleeps much of the time, frequently needs to be fed, is poorly co-ordinated and has few well developed capabilities beyond crying.

6 month olds: Children at this age are able to recognize parents, smile readily and be responsive to various parental actions. They are also usually able to reach for objects and to raise at least part of their torso off the ground.

1 year olds: The most distinctive characteristic of this age is that they already, or soon will be able to walk. They can usually get around quite well by some form of creeping and also frequently have a few simple words like Mama, Dada, Baby, etc.

21 month olds: Children at this age usually are walking or "toddling". They are beginning to discover and develop language, quite quickly, as well. Parents often recall this age as it is often when toilet training efforts are at their peak.

3 year olds: By now the child usually walks well and talks well. Frequently "baby features" are already lost or are rapidly being lost. This child, although rapidly fluctuating in his interests, is usually able to play at least briefly by himself, frequently at activities mirroring those which he has observed his parents or others around him perform.

There are obviously many ways in which children at any age differ. There are also many ways in which children at a given age are similar. It is these similarities in which we are interested. We would like to know what the average child is like in your experience, and how you perceive him. For example, most people would agree that the average six month old girl smiles quite readily. You could describe the degree to which such a girl smiles on a scale, by putting an "X" on a scale describing the amount of smiling. You might for example mark such a scale as follows:

Smiles Readily ___:_X_:___:___:___:___:___ Rarely Smiles

There are no wrong answers to these questions. The answers to the questions we are asking simply are not known. While answering the following questions, try to stick with the first answer that you think of. Please do not skip any questions. Answer the questions as quickly as you can. Do not look back at your previous answers. We are interested in your first impressions. If you consider the rating to be neutral, ie. both sides of the scale to be equally associated with the idea, or if the scale is completely irrelevant, unrelated to the concept, then you should mark the middle space.

If you have any questions at all, please do not hesitate to contact me either at 432-5030, or at 433-5467.

Please turn the page and begin.

NEWBORN BOYS[2]

NOT RESPONSIVE	_____:_____:_____:_____:_____:_____:_____	RESPONSIVE
ALERT	_____:_____:_____:_____:_____:_____:_____	NOT ALERT
CRIES EASILY	_____:_____:_____:_____:_____:_____:_____	NEVER CRIES
SHARP	_____:_____:_____:_____:_____:_____:_____	DULL
HARD	_____:_____:_____:_____:_____:_____:_____	SOFT
DEPENDENT	_____:_____:_____:_____:_____:_____:_____	INDEPENDENT
IMPULSIVE	_____:_____:_____:_____:_____:_____:_____	NOT IMPULSIVE
NOT CONFIDENT	_____:_____:_____:_____:_____:_____:_____	CONFIDENT
NEEDS ATTENTION	_____:_____:_____:_____:_____:_____:_____	DOES NOT NEED ATTENTION
PASSIVE	_____:_____:_____:_____:_____:_____:_____	ACTIVE
DISLIKES BEING HELD	_____:_____:_____:_____:_____:_____:_____	LIKES BEING HELD
FEMININE	_____:_____:_____:_____:_____:_____:_____	MASCULINE
SENSITIVE TO PAIN	_____:_____:_____:_____:_____:_____:_____	NOT SENSITIVE TO PAIN
NOT DELICATE	_____:_____:_____:_____:_____:_____:_____	DELICATE
AFFECTIONATE	_____:_____:_____:_____:_____:_____:_____	NOT AFFECTIONATE
STRONG WILLED	_____:_____:_____:_____:_____:_____:_____	NOT STRONG WILLED
SMOOTH	_____:_____:_____:_____:_____:_____:_____	ROUGH
DOES NOT LIKE WATCHING	_____:_____:_____:_____:_____:_____:_____	LIKES WATCHING
LARGE	_____:_____:_____:_____:_____:_____:_____	SMALL
EASILY QUIETED	_____:_____:_____:_____:_____:_____:_____	NOT EASILY QUIETED

2. The same format was used on all pages of the CDQ. The concept to be rated changed for each page. The following concepts were used: "NEWBORN GIRL", "SIX MONTH OLD BOY", "SIX MONTH OLD GIRL", "ONE YEAR OLD BOY", "ONE YEAR OLD GIRL", "TWENTY-ONE MONTH OLD BOY", "TWENTY-ONE MONTH GIRL", "THREE YEAR OLD BOY", "THREE YEAR OLD GIRL".

APPENDIX C

CELL MEANS DERIVED FROM ANALYSES OF VARIANCE

APPENDIX C

Cell means on which the three analyses of variance carried out in this study are based:

Factor One:

A Effect

Male Parent	-22.9615
Female Parent	-21.9337

B Effect

Male Child	-23.0436
Female Child	-21.9263

C Effect

Newborn	-13.8240
Six months	-21.3547
One year	-24.2821
Twenty-one months	-26.0168
Three years	-26.9469

A x B Interaction

	Male Parent	Female Parent
Male Child	-23.5354	-22.3875
Female Child	-22.4747	-21.3928

A x C Interaction

	Newborn	Six months	One year	Twenty-one months	Three years
Male Child	-13.9219	-21.9375	-25.0937	-26.4115	-27.4427
Female Child	-13.7108	-20.6807	-23.3434	-25.5602	-26.3735

B x C Interaction

	Newborn	Six months	One year	Twenty-one months	Three years
Male Child	-13.8715	-21.9274	-24.9441	-26.5140	-27.9609
Female Child	-13.7765	-20.7821	-23.6201	-25.5196	-25.9330

A x B x C Interaction

	Male Parent		Female Parent	
	Male Child	Female Child	Male Child	Female Child
Newborn	-13.8021	-14.0417	-13.9518	-13.4699
Six months	-22.1458	-21.7292	-21.6747	-19.6867
One year	-25.7396	-24.4479	-24.0241	-22.6627
Twenty-one months	-27.0000	-25.8229	-25.9518	-25.1687
Three years	-28.9896	-25.8958	-26.7711	-25.9759

Factor Two:

A Effect

Male Parent	3.0802
Female Parent	2.8373

B Effect

Male Child	6.8056
Female Child	-0.8704

C Effect

Newborn	-2.0559
Six months	1.5168
One year	3.8073
Twenty-one months	5.1397
Three years	6.4302

A x B Interaction

	Male Parent	Female Parent
Male Child	7.1104	-0.9500
Female Child	6.4530	-0.7783

A x C Interaction

	Newborn	Six months	One year	Twenty-one months	Three years
Male Parent	-2.3437	1.3958	4.0104	5.5833	6.7552
Female Parent	-1.7229	1.6566	3.5723	4.6265	6.0542

B x C Interaction

	Newborn	Six months	One year	Twenty-one months	Three Years
Male Child	0.1285	4.8324	7.6816	9.5475	11.8380
Female Child	-4.2402	-1.7989	-0.0670	0.7318	1.0223

A x B x C Interaction

	Male Parent		Female Parent	
	Male Child	Female Child	Male Child	Female Child
Newborn	-0.2083	-4.4792	0.5181	-3.9639
Six months	4.7604	-1.9687	4.9157	-1.6024
One year	8.1562	-0.1354	7.1325	0.0120
Twenty-one months	10.3750	0.7917	8.5904	0.6627
Three years	12.4687	1.0417	11.1084	1.0000

Factor Three:

A Effect

Male Parent	3.5146
Female Parent	3.2289

B Effect

Male Child	5.3408
Female Child	1.4235

C Effect

Newborn	-1.9637
Six months	1.2011
One year	3.9721
Twenty-one months	5.7737
Three years	7.9274

A x B Interaction

	Male Parent	Female Parent
Male Child	5.5000	1.5292
Female Child	5.1566	1.3012

A x C Interaction

	Newborn	Six months	One year	Twenty-one months	Three years
Male Parent	-2.1302	1.2604	4.2865	6.2083	7.9479
Female Parent	-1.7711	1.1325	3.6084	5.2711	7.9036

B x C Interaction

	Newborn	Six months	One year	Twenty-one months	Three years
Male Child	-1.3073	2.5866	6.1676	8.2905	10.9665
Female Child	-2.6201	-0.1844	1.7765	3.2570	4.8883

A x B x C Interaction

	Male Parent		Female Parent	
	Male Child	Female Child	Male Child	Female Child
Newborn	-1.6250	-2.6354	-0.9398	-2.6024
Six months	2.4167	0.1042	2.7831	-0.5181
One year	6.6562	1.9167	5.6024	1.6145
Twenty-one months	8.9271	3.4896	7.5542	2.9880
Three years	11.1250	4.7708	10.7831	5.0241