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EFFECTS OF SENSORI-STIMULATION WITHIN PARENT-CHILD DYADS
ON THE MENTAL SELF-IMAGE AND PSYCHOSEXUAL IDENTITY
OF FOUR-YEAR-OLD CHILDREN

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EFFECTS OF SENSORI-STIMULATION WITHIN PARENT-CHILD DYADS ON THE MENTAL SELF-IMAGE AND PSYCHOSEXUAL IDENTITY OF FOUR-YEAR-OLD CHILDREN

By

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ABSTRACT

EFFECTS OF SENSORI-STIMULATION WITHIN PARENT-CHILD DYADS ON THE MENTAL SELF-IMAGE AND PSYCHOSEXUAL IDENTITY OF FOUR-YEAR-OLD CHILDREN

By

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In this research the effects of sensori stimulation between same-sex and opposite-sex parent child dyads on the child's mental image of self and the development of psychosexual identity were measured. Sensori-stimulation was measured for quantity of auditory, visual, and tactile contact between the parents and the subject in seconds of contact time. Parental contact was measured for quality according to a five point Likert Scale for each parent-child interaction. Mental self-image was measured through a modification of the Goodenough-Harris Drawing Test, wherein the subject was asked to "Draw a picture of yourself." Psychosexual identity was measured through a Gender Consistency Scale.

Thirty-six subjects, 18 boys and 18 girls, between four and five years of age, were randomly selected from the Greater Flint Area, in Michigan, during the Fall of 1983. The subjects were observed in their homes through structured observation and interview. At the time of the observation, both parents were at home and participated in the interview.

Quantity of sensori-stimulation between the subject and the

parents was found to be moderately correlated with the subject's development of mental self-imagery. Quantity of sensori-stimulation from both parents was unrelated to the development of the child's psychosexual identity. The predictive power of the regression equation was increased when the parent-child relation-ship was differentiated into comparison for same-sex and opposite-sex interaction.

The most important finding of this research is that sensori-stimulation, as measured for quantity, appears to correlate with the formation of mental self-imagery in children when the interaction between parent and child is of the same-sex.

Lovingly dedicated to

My Family

ACKNOWLEDGEMENTS

In Fiddler On The Roof, Tevye sings, "I'd discuss . . . books with the learned men everyday and that would be the greatest gift of all." In 1979, I came to Michigan State University with a seed of an idea. I had noticed that children with positive, high-interacting parents appeared to be able to be placed in unfamiliar situations with greater ability to adapt that did children with highly stressed, non-interacting parents. I had noticed differences in the self-portraits of children and found that some children appeared to produce drawings with detailed body parts, while other children drew scattered parts about the page. I had studied the work of Piaget and his premises about the effect of sensori-motor involvement as a prelude to the development of mental imagery. I wondered if parental sensory interaction with children contributed to the development of their mental imagery. Thus, I had formed a seed idea. I needed a fertile environment in which the idea could develop. I found the environment in the College of Human and Child Ecology at Michigan State University with additional support from Dr. Elaine Donelson, from the College of Psychology, and Dr. James Stapleton, from the College of Statistics and Probability.

Dr. Eileen Earhart has been my chairperson for the past five years. I am most appreciative of her continued encouragement, her vast knowledge about developmental issues, her warmth and concern,

her directness, and her sense of appropriateness.

Dr. Beatrice Paolicci understood my seed-idea and with her unique abilities helped me to form the concepts that are central to my research. She understood my abstract ideas and helped me build a model with a concrete basis that could be measured and understood by others. I am indebted to her for her ability to make noise into communication by sharing ideas.

Although Dr. Margaret Bubolz did not serve on my committee, she, and Dr. Paolucci provided the ecological framework that supported the research, helping me to form the theoretical framework so necessary to scientific study.

I would like to thank Dr. Delores Borland for providing the 'packaging', the format of order so that my seed-idea could be rooted in a research study according to standards recognized by scientific communities. Many hours were spent, by Dr. Borland, aiding in the preparation of this study.

I would wish to acknowledge Dr. Verna Hildebrand, who nurtured and supported me, nudging me to continue, providing direction and encouragement, and moving me toward the fulfillment of goals. Dr. Hildebrand edited my work, and then edited it again, mixing words for improvement with words of encouragement.

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INTRODUCTION

In this research the effects of sensori-stimulation within same-sex and opposite-sex parent-child dyads on the child's mental image of self and the development of psychosexual identity were measured. Sensori-stimulation was measured for quantity of auditory, visual, and tactile contact between the parents and the subject in seconds of contact time. Parental contact was measured for quality according to a five point Likert Scale for each parent-child interaction. Mental self-image was measured through a modification of the Goodenough-Harris Drawing Test, wherein the subject was asked to, "Draw a picture of yourself". Psychosexual identity was measured through a Gender Consistency Scale.

Thirty-six subjects, 18 boys and 18 girls, between four and five years, were randomly selected from the Greater Flint area. The subjects were observed in their home through structured observation and interview. At the time of the home visit, both parents were present and participated in the interview.

Statement of the Problem

A review of the literature in two books containing the abstracts of research conducted between 1977 through 1978 indicated that the formation of mental self imagery has received little empirical testing. In 1977 - 1978, fourteen research abstracts

were presented in Child Development Abstracts and Bibliographies. In 1982 - 1983, thirty research studies were presented in Psychological Abstracts, either referenced as mental self-image, or self-concept and self-esteem. The theoretical frameworks used as a basis for the research were psychodynamic, social learning, and cognitive developmental. Of the forty-four articles, emphasis was on the remediation of poor self-image or low self-concept and the variables that predicted or explained low self-concept. How the mental self-image is formed has received little empirical testing.

In the past, researchers have looked at the psychosexual identity of the child using three major frameworks. In all frameworks the psychosexual identity is measured through parental interaction. In psychodynamic theory, psychosexual identity is related to biological and emotional forces. In social learning theory, psychosexual identity is established through environmental conditioning by which the child responds as a result of reward or punishment. In cognitive-developmental theory, psychosexual identity is a sequential process and is based upon intellectual development. In each of these three frameworks the child is measured in specifics rather than as an integrated whole interacting actively with the environment.

In this research a family ecological approach to understanding the development of a mental self-image and psychosexual identity was used, providing a more inclusive theory than any of the three theories used in prior research. From the ecological perspective, the child is an integrated being interacting with the environment.

The parent is the environment and this grouping, child and environment, becomes a system. The environment of parent, is believed to stimulate the senses involving the child and resulting in cycles of feedback (Melson, 1980).

The overall objective of this research was to measure the effects of sensori-stimulation between parent and child on the development of the child's mental self-image as a prelude to the formation of the child's psychosexual identity.

Conceptual Framework

In prior studies the development of a mental self-image has been approached from a social, emotional, or cognitive theoretical orientation. The same division of emphasis was true of research related to the formation of psychosexual identity. Yet, human outcomes are related to all aspects of development. In this research, the primary contribution of each theory was integrated into an ecological model. In the ecological model, the child is viewed as a growing organism that develops socially and cognitively through interaction with the environment. The system of child and environment is based upon an interactive model with feedback as a form of energy transmission. The family ecosystem, in this research, consisted of child and parent, wherein the child was one unit of energy transmission and the parent the other. The child's environment was the human element of parents. Energy was transmitted from parent to child and the child to parent via engagement of the auditory, visual, and tactile sensory system.

The child's mental self-image was defined as the mental

representation, or memory, the child had of self. The stronger, or more detailed the mental representation, the stronger the mental self-image that is formulated.

Psychosexual identity referred to the part of self development wherein one comes to know the self as female or male. Psychosexual identity was postulated to be formed sequentially as children respond to social reinforcement of the environment via energy in the form of sensori-stimulation.

In psychodynamic theory it is postulated that self-identity begins when the infant separates from the concept of self-mother to self. This is said to occur from the experience of wanting the mother's breast and not receiving it (Klein, 1961). Psychosexual identity is the self-identity as male or female and is postulated to result as the child progresses through the Oedipal or Electra (phallic stage) period of conflict. During this period the child is sexually attracted to the opposite-sex parent and believes the same-sex parent to be a rival for the loving attention desired from the parent of the same-sex. When the child perceives the same-sex parent to be more powerful than self, the child fears retaliation for thoughts of desire and hostility. In defense, the child identifies with the same-sex parent and begins to imitiate the behavior the same-sex parent displays. Unresolved conflict would result in a confusion of psychosexual identity. In this theory an emphasis is placed upon the child's awareness of genital differences as manifested by a penis or lack of a penis. The boy, fearing the

anger of his father, might experience a "castration anxiety" while the girl, perceiving that men have more power, might experience penis envy. In psychodynamic theory it is suggested that the development of mental self-image and psychosexual identity is dependent upon the resolution of needs or desires specific to the stages of development.

The focus of social learning theory is upon the child's imitiation of and identification with significant others. Self-image is discussed in terms of positive or negative interaction with the caregivers in the child's environment. The onset of mental self-image begins with imprinting. Imprinting is an attachment between an infant and the first moving object or person seen (Hess, 1962; Moltz, 1965). Imprinting is an instinctive tendency to remain near the person first observed at the time of the birth. Psychosexual identity develops as the child responds to the environmental messages that reinforce the child's growing awareness of self as male or female. Once the gender of the child is established, usually at birth, the child is treated according to social classification and given a 'girl' name or a 'boy' name, dressed in feminine or masculine clothing, and placed in a room decorated according to sex-typed choices. Behavior is expected which is considered appropriate to the gender of the child. When the child displays such behavior the child is rewarded through supportive responses from the people with whom the attachment had been formed. When the child displays behavior inconsistent or in opposition to the biological gender, the child is given nonsupport, or is punished. Thus, the child accepts socially scripted behaviors, defining the

psychosexual identity, through the positive or negative response to the parent. Parental response to a child's gender leading to sex-role orientation is measured by evidence of imitations of the model by the child (Bell, Johnson, McGillicudy, and Siegel, 1981; Biller, 1969; Brody and Stoneman, 1981; Clark-Stewart and Hevey, 1981; Estep, Burt and Milligan, 1977; Hartup, 1962; Hetherington and Frankie, 1967; Munsinger and Rabin, 1978; Santrock, 1970; and Stephens and Day, 1979).

In Cognitive theory it was suggested by Piaget (1962) that mental self-image is the result of the child's sensorimotor involvement with people and objects in the environment. Using a series of sensori-motor explorations with success and error, children assimilate models through imitation that is the result of special accommodation through perceptive activity. The child's 'imitations' are an attempt to integrate or sycretize elementary forms of sensorimotor schemas into mental representations that lead to the formation of images. As the child's intellectual development progresses from a mental image of self as a person, the child begins to differentiate self into a specific category as a male person or a female person of boy or girl. Psycho-sexual identity occurs in a sequential development as the child re-orients to each period of classification according to the child's cognitive development. Initially the child believes that psychosexual identity is subject to environmental impingement. In this stage, the child believes that any external change in self, or others, results in a change in gender, or psychosexual identity. Researchers using this theory focus upon measures of gender identity, gender stability over time, and gender consistency. Level of psychosexual identity is

determined through the child's classification as male or female and the extent that gender identity is integrated cognitively by the child (Abelson, 1979; Emmerich, Goldman, Kirsh, and Sharabany, 1977; Gouze and Nadelman, 1980; Marcus and Overton, 1978; McConaghy, 1979; Slaby and Frey, 1975; and Storm, 1979).

Need for the Study

A poor self-concept has been found to be related to physical handicaps, familial relationships, substance abuse, poor school performance with low academic achievement, and the inability to set goals and determine values (Ahlgren, Noren, Houchhauser, and Garvin, 1982; Berryman, Davis and Simmons, 1981; Brown and Karnes, 1982; Coleman, 1983; Mischey, 1981; and Reardon and Griffing, 1983). Yet, despite knowledge about the relationship between a positive mental self-image and positive outcomes, empirical research testing of specific variables as related to the formation of mental self-image has not been done.

In each of the prior theories, certain variables are postulated to relate to formation of mental self-image, but empirical testing has not incorporated the variables into a theoretical model. In psychodynamic theory interaction with the parent of the same-sex is important to the development of psychosexual identity at, or about, four to five years of age. Further, in psychodynamic theory, children who are unable to resolve the conflict of identification with the same-sex parent will experience psychosexual confusion. In

social learning theory, parental reinforcement can be negative or positive. Thus, quality of parental contact is the reinforcement for child interaction and acceptance of self as male or female. In cognitive development theory the child's mental self-image and psychosexual identity are developed through sensorimotor involvement with the environment. Thus, quantity of sensori-stimulation enhances the child's development.

Each of the theoretical frameworks, psychodynamic, social learning, and cognitive development, offered a partial explanation of the development of mental self-image and the progression toward psychosexual identity in this research. In earlier studies, no comparisons were made of quality of parental contact and quantity of sensori-stimulation on the development of mental imagery at any age. No prior research was found in which the development of a mental self-image was related to psychosexual identity.

This research was designed to use variables from three theoretical frameworks to provide an integrated model in which a social and a cognitive variable were measured, with attention to the stage of psychosexual interest in the child's parents as related in psychodynamic theory. The findings of this research could provide information leading to further understanding of the relationship between the quality of parental contact as related to the quantity of sensori-stimulation, as measured for parent-child contact within same-sex and opposite-sex dyads during the phallic stage of development during the child's fourth year.

Conceptual Definitions

The following concepts were defined throughout this study as:

Mental self-image. -- A mental representation or interior imitation resulting from sensory-motor schemas of one's perception of self and is assimilated through the perceptive activity of the child (Piaget, 1962).

Sensori-stimulation. -- The actual physical event or property activating a sensory receptor in the child as a result of parent-child interaction.

Quantity of time. -- The amount of time of sensori-stimulation between the child and parents as measured in seconds.

Quality of contact. -- The positive, negative, or neutral characteristics of the interaction between the parent and the child (Lamb, 1976).

Gender relationship. -- The parent-child dyad of same-sex or opposite-sex during each sensori-stimulation interaction.

Auditory stimulation. -- The stimulation of the cochlea of the inner ear through impact with sound wherein the child's parent(s) is talking, singing, or making auditory sounds within range of the child.

Visual stimulation. -- The act of looking, gazing, observing, staring, or having eye contact wherein the retina of the child's eye is stimulated through contact with the parent.

Tactile stimulation. -- The act during which the child is touched, held, stroked, hit or all acts in which one part of the child's body is in contact with the body of the parent.

Psychosexual Identity.-- That part of self development wherein the child comes to know self as female or male (Abelson, 1979; Emmerich, Goldman, Kirsh, and Sharabany, 1977; Gouze and Nadelman, 1980; McConaghy, 1979; Slaby and Frey, 1975).

Environment. -- All factors outside an organism that impinge upon it. If an individual is the organism the other family members are considered as the environment (Melson, 1980).

Interaction.-- The child's empathic involvement with the environment (Soderman, 1979).

Ecological.-- The interdependent nature of human beings and their environment, including energy flows (Soderman, 1979).

System. -- A group of units combined as to form a whole and operating in unison (Melson, 1980).

Assumptions

In the process of this study the following assumptions have been made.

1. In interaction with parents, the primary sense modalities used by children, four years of age, are auditory, visual, and tactile.
2. The sensori interaction within parent-child dyads can be quantified.
3. The quality of contact between parent and child was not significantly different, when being observed, as when the parent and the child interacted without research interference.
4. Simultaneous interaction between mother and child

and father and child affect the child as two independent stimulations.

Path Model

The ecological model used in this research is illustrated in Figure 1. The independent variables, quantity of sensori-stimulation and quality of parental contact, are postulated to form a path structural relationship to mental self-image as a prelude to the development of psychosexual identity. Age, an intervening variable, is added to provide further explanation of the variance in the development of child outcomes.

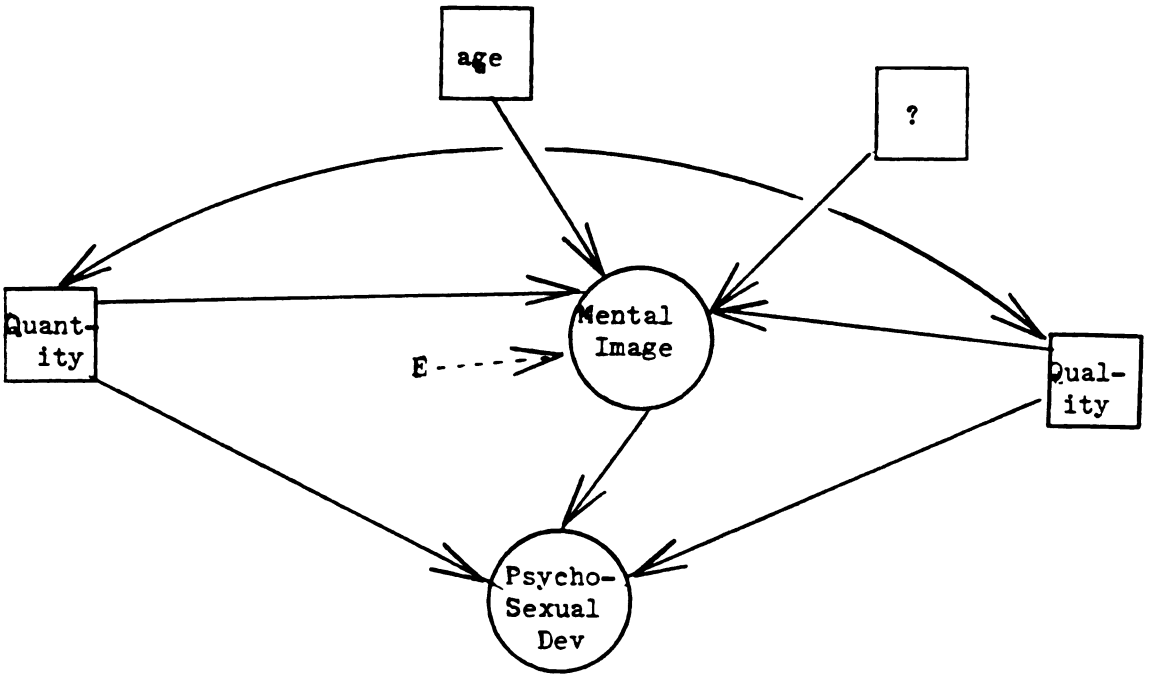
Research Hypotheses

The overall objective of this research was to measure the effects of sensori-stimulation between parent and child on the development of the child's mental self-image as a prelude to the development of psychosexual identity. Sensori-stimulation was measured through the auditory, visual, and tactile sense modalities, separately and collectively, for impact of multimodal sensori-stimulation interaction. In order to meet this objective three hypotheses were tested and are stated in null and alternative forms.

Hypothesis 1:

HO: Null Hypothesis

There is no relationship between the quantity of sensori-stimulation and the development of mental self-image in the child.



Key:

Dependent Variable

Independent Variables

Regression coefficient

Correlational
r relationship

E Residual causes
$=\sqrt{1 - R^2}$

? Variables added in Stepwise Multiple Regression

FIGURE 1 --Path Structural Relationship where Quantity and Quality of Sensori-Stimulation Within Parent and Child Dyads is Postulated to affect a Causal Hierarchy; Sensori-Stimulation affects the Development of Mental Self-Image inducing change in Psychosexual Identity, as conceptualized in the Model.

HI: Alternative Hypothesis

The greater the quantity of sensori-stimulation between parent and child, the higher the child's mental image of self will be.

Hypothesis 2:

HO: Null Hypothesis

There is no relationship between the quality of parental contact and the development of mental self-imagery in the child.

HI: Alternative Hypothesis

The greater the quality of parental contact between parent and child, the higher the child's mental image of self will be.

Hypothesis 3:

HO: Null Hypothesis

Quantity of sensori-stimulation will have no greater relationship to the development of the child's mental self-image than will quality of sensori-stimulation.

HI: Alternative Hypothesis

Quantity of sensori-stimulation will have a stronger positive relationship with the development of the child's mental self-image than will quality of sensori-stimulation.

This researcher postulated, furthermore, that the development of psychosexual identity is affected by sensori-stimulation between parent and child. A second objective in this research was to measure the effect of sensori-stimulation between parent and child on the development of the child's psychosexual identity. In order to meet the second objective three hypotheses were tested.

Hypothesis 4:

HO: Null Hypothesis

There is no relationship between the quantity of sensori-stimulation and the development of psychosexual identity in the child.

HI: Alternative Hypothesis

The greater the quantity of sensori-stimulation between parent and child, the higher the developmental level of the child's psychosexual identity will be.

Hypothesis 5:

HO: Null Hypothesis

There is no relationship between the quality of parental contact and the development of psychosexual identity in the child.

HI: Alternative Hypothesis

The greater the quality of parental contact between parent and child the higher the child's developmental level of psychosexual identity will be.

Hypothesis 6:

HO: Null Hypothesis

Quantity of sensori-stimulation will have no greater relationship to the development of the child's psychosexual identity than will quality of sensori-stimulation.

HI: Alternative Hypothesis

Quantity of sensori-stimulation will have a stronger positive relationship with the development of the child's psychosexual identity than will quality of sensori-stimulation.

The third objective of this research is to study the relationship between the development of the child's mental image of self and the development of the child's psychosexual identity. To meet this

objective one hypothesis was tested.

Hypothesis 7:

HO: Null Hypothesis

There is no relationship between the child's mental image of self and the developmental level of the child's psychosexual identity.

HI: Alternative Hypothesis

The greater the developmental level of the child's mental image of self, the higher the child's developmental level of psychosexual identity will be.

The fourth objective was to compare the effect of same-sex parent-child dyads, as compared to opposite-sex parent-child dyads, on child outcomes of mental image of self and the developmental level of psychosexual identity. To meet this objective one hypothesis was tested.

Hypothesis 8:

HO: Null Hypothesis

Quantity of sensori-stimulation and quality of parental contact within the same-sex parent-child will have no stronger relationship with these two variables than will opposite-sex dyads.

HI: Alternative Hypothesis

Quantity of sensori-stimulation and quality of parental contact within same-sex parent-child dyads will have a stronger relationship to child outcomes than will these two variables for opposite-sex dyads.

Research Questions

Four questions related to hypothesis testing were important to the development of this research. The first question is based upon

the choice of instrument that would ultimately be selected to measure quantity of sensori-stimulation. The Observation Sheet was used to measure the observed quantity of sensori-stimulation during a home visit, while the Parent Report was used to measure the parents' perception of sensori-stimulation.

Question 1:

> Does parental perception of quantity of sensori-stimulation, as measured by the Parent Report significantly correlate with the observed quantity of sensori-stimulation measured using the Observation Sheet?

The second set of questions is related to the difference in the quantity of contact between boys and girls in the interaction with parents, as well as the quality of care the children received. The next set of questions is concerned with the differences in interaction between boys and girls with mothers and fathers.

Question 2:

> Do girls receive significantly higher quality of contact and greater quantity of sensori-stimulation from mothers than they do from fathers.

Question 3:

> Do boys receive significantly higher quality of contact and greater quantity of sensori-stimulation from fathers than they do from mothers.

The fourth question is related to the individual contribution of each sense, auditory, visual and tactile, as compared to the intermodal contribution of the senses.

Question 4:

> Does a specific sense contribute to child outcomes of mental-self-image and psychosexual identity more than the intermodal

contribution of the senses?

Overview

Chapter II contains a review of literature related to the development of mental self-image and the development of psychosexual identity. The theoretical orientation of this paper, the ecological model, is discussed as well. Methodology is described in Chapter III, including a discussion of the sample selection, a descritption of the sample, the research design, selection and description of the instruments, concentual and operational definitions of the major variables, data collection and analysis, and the statistical methods used in the analysis of data. Chapter IV contains the descriptive and inferential statistics and a summary of the findings. The final chapter, Chapter V, includes the conclusions, discussion of findings, limitations and implications for future research.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

The research literature pertinent to this study is reviewed under three general headings: Research on Mental Self Image; Research on Psychosexual Identity Development; Research on Interaction Acts; and Integration: Leading to an Ecological Model.

Research On Mental Self-Image

The concept of one's self-image follows a developmental sequence. In infancy the self concept is based upon motor sensory experience through interaction with the environment (Piaget, 1962; Smart and Smart, 1977). Initially, infants must separate self from the mother-self (Klein, 1961) and the rest of reality (Smart and Smart). During the preschool years of life, the child's mental imagery is based upon a concrete reality, memories appear to be related to specific people and things rather than to concepts and abstractions and are the result of imitative accommodations of prior events or interactions (Piaget). Young children imitate to form an object-notion and after the internal self-image is formed children further classify the self with the body parts of others, initially through comparison of the face (Kohlberg, 1966; Piaget, 1962). Initially the concept of self and the mental-self-image are based upon physical occurrences of interaction with objects and people in the environment. As the child grows in cognition the mental self-image becomes more abstract. At maturity the

adult's self concept includes an ability to stand back and look at self, self-action, feelings, and relationships with others, and is more diverse than the child's mental self-image (Smart and Smart).

Early literature about mental self-imagery is philosophical with limited empirical research about the formation of mental self-image directly related to sensory stimulation from the environment (Di Leo, 1973; Klein, 1961; Piaget, 1962; Schilder, 1950). Di Leo (1973) wrote,

> It may be said . . . that a concept of one's body-image is essential for a valid perception of the outside; that the concept evolves, arriving at greater complexity through a sequence of identifiable stages; that while the impetus to its development arises from within, the form the body image will assume is dependent upon interaction between intrinsic forces and . . . the child's personal environment; and that preeminent is the person who provides the affection and stimulation that is called mothering (p. 22).

Di Leo (1973) postulated that the body-image is the self-perception and is the result of tactile, visual, and auditory interaction with the environment.

Schilder (1950) called the self-image a body image or body schema. He wrote that the body schema is three dimensional and is not mere perception but is based upon mental imagery as mental pictures and representations that are the result of sensory expereinces and present interactions. Imagery is modified, he wrote, through continual interchange between one's own body and the body image of others.

Schilder stated that the body image is dependent upon a physiological exchange with the environment through use of the

sensori systems. In his work he described the change in the mental pictures of self among patients suffering from apoplexy, brain lesions, amputations, or other body traumas.

Smart and Smart (1979) wrote that body experiences including movement and freedom to explore aid the child in developing a sense of self-imagery, wherein the self-image grows stronger as children experience body control and are able to expand their sensory experiences. This view is supported in the work of Lefford, Birch, and Green (1974) who found that children 3 to 6 years of age had difficulty localizing their fingers when they had either visual or tactile cues. However, when children were able to use information from more than one sense modality, such as visual and tactile, the performance of the children improved. Further, research by Nystul and Freedman (1982) described how active life styles of movement and exploration contributed to positive self-concepts in older children.

Empirical research about developmental sequences of mental self-imagery is scarce, with but one study since 1977. In that study the development of self-concept was used as a conceptual definition. Montemayor and Eisen (1977) found that as children grew from preschool years to adulthood there was a progression of self concept. The progression, or developmental sequence, was body imagery, sense of the physical self, interest in self-resources, possessions, territoriality, and more abstract relationships as existential, individuating, ideological sense of self with a sense of determination and unity.

An early classical work by Rouma (1919) suggested that the

mental self-image as revealed in drawings evolves in six stages:

1. First tentative attempts, wherein names might be given to indefinite shapes.
2. The tadpole stage.
3. A transitional stage during which the tadpole, or human schema consists of legs coming from a large head.
4. A representation of the self-image, front, or full faced.
5. A partial profile and full face figure.
6. Figures drawn correctly in profile (p. 199).

While Rouma did not use statistical method for analysis of data, he used numerous case studies to support his conclusions.

Early discussion of children's drawings, as a reflection of mental self-image, differ in the importance of the circle drawn by the child. Klein (1961) suggested that the circle represented the breast of the mother, desired by the child, and responsible for the child's initial acknowledgement of self as a separate being. Bettleheim, (1971) a psychodynamic theorist, ascribed to the circle-breast theory in his interpretation of autistic children's drawings. Di Leo (1970, 1973) wrote that the initial circle represents the head of a person.

Koppitz (1968) found that by five years of age children could be expected to draw the head and eyes of their human figure drawings. She summarized her work on analyzing children's drawings of themselves by stating that such drawings depicted an attitude toward themselves and the interpersonal relationships that were experienced. The mental self-image, Koppitz suggested is indicative of the developmental stage of the child, and determined by age, level of maturation, attitudes and concerns, and illustrated that most important to the child. Koppitz based her research on 1856 children 5 to 12 years of age. To score the drawings

a scoring derived from the Goodenough-Harris (1963) criteria was used. From the analysis of data, Koppitz found that by age five, 7 items could be expected on 85% of the drawings done by girls, and 6 items on 85% of the drawings done by boys. Koppitz developed a 30 developmental item scale, finding that the number of developmental items found on the drawings increased with the age of the child. To measure for impact of schooling Koppitz scored the drawings of the oldest students upon entering school in the fall and compared the results with the scores of the youngest students at the end of the school year. She found that when the youngest students' drawings were compared to the older students, at the age of the youngest students comparable to the older students' age at the time of the drawing, age rather than schooling appeared to predict the number of body parts drawn by the child. Koppitz scored the drawings of her subjects for a second set of signs, labeled Emotional Indicators, that appeared to be related to behaviors and attitudes of the children.

The work of Goodenough (1926) is an important contribution toward the understanding of the importance of the child's human figure drawing. Goodenough analyzed the work of prior authors who had written about drawings and summarized their work:

1. In young children a close relationshop is apparent between concept development illustrated in drawing and general intelligence.
2. Drawing, to the child is primarily a language, a form of expression, rather than a means of art.
3. In the beginning, children draw what they know, or remember, not what they see, as the child ages the child will attempt to draw what is seen.
4. Children exaggerate the size of items that seem to be important to them.

5. The order of development in drawing is remarkably consistent, even among children of different social environments.
6. The earliest drawings of children consist of items, or parts of the body without a spatial relationship between the parts.
7. In drawings, children pay little or no attention to the model.
8. . . .
12. Up to about the age of ten years, children draw the human figure in preference to any other subject (pgs 12-13).

Besides the review of the early literature, Goodenough developed a scoring system based upon analysis of 4000 drawings from children 4.0 years to 10 years of age. Based upon comparisons a set of standards was developed with specific directions for scoring a body part as passed or as failed. A double criterion was used to develop norms based upon the child's chronological age and the school grade. Standardized directions were given for administration of the test. Goodenough determined the validity of the test through comparison of the test scores on the drawings of 334 children who had been given the Standard-Binet. The scores were correlated and found to range between .699, for five year old subjects, to .849, for 10 year old subjects. She used the human figure drawings as a measure of intelligence. She measured the reliability by a test-retest method wherein the test was readministered the next day to 194 first grade children. The correlation between the drawings was found to be .937.

Machover (1949) wrote that human figure drawings reflect the internal mental picture a person has of self, rather than the actual depiction of the person. Her analysis compared the human figure drawings with individual Rorschach scores of subjects, and her work

reflects her perception that the human figure drawing is a projection of the mental self-image. The emphasis of her study was the use of the human figure drawing with adult subjects, although she did review the work of children (Machover, 1953). The scoring system that was developed as a result of her study is based upon the projective and analytical content of her own orientation, but is not specific in terms of providing a numerical rating that can be used for comparison of drawings to form scales. Further, Machover used several clinical subjects, but did not do the empirical testing necessary for standardization. She observed that the drawings that were obtained from the same subject over a period of time, for adult subjects, were remarkably alike and that the drawings of the subjects appeared to be constant enough to be a personal signature.

Harris (1963) revised the original work of Goodenough by requesting that children draw three figures, a man, a woman, and a picture of themselves. The child is instructed to, "Draw a picture of yourself. Make the very best picture you can. Be sure to make your whole self, not just your head and shoulders." (p. 316) Harris revised the scoring system so that the more detail that a child included the higher the score. The improvement provided a format that is specific, yet easily followed by relatively untrained professionals such as counselors, teachers, and technicians.

Finally, Di Leo (1970, 1973) contributed to the literature on children's drawings. Drawings obtained from individual sessions with children, preschool through high school, were analyzed for content.

He reviewed the work of earlier writers, including Klein (1961). He stated that the initial circle drawn by the child was universal and was drawn by children who had been living in institutions and had never seen the breast of a woman. He agreed with Piaget (1962) stating that the drawing of young children reflects an inner concept of reality of the child's mental representation or mental image. Thus, he wrote that children draw what is remembered at the time. Di Leo wrote that the size of the head is exaggerated because of its importance to the child. The human figure that the preschooler draws, he believed, may not represent only the child's self, but might encompass a concept of the child's perception of people. The child's self is included in the general classification. He accepted the work of Schilder (1950) that the mental self-image is built upon sensory interaction with other people in the environment of the child. He summarized his orientation by agreeing with Machover (1949) that the drawing is a combination of the cognitive, affective, and perceptual states of the child.

In a recent study (Christante, 1981), children in grades one through five were asked to draw a house, tree, person, and self-portrait. Factor analysis was performed on 132 scoring variables. The results indicated that the drawings of children at developmental stages related to their self-perception of important relationships in their environment according to patterns of development.

According to the ecological model used in this research, mental self-image initially includes a concrete sense of body parts

remembered by the child, which indicate importance to the child in sensory interaction with the environment. Accordingly, the mental self-image would develop as the child, actively seeking information, receives feedback from the environment. The sensori-stimulation that resulted from the interaction between the child and the environment would provide the energy for exchange (Paolucci, Hall and Axinn, 1977). The energy is transformed into information via neurological processes in the child and the mental-self image results from the exchange process.

Research On Psychosexual Identity

Psychosexual identity, as postulated in psychodynamic theory, is determined through biologically based drives and manifested through psychic energy. Prior to the age of six, the child is motivated to respond according to a need to maximize pleasure and minimize pain. Pleasure is centered in zones, and these zones direct the human's response to the environment. The zones change according to a developmental sequence and are "of sexual quality" (Freud, 1952). The sexual zones which direct the child are the oral zone at infancy, the anal zone at about the second year of life, and the phallic zone at about the fourth year of life. In order for psychosexual identity to proceed, children must master control over impulses that mandate pleasure seeking behavior. Thus, development would progress as children master oral needs, learn to control bowels and urinate during the anal stage, and during the phallic stage determine and initiate parental contact for psychosexual identification according to some gender awareness.

Erikson (1968) used Freudian concepts in his theory of psychosocial development. The initial stage in Erikson's theory is basic trust versus mistrust and is centered around the mouth; trust develops as one is fed with consistent loving care when hungry. The second stage, autonomy versus shame, occurs during the second year as the child attempts to control bodily functions and gains motor control. The third stage is initiative versus guilt which, while corresponding to the phallic stage, is not centered around genitalia awareness, but around mastery of the environment through active exploration and positive affectional interaction with parents. Although Erikson's theory has eight stages, only the first three relating to preschool years are presented here.

Two instruments which have been used to measure psychosexual development from a psychodynamic framework are the Children's Apperception Test (C.A.T.) (Bellak, 1971) and the Blacky Pictures Test (Blum, 1949). Both instruments measure oral development, anal response, masturbation guilt, fear of castration, and Oedipal or Electra intensity.

The Children's Apperception Test was developed in 1949 by Leopold and Sonya Bellak. The idea for the test was based upon the Thematic Apperception Test published by Morgan and Murray in 1935 and designed for the study of the adult. The C.A.T. consists of ten pictures of animals engaged in interactional behavior in family settings. The child is told that after being shown a picture a story regarding the picture is to be told to the examiner. The two following examples illustrate oral and anal themes. Picture number 1 has young

chicks sitting around a table at which there is a large bowl of food. A large chicken is off to the side of the table, and printed faintly. This card was designed to elicit a response about being fed, fears of siblings receiving greater nurturance, reward or punishment of eating and satisfaction or dissatisfaction with food. Picture number 10 depicts a baby dog lying across the lap of an adult dog. The room in which the scene is illustrated is the bathroom, again lightly printed. The card is believed to lead to stories regarding toilet training, as well as masturbation. The C.A.T. was found by Moriarty (1969) to present verbal difficulty when administrated to preschool children. She found that one-third of the boys tested became restless and found it difficult to finish. In card number 1, containing the chicken representing a mother hen, 44% of the children were uncertain of the chicken's gender and referred to the hen as a rooster. Moriarty suggested that children younger than five would point out concrete details, but were unable to integrate the details into a story. In her conclusions she suggested that children might perform better if familiar with the examiner, but when unfamiliar the situation might produce stress for the child.

The Blacky Picture Test, was developed in 1949 by Blum as a means of obtaining information at deeper levels of personality and is directly related to psychodynamic theory. The Blacky Pictures consist of 12 cartoons depicting a dog named Blacky, and other characters which are "Mama", "Papa", and a sibling puppy named "Tippy". Again, to administer the test the child is told to tell stories about the pictures.

The child is asked a number of questions as, "How does Blacky feel here?" "Is he happy, or unhappy, or not one way or the other?" There is a separate format for boys and girls.

The Blacky pictures require training in projective technique for administration and scoring and researchers have suggested that the test is inappropriate for children (Charin, 1956; Davids and Lawton, 1961; Rabin, 1981). Charen challenged the reliability of the Blacky Test using test-retest criterion. He found the correlation to be .519 for castration anxiety. As that was the highest correlation among the dimensions measured by the test, he concluded the reliability was poor. Rabin (1981) wrote that the Blacky Test is aimed at psychodynamic theory and while it might prove of some interest in research, for clinical work the C. A. T. is not as sexually blatant. Neither the Blacky Test, nor the C. A. T. is useful for children with limited verbal skill.

In the Blacky Test, food aversion would be related to a picture of "Tippy" nursing from "Mama". Rejection of the nursing would be interpreted as rejection of "Mama", while expressing a desire to nurse would be interpreted as <u>oral eroticism</u>. Davids and Lawton used the Blacky Test to study self-concept and food aversion in children. They found that food aversion was not related to the relationship with the mother.

Negative attitudes toward childhood fondling of genitalia during masturbation would result in feelings of guilt and shame (Wood and Ruddock, 1918; Greenbank, 1961), and might be interpreted by the child as a negative attitude toward the child's gender (Money and Erhardt, 1972). Further, Money and Erhardt state that

children can differentiate their gender by age five, and this choice is achieved through a complementary relationship to members of the opposite sex and an identification with members of the same sex, especially the parents. Findings of Lamb (1976, 1978), Holmberg, (1980), and Tauber (1979) indicated that at about three years of age the male child begins to show a greater independency of the mother than does the female child.

Choice of proximity to parent may be augmented through positive or negative reinforcement toward the child or the child's behavior and has been measured according to the quality of the parental interaction with the child. Quality of paternal care as compared to maternal care was studied by Parke and Sawin (1977), and Lamb (1976). Parke and Sawin found that fathers were as sensitive to distress signals from infants as were mothers, although the quantity of contact time was shorter. Lamb, using a seven point Likert scale to measure quality of parental contact, found no significant differences in quality of contact between parents.

Quality of contact was defined as warmth of interaction by Helper (1955), Hetherington and Frankie (1967), Mussen and Distler (1959, 1960), and Sears (1953). Warmth of parental contact was found to facilitate same-sex identification as measured by imitation of the parents' behaviors. Conversely, quality of contact was found to be unrelated to psychosexual choice. A study of 322 gay men and women provided information that two-thirds of the respondents

remembered their relationships with their fathers to be satisfactory or extremely satisfactory and three-fourths perceived their relationships with their mothers to be satisfactory or extremely satisfactory. (Robinson, Skeen, Hobson, and Herrman, 1982).

Mussen and Distler (1959, 1960) found that highly masculine boys perceived their fathers as more punitive as well as more nurturant than did "more feminine boys". Bandura, Ross, and Ross (1963) found that children tended to imitiate models that they perceived to have more power rather than models that appeared to have little or no power. Sears, Rau, and Alpert (1965) found that parental punitiveness feminized both boys and girls. Maccoby and Jacklin (1974) found that parents tended to display more punitive behavior toward sons than toward daughters.

Bandura (1968) has suggested that imitation and identification are synonymous in children since both concepts suggest that the child is matching the behavior, attitudes, and emotional reaction to the model. Maccoby and Jacklin (1974) in a literature review, concluded that preschool children did not have a consistent tendency to select same-sex models for imitation. Slaby and Frey (1975) found that same-sex selection appeared to be related to cognitive development of children, occurring when children could differentiate properties that indicated one gender as compared to the other. Hartrup (1962) used doll play to illustrate that when the models represented a father or a mother preschoolers would imitiate the parent of the same-sex. Fehrenbech, Miller, and Thelen (1979) found that an important factor in imitation was the

consistency of the model in displaying specific behaviors. The greater the consistency, the more the subjects imitiated the behavior of the model. This recent review of literature revealed that research is inconclusive regarding the importance of the gender relationship, as same-sex or opposite-sex, and the effect of quality of parental interaction, as positive and nurturing, or negative and punitive, in the development of the child's psychosexual identity.

Kohlberg (1966) wrote that psychosexual identity is a cognitive process, and that while three-fourths of three year old children can answer correctly the question, "Are you a little boy or a little girl?", correct self-labeling does not indicate that the child understands the physical concepts behind the label. Kohlberg postulated that children based their answers to questions regarding their gender, or sex-typing, on external properties that could be seen. Understanding of physical properties of gender identity is based upon the child's ability to conserve infromation. When the child is able to conserve the child can retain the idea that properties of one kind remain constant, even though other properties change. Thus, when a child is able to conserve the child would not be influenced by external qualities, such as style of clothing or hair length, and would be aware that underlying properties or physical characteristics indicate certain permanent factors.

Several researchers, Emmerich, Goldman, Kirsh, and Sharabany (1977), Gouze and Nadelman (1980), Kuhn, Nash, and Brucken (1978), and Slaby and Frey (1975) studied psychosexual identity as related to gender

consistency. Slaby and Frey (1975) developed a five unit scale that measured gender identity, gender stability over time, gender consistency, and ego-centric wishful thinking measuring the child's choice of change based upon desire of the child. Their findings indicated that the understanding of gender consistency was sequential. Emmerich, Goldman, Kirsh and Sharabany (1977) used a scale similar to the Slaby-Frey instrument, but they asked questions about 'children' other than the subject. Gouze and Nadelman (1980) compared subject responses on gender consistency for self with consistency for other and found that an understanding the permanency of one's own gender preceded an understanding of gender permanency for others. Finally, McConaghy (1979) used a set of questions designed to measure the subject's understanding of the genital basis of gender. She used paper dolls with genitals and clothing that did not obscure the genitals so that the genitals could be seen through the clothing. She found that children could answer questions about the permanence of their gender and the gender of others, but would not relate the answers to genital evidence. In conclusion, prior literature appears to indicate a sequential development in understanding gender as related to self. This ordering, based upon published research, appears to be:

1. An ability to name the gender of self as boy or girl
2. An ability to recognize that ones gender was the same at the time of birth, and will remain so at adulthood.
3. An ability to understand that while appearances might change. gender will remain constant, for self.

4. An ability to understand that one cannot change gender through wishful thinking.
5. An ability to understand that even though another's appearance might change, the other person's gender will remain constant.
6. An ability to understand that one's gender is dependent upon the physical factor of self, including genitals.

The review of literature indicated that the development of psychosexual identity followed a sequential pattern. Therefore, a scale could be developed based upon an integration of scales used by Slaby and Frey (1975), Gouze and Nadelman (1980), Emmerich, Goldman, Kirsh and Sharabany (1979), and McConaghy (1979). Information about the subject's understanding of the psychosexual identity of self would be similiar to, "Are you a boy or a girl?" The subjects understanding of gender identity of others would be asked through the use of pictures or paperdolls. An understanding of gender consistency would be scored through the use of paper dolls that would allow external changes in hair styles or clothing that could be used when asking subjects if the paper doll would change from male to female, or female to male, when wearing opposite gender styles.

In summary, psychodynamic theorists relate psychosexual identity to biological and emotional forces. Social learning theorists relate psychosexual identity to environmental conditioning. Cognitive-developmental theorists relate psychosexual identity to the development of intellectual reasoning.

Research on Interaction Acts

Several researchers have used timed observations to measure the quantity and quality of interaction within parent-child dyads. Quantity of stimulation of young children through interaction with the mother was studied by Clark-Stewart and Hevey (1981) and stimulation of infants through interaction with caregivers was studied by Mayala (1978). Quality of interaction between parent(s) and child has been studied by Dunn and Kendrick (1981), Kendrick and Dunn (1980) and Lamb (1976, 1978).

Clark-Stewart and Hevey (1981) developed a method of recording mother-child interaction on lined notepaper at 10 minute intervals. Mother-child interaction was recorded as: physical contact, proximity, verbal interaction, visual attention, affectionate play, and responsiveness. Abbreviations for the child's behavior were recorded at the right hand side of the paper, while behaviors of the mother that impinged upon the child were recorded on the left. Simultaneous behaviors were recorded on the same line and sequential behaviors were recorded on alternative lines. The subjects were 12 months of age. Clark-Stewart and Hevey found that when parent and child were together visual contact was greater than verbal contact with less physical contact than the two other modalities.

Mayala (1978) recorded caregiver interaction with infants in daycare centers according to stimulation acts and the stimulation acts were classified as language, social-personal, fine manipulative, gross motor, and problem-solving behavior. Mayala recorded interaction in 10 minute intervals beginning when contact was made between the infant

and the caregiver and timing the duration of the act. The timing was done through activation of a stopwatch to establish cumulative time. The stimulation act was a broad description of the sensory modality providing the stimulation, or the auditory, visual, or tactile result of the interaction. During a telephone conversation with Mayala[1], extending the observation time to one hour of continuous recording was suggested, by Mayala, as a method of improving data collection.

Dunn and Kendrick (1981) and Kendrick and Dunn (1980) studied the quality of interaction between mother and first-born child following the birth of a sibling. To record interaction they would began observation 10 minutes after being seated and would record at 10 minute intervals following the format of Clark-Stewart and Hevey (1981). Categories of behavior were precoded as joint play, joint attention, mother initiated, verbal interaction with prohibition and prohibiting incidents. Quality was defined as child positive, child negative, neutral, mother positive and mother negative. When behaviors occurred at the same time they were recorded on the same line. While behaviors often occurred at the same time, the researchers found that their method of recording provided a clear sequence of events. Further, differences in parent response was found for boys when compared to girls.

Lamb (1976) used a 7 point Likert scale to record the quality of contact between children, 12 months old, and their parents. Behavior was coded as attachment behaviors, play and physical contact, vocalization, or proximity behavior and was recorded during 15 minute intervals.

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[1]J. Mayala, telephone conversation, January 26, 1983.

Integration: Leading To An Ecological Perspective

According to a family ecological framework, mental self-image and subsequently psychosexual identity would develop as the child, actively seeking information, receives feedback in the form of energy through stimulation of the senses in interaction with the environment (Andrews, Bubolz, and Paolucci, 1980; Compton and Hall, 1972; and Paolucci, Hall, and Axinn, 1977). This energy would be transformed into information via neurological processes in the child resulting in the formation of mental imagery (Pribram, 1971). As mental imagery of self is accommodated the child begins to compare the mental image of self with the mental image of others (Piaget, 1962). Further classification is achieved when the child can compare properties which are the same for self when compared to same-sex associates and which are different when compared to properties for the opposite-sex (Kohlberg, 1966).

In a family ecological framework it is postulated that children use their senses to gather information. The earliest level of information would be through the sensori-stimulation received from the external environment. For young children, environments can be defined as the human element of parent[1]. Through neurological processes children would form impressions that would ultimately develop into memory and provide the energy to develop a mental self-image leading to development

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[1]B. Paolucci, personal communication, Wednesday, September 15, 1980.

of psychosexual identity. Cognition of self, leading to the formulation of mental imagery is processed at increasingly higher levels of neurological organization (Sommerhoff, 1974). Cognition would be developed through the guidance of auditory, visual, and tactile stimulation and perfected by multimodal sensori-integration (Birch and Lefford, 1963; Freides, 1974; Gottenfried, Rose, and Bridger, 1978). Choice of stimuli would be reinforced by environmental response (Lavaas, Schrieman, Rehm, and Kroegel, 1971).

The capacity to sense, to receive internal and external information is prerequisite to the operation of the system (Paolucci, Hall, and Axinn, 1977). The sensori-stimulation the child receives is dependent upon the feedback received from interaction with the environment. Sensori-stimulation refers to the actual physical event activating the sensory receptor of ear, eye, taste, or skin (Compton and Hall, 1972). The impact of the stimuli would be such that nerve fibers would be activated in the form of impulses traveling via the peripheral nervous system to the brain (Pribram, 1971). Through stimulation of the human senses, matter-energy of environments is "structured and patterned into recognizable concepts that make sense" . . . (Paolucci, Hall and Axinn).

The patterning and structuring of recognizable concepts are the basis for understanding through memory and learning. The coding of information has been likened to a holographic model (Pribram, 1971; Wilbur, 1982). Pribram postulated the stimuli travel in wave patterns called waveforms. Waveforms are consistent for identical patterns,

but vary as people learn to differentiate various aspects as similar or different in specific events. Thus, depending upon what is seen, or attended to, a wave form will vary. The incoming stimuli, as a waveform, travel between neuronal synapses (junctions) in different strengths, shapes, and frequencies. The strength, shape, and frequency can be mathematically calculated as a Fourier Transform and the data computed as a mathematical formula of information. This 'formula' becomes the coding that allows the retention of memory to be coded into an image and the image, back into storage. In order for coding, however, the waveform must be measured within a pattern with other waveforms. Waveforms from sensori-stimulation through various senses merge and as they merge form an interference pattern of interaction, much as a handful of pebbles, thrown onto a pond, would send ripples of waves that merge and create a new pattern of interference. The coding of information, according to the holographic model is dependent upon the point of interference of waveform with waveform, for it is at that point the Fourier Transform is formulated.

The assimilation of sensori information is dependent upon the integration of stimuli from more than one sensori-modality, These could be the visual, auditory, olfactory, taste, kinesthetic, and tactile modalities. Physically, the primary visual, auditory, and tactile areas in the brain are bordered by a series of secondary cortices involved in further processing of sensory inputs after the initial analysis, are believed to be responsible for the processing of increasingly more complex neuronal ensembles (Sommerhoff, 1974).

These secondary areas all border on the central area of the parietal cortex where information from many modalities is thought to be combined with other perceptions and memory and where higher levels of analysis occur.

Tactile information is stored in the parietal lobe of the brain near the parietal cortex. Information about the body schema, or mental image of self is stored in the parietal lobe (Schilder, 1950). Research by Bigelow (1981) indicated that young children, between the ages of 18 to 26 months, were able to learn to discriminate their photographs of self from those of others after comparing the photo image to a mirror image. The mirror image allowed a comparison of both visual and movement cues. The children tested the mirror image by performing repetitive motions while observing their self-image moving in the mirror. After children connected the mirror image with self, they were able to choose the picture successfully. Other researchers have used mirrors while applying coloring to the face of children and observing the children's reactions to their reflections (Amsterdam, 1972; Brooks-Gunn and Lewis, 1975).

The development of the child's perception of body image is enhanced through the interaction of sensori cues including tactile contact between self and others. Lefford, Birch, and Green (1974) found that between the ages of three and five children had difficulty following the action of another when receiving only a visual or a tactile cue. When children could both see their finger and have it touched, allowing the children intermodal sensori stimulation, the

performance of the children improved and they were able to successfully imitiate the model over 85% of the time. The researchers concluded that children between the ages of three and five were still in the process of integrating visual and tactile cues for the organization of perceptual differentiation leading to symbolic representation. This process is essential for the organization of body experiences which would lead to the perception of mental self-image.

This ability to process multiple sensori input was found by Lavvas, Schrieman, Rehm, and Koegel (1971) to be a basic impairment in autistic children. The researchers postulated that because the autistic children were able to process but one stimuli at a time, they would be unable to relate to social reinforcers through interaction with others. The researchers suggested that the manner in which children are trained is through the provision of a larger number of extra cues. The autistic child, unable to attend to only one stimuli at a time, is not able to use intermodal information.

If stimuli are necessary preludes to memory, at least in the preschool years, then the impact of sensori-stimulation between the child and the parent of the same-sex would provide the intermodal stimuli required for the integration of same-sex imagery necessary for the assimulation of information. Conservation of properties of depth, warmth, and physical properties not perceived visually are

necessary for optimal intermodal integration. Vision without other sensory input is insufficient. Researchers, Blanchard and Biller (1971) concluded that when fathers were psychologically absent, non-interacting, but physically present, their eight year old sons were generally deficient in sex-role development and academic performances.

Gender identity requires the comparison of the properties of one's self with the properties of another. Early gender identi-it is based upon the child's classification of gender through external qualities which can be observed. These qualities are exemplified by socially scripted behaviors that are sex-typed as masculine or feminine. Early gender identity is not stable as the child perceives that external changes in clothing, hair style, or activity may result in gender change. A permanent gender identity depends upon the child's ability to classify a physical object, the body with the correct gender (Kohlberg, 1966).

The understanding of gender permanence is based upon a secondary analysis of information. In order to understand gender permanence the child must perceive that while properties are not observable, they remain unchanged. The child must be able to categorize conflicting information, or information relating to differential classification of a specific quality, out of several properties. As the child is able to understand that one property will remain constant while other properties change, the child will have obtained a basis for the understanding of gender consistency, or gender permanence (Piaget, 1962). After age six, the child is able to use

prior sensori-stimulation which has resulted in the formulation of memories. These memories result in representional systems constituting neuronal events that give contextual meaning to the prior stimuli, thus allowing categorization according to several properties (Sommerhoff, 1974).

While neurophysical processes are suggested as being of primary importance to the theoretical orientation of this paper, an important system of variables are ignored if emphasis is only upon the child's impact of the environment without acknowledgement of the reciprocal external environment reinforcement received by the child. Through multimodal processing the child modifies behavior toward desired ends and does not react to stimuli in a preprogramed manner. Therefore, conditioning through the quality of environmental contact, by the parent, provides impact on the child outcomes related to mental self-image (Helper, 1955) and psychosexual identity as suggested in social learning theory (Hetherington and Frankie, 1967).

Psychodynamic theorists suggest that a child's self identity is based upon a sequence of development dependent upon interaction with the parent during certain stages of the child's early childhood. Psychosexual dynamic theorists suggest that at about four years of age children seek parental interaction and identify with the same-sex parent.

In using the ecological model, concepts from psychodynamic theory, social-learning theory, and cognitive developmental theory are integrated into a family ecological model. Integration

of theoretical frameworks was through selection of variables postulated as providing possible explanation toward building a causal model of child-outcomes of mental image of self and psychosexual identity development. The contributions from the theoretical frameworks are: psychodynamic theory, providing impact through choice of the age of the subject for study and emphasis on same-sex interaction; social learning theory, providing emphasis on reinforcement of parent-child contact as measured for quality; and cognitive developmental theory, providing emphasis on sensori-stimulation between parent and child as measured for quantity.

Summary of Critical Findings

Several researchers have studied the human figure drawings of children (Di Leo, 1970; 1973; Goodenough, 1926; Harris, 1963; Koppitz, 1968; Machover, 1949). The human figure drawing is considered by some researchers (Di Leo, 1970, 1973; Koppitz, 1968; Machover, 1949) to be a guide to the child's mental image of self. When children are of preschool age their drawings appear to reflect what is remembered and most important to them. Koppitz (1968) and Goodenough (1926) used large samples of children as a data base. The scoring system developed by Goodenough (1926) was augmented by the work of Harris (1963). Koppitz used a modified version of the Goodenough-Harris (1963) scoring system to determine the Developmental Items. She did not develop a set of norms with four year old children, and the scoring is less precise than the Goodenough-Harris version.

While researchers (Di Leo, 1970, 1973: Piaget, 1962; Schilder, 1950) wrote that the development of self imagery is dependent upon sensory involvement with the environment, there are no empirical studies where quantity of sensori stimulation to the child was correlated to the child's drawing of a self-portrait.

Psychosexual identity is postulated as resulting from biological-emotional forces, social reinforcement, or cognitive development. In each of prior theories, certain variables are postulated to relate to the formation of psychosexual identity, but empirical testing has not incorporated the variables into a theoretical model. There is controversy among research findings regarding the factors that contribute to the development of psychosexual identity. Psychodynamic theorists suggest that psychosexual identity is dependent upon resolution of the Oedipal and Electra phase where one might suffer from penis-envy, if a girl, or fear of castration, if a male. McConaghy (1979) found that children, four years of age, did not give a genital reason when they were asked why others were male or female.

Social learning theorists are in disagreement as to the importance of the quality of parental interaction (Hetherington and Frankie, 1967; Maccoby and Jacklin, 1974; Sears, Alpert, and Rau, 1965). Hetherington and Frankie found that positive-nurturing interaction contributed to the psychosexual identity of female and male subjects, and negative-punitive interaction contributed to masculinity in male subjects. Sears, et al. found that negative

punitive interaction between fathers and sons, or daughters, feminized both boys and girls. Maccoby and Jacklin (1974) concluded that school-aged children did not choose same-sex models more than opposite-sex models, while Hartup (1962) found that preschool children appeared to follow the behavior of the parent of the same-sex more than the behavior of the opposite-sex parent. Slaby and Frey (1975) found that imitation of same-sex models or selective attention to same-sex models was a contingency of gender consistency and the child who understood gender consistency was more likely to choose a model of the same-sex to watch.

Interaction and sensori-stimulation between parent and child have not been studied for correlation to the development of a mental self-image or the development of psychosexual identity. Researchers studying interaction have used techniques that measured actions that were based upon the stimulation of the senses, however. The format of studying interaction between parent and child is through observation. Observation studies have used intervals of time and a period that extended beyond an hour (Shepperson, 1981). Observation has been structured (Shepperson) and unstructured (Lamb, 1976; Mayala, 1978). Generally observation is recorded according to precoded categories (Clark-Stewart and Hevey, 1981; Dunn and Kendrick, 1981; Kendrick and Dunn; 1980; Lamb, 1976; Mayala, 1978; and Shepperson, 1981).

The ecological model provides an integrated model (Andrews, Bubolz, and Axinn, 1980) wherein variables from other disciplines are incorported into a family ecological model. In the ecological model

energy is converted to information via sensori-stimulation interaction with the environment (Paolucci, Hall, and Axinn, 1977).

CHAPTER III

METHODOLOGY

In this research the effects of sensori-stimulation between same-sex and opposite-sex parent-child dyads on the child's mental self-image and the development of psychosexual identity were measured. Sensori-stimulation was measured for quantity of auditory, visual, and tactile contact between the parents and the subject in seconds of contact time. Parental contact was measured for quality according to a five point Likert Scale for each parent-child interaction. Mental self-image was measured through the Goodenough-Harris Drawing Test, wherein the subject was asked, "Draw a picture of yourself." Psychosexual identity was measured through a Gender Consistency Scale.

Sample Selection

The subjects in this study were 36 children, 18 boys and 18 girls, aged four to five years, and both of their parents. Criteria for selection were parental availability and age of the child. The population from which the sample was randomly selected was the Flint Area Parent-Child Nurseries (FAPCN). The philosophy of the nursery program is learning through exploration, rather than directed teaching. The parents of the children in the FAPCN program are encouraged to allow their children the freedom of being active participants in the learning process and the children are encouraged to explore activities with a minimum of structure. In prior observation of FAPCN parental involvement some parents appeared to interact through visual and auditory modalities

with little tactile interaction, while other parents used a high level of tactile interaction. Thus, prior observation by the researcher indicated variability in the amount of parental sensori interaction within the FAPCN population. Further, there were 12 different parent-child co-operative programs within the FAPCN program with children four to five. Within the FAPCN there was a variety of income and educational levels of households. The program had children of various ethnic backgrounds.

During the Spring the researcher met with the teacher consultant of the FAPCN to present the proposal of study. A request was made to the FAPCN board to select the sample from parents and children enrolled in the Winter of 1982 and those planning to enroll in the Fall of 1983. After a review of the hypotheses and the methodology, the teacher consultant agreed to present the request for selection of the sample to the board. The board reviewed the request in May, 1983, and granted permission of the selection of the sample. A list of the enrolled children from each center was given to the researcher. The list contained the child's name, parents' names, birth date of the child, home address, and telephone number. During the summer of 1983, another list containing information about children to be enrolled in the Fall was added. The lists were compared to avoid duplication of names, and the children were numbered 1 to 231. Using a table of random numbers (Kerlinger, 1973), names were selected until 18 boys and 18 girls were selected.

After the random selection of names a letter was sent to the child's parents giving the purpose of the study and requesting cooperation (see Appendix A). Approximately one week after the date the letter would

have been received, parents were contacted by telephone and upon parental acceptance of participation, an appointment was arranged for observation and interview. A random selection of 77 names resulted in acceptance by 41 families. The nonacceptance of randomly selected families created a possible effect of selection bias so that the families who participated were not perfectly representative (Babbie, 1973) of the entire population of FAPCN parents. The effect of the selection bias might have been toward a sample of parents who were more comfortable with parenting skills, more comfortable about research intrusion, or other unknown factors. Of the 41 families, five families were found to be unsuitable. One child was unable to speak and could not hold a pencil. One child gave nonsensical answers and became uncooperative during the interview, consequently, the answers could not be coded. In the third case, the father left after 30 minutes of observation. In two families the father was not present at the scheduled time of the appointment. In one of these instances, the father could not reschedule as he worked at a business that required that he be available at any time. The the other family the researcher rescheduled the appointment, and upon both visits found one parent was not present and the other parent was vague about the reason for absence. Because it appeared that the family was ambivalent about participation, the researcher decided to select another family randomly. Data collection began September 1983.

Description of the Sample

The total sample consisted of 36 families from the Greater Flint Areas. There were 18 boys and 18 girls in the study. Both parents were

at home at the time of the study.

Geographical Area and Setting

The sample families lived in Flint, Michigan and the surrounding communities known as the Greater Flint Area. The homes were in rural and urban areas. Five families lived in a rural area, two families lived in apartments in densely populated areas, three families lived in homes in urban areas, and twenty-six families lived in suburban areas.

Age of Children

The children in the participating families were between 49 and 63 months. The mean age for the entire sample was 54.36. The mean age of the male children was 54 months and the mean age of the female children was 54.72.

Ethnic Background

The sample was predominately white. One child was Native American and one child was black, both were female subjects. Of the thirty-six children, thirty-four children were white.

Educational Level of the Parents

Educational level of the family was determined by asking the parents to give the educational level attained by the parent with the greater number of years of formal education (see Table 1). The parents were not asked about preschool or kindergarten experience. The level of education was over-representative of individuals with higher levels of education when compared with the National Census Data for 1981.

TABLE 1 --Comparison of Years of School Completed by Parent with More Formal Education, with 1981 National Census Data.

Level	Sample Number	Sample %	Census %	with	Total years
N = 36					
12 years of School (H.S.)	3	8.3	37.8		
1 year college	1	2.8			
2 years college	10	28.			
3 years college	3	8.3*	15.1		15
Bachelor Degree	7	19.4	19.2		16
1 Year Post Bachelor	1	2.7	17.1		16+
Master's Degree	7	19.4			
Post Master's Degree	3	8.3			
Doctorate	1	2.8			

Sample Mean	Census Mean
15.63	12.5

S.D.
1.157

* In the research sample the years of college are broken down into the specific time in number of years (1 - 3), while years of college, less than 4, were grouped together for the National Census Data.

Occupational Level of the Parents

The occupational level of the family was determined by the occupational level of the father according to criteria as classified by the National Census Bureau. The sample was not representative of occupational levels as determined by the 1981 National Census Data, and the sample was over-representative at two levels of employment: professional and craftsmen (see Table 2). In this sample all fathers were employed. Four mothers were employed full time and nine mothers, part-time. Information of the income level of the family was not collected.

Consent For Study

Approval of the proposal was granted by the doctoral committee in the summer of 1983. Prior to that date, consent had been obtained from the Flint Area Parent-Child Nurseries. Consent forms were signed by each of the subjects' parents (see Appendix A).

The Research Design

This study was a field study based upon structured observations of the subject and parents. The research was conducted in the home of the subject when both parents were present. In this research the independent variables were not manipulated by the researcher. The research was explanatory in design, as the primary objective was to measure the effects of sensori-stimulation between parent and the child on the development of the child's mental self-image as a prelude to the development of psychosexual identity in the subject. The unit of analysis was the child.

TABLE 2 --Comparison of Occupational Level of Father of Subject with Employed Persons of 1981 National Census Data.

Occupation	Level	Sample Number	Sample %	Census %
N = 36				
Farmer		2	5.5	8.3
Professional	10	13	36	16
Self Employed	09	2	5.5	
Administrators	08	2	5.5	11.4
Salesworkers	07	1	2.77	6
Clerical	06	0	0	18
Craftsmen	05	11	30.5	12.6
Semi-skilled	04	2	5.5	10.5
Delivery Men, Transport	02	1	2.77	3.4
Laborer	01	2	5.5	4.5
Sample Mean 6.86				
S.D. 3.04				

Selection and Description of the Instrument

Five instruments were used in this research. The instruments were a Demographic Sheet, an Observation Sheet, a parent interview called the Parent Report, the Goodenough-Harris Drawing Test, and the Gender Consistency Scale. Different instruments were used with each family member (see Figure 2). Administration required approximately 1½ to 2 hours of family time. The instruments were enclosed in separate envelopes for each family. Envelopes containing forms for families of male subjects were numbered in odd numbers and envelopes containing forms for female subjects were numbered in even numbers. The Observation Sheets were not included in the packet, but were padded in quantities of 100 sheets.

Family Member	Instruments				
	Demographic Interview	Observation Sheet	Parent Report	Goodenough-Harris	Gender Consistency
Child		X		X	X
Mother	X	X	X		
Father	X	X	X		

Figure 2 --Illustration of Instrument Usage with Family Member Where X Prepresents Usage.

Demographic Sheet

The demographic sheet was used to collect data about the age of the child, the occupational level of the father, and the number of years of formal education of the parent with the greater number of years of schooling (see Appendix C). It was administered

shortly after entering the home of the subject. It required about five minutes of time and permitted the child to observe the parents talking and interacting with the observer. Following the collection of demographic data, the observation period began.

Observation Sheet and Setting

Timing the observation period was done through the use of an electronic Westbend Timer (pictured in Appendix B). The timer was set for one hour. The number of seconds during the hour of observation was 3600, however, the highest number displayed on the timer was 5960, or 59 minutes and 60 seconds. Prior to the collection of data the researcher spent 36+ hours at an amusement park and a shopping center timing parent-child interaction and recording the data on the Observation Sheet. The practice was extremely important and if the study is replicated would be a necessary measure of preparation. The timing of interaction required practice to make the timing precise. Practice improved performance.

The Observation Sheet was designed from the prior research of Clark-Stewart and Hevey (1981), Dunn and Kendrick (1981), Kendrick and Dunn (1980), Lamb (1976), Mayala (1978), and Shepperson (1981). Clark-Stewart and Hevey recorded behavior between parent and child that occurred simultaneously on the same line and sequential behaviors were recorded on alternate lines. Shepperson used a structured observation period lasting over one hour and coded information that occurred during the observation without interval interruption. Lamb (1976)

recorded the quality of child responses to the parent and the quality of parent response to the child. Quality of response was recorded according to a 7 point Likert scale with values ranging from 1 - very negative to 7 very positive. Clark-Stewart and Hevey (1981), Dunn and Kendrick (1981) and Lamb (1976) carried out unstructured observations at the home of the child. Clark-Stewart and Hevey (1981) and Dunn and Kendrick (1981) studied mother-child interaction. Lamb (1976) studied the interaction of both the mother and father with the subject and the home observation was done at a time when both parents could be at home.

The setting for observation was determined through the format of Lamb (1976) wherein both parents were observed during the same period of interaction time with the child, and during a period of time that both parents could be present. Parents in this research, were asked to be home at the time of the interview, and were told that they might continue their routines, although it was important that they be near enough to the subject to provide aid if the youngster wanted the parent interaction. The parents were informed that the observer would not be able to assist the subject, but would be concerned with recording the child's sensory interaction. As a large box of toys was placed at the center of the area of observation, and parents were informed that the child could use the toys as the child wished, parents assumed that the recording of data was based upon interaction with the toys. Parents were informed that they were free to watch, play, work, or, to do as

they felt most comfortable. The room generally used was the family room or living room. The child's bedroom was not used for observation. In the prior research, as above, the observation period appeared to range from 1 to 1½ hours. Following the method used by Dunn and Kendrick (1981) a choice was made to limit the home visit to two hours with observation starting 10 minutes after the observer was positioned for study. The parents were asked to schedule the visit for a time when there would not be activities as eating, napping, or bathing, and the parents were asked to limit visitors and telephone conversations.

As in the Shepperson (1981) study, the observation was structured. In this research structure was provided by using a box of toys which provided a boundary for the child's interaction, thus, keeping the child in the area of observation. The toys used in the research were chosen to entice parental involvement and to provide a vehicle for sensori-interaction. The toys chosen were:

Doubleloop Coaster	A mechanical toy that is battery operated. Cars travel around loops in a manner similar to an amusement park ride. This item was selected to draw into interaction parents interested in mechanical items.
Mickey Mouse Musical Machine	An auditory toy. This battery-run organ has a two octave key-board. The toy provided opportu-nity for exploration of musical sounds with parents who share similar interests.
Frantic Fingers	A tactile toy. This was used with the original parts that were of different shapes, and

	could be visually matched to cards for tactile-visual comparison. Other items were added as well: A smooth stone, a sandpaper block, cotton balls, copper scrubbing pad, a shell, and feathers.
A Kaleidoscope	A visual toy. The child could take off the end and the home could be viewed as a kaleidoscope of color.
Puppets	A puppet family, that facilitated auditory interaction. The puppet family consisted of a mother, father, boy, and girl puppet.
The Mother Goose Game	A toy for verbal interaction and visual potential. The game was selected because the nursery rhymes are familiar to many children.
Playschool Village	A construction toy was chosen to provide the interaction through the building of a village. The toy provided a focal point for individual or interaction with parents. The village was easily assembled and consisted of a block set with store fronts, roof tops, planes, and an airport, trucks and a train.
Where the Wild Things Are*	Auditory interaction through the reading of the story was provided through the books, as well as potential for tactile and visual interaction.
The Hungry Thing*	
Leo the Late Bloomer*	
Can I Keep Him*	

The box of toys provided enough variety that the subjects remained at the site of observation for the period of one hour.

*See Bibliography, under children's section for author and publisher.

The Observation Sheet (see Appendix B, page 184) was designed with three headings; gender relationship, quality, and quantity. The upper two-thirds of the sheet was used for recording and the bottom one-third was used to summarize the data. The sheets were padded with 100 sheets per pad. The padding provided a source of sheets available to the observer as well as support for recording. The column to the left of the sheet was used to record gender relationship and was divided into subcolumns of same-sex or opposite-sex. The gender relationship was recorded according to each stimulation act within parent-child dyads. When there was continuous interaction between parent(s) and child and there was insufficient time to record the relationship in the column, an m for mother, and an f, for father was recorded next to the seconds of time of the specific sensori-stimulation. After the observer left the subject's home and within 24 hours, the columns marked same-sex or opposite-sex were scored according to the m or f recorded during the observation period. The middle column was used to record the quality of contact according to a modified version of the Likert scale used by Lamb (1976). The quality of contact was scored with a check, or dot, as; very negative, negative, neutral, positive, or very positive. Each interaction was scored. If there was continuous interaction between parent-child dyads, quality was scored when the quality changed. Thus, if quality during five sensori-stimulation acts was positive, the last four were not recorded at the time of observation and the column remained blank until the data were tabulated. At a change of quality to a higher or lower point in the scale, the change was recorded at the time of the sensori-stimulation act.

Quantity of sensori-stimulation was recorded on the right side of the Observation under the headings auditory, visual, or tactile. The time was recorded at the time the stimulation started and the time the stimulation stopped. If two senses were stimulated at the same time, one sense was recorded and a mark was made in the column representing the other sense. When stimulation ended for each sense the ending time was recorded. When both parents interacted with the child at the same time an m and f was recorded next to the sense stimulated. The time the interaction ended was recorded, therefore, if a parent continued beyond the time the other parent had ended contact, the ending time was recorded on a sequential line. If the stimulation was too brief to record in seconds a check was made and the checks were added as a second of time (see Appendix B, page 185).

The number of seconds during the hour of observation was 3600, however, the highest number displayed on the timer was 5960, or 59 minutes and 60 seconds. To eliminate the possibility that a parent might be positively reinforced to interact with a child, if it was noted that interaction resulted in observer recording, nonsense numbers were recorded when parents were not interacting with the subject. All nonsense numbers began with an eight or a seven (see Appendix B, page 186, for an example of the recording of nonsense numbers). This format became important, as parents often observed the observer. On one occasion a parent sat beside the observer and watched the recording and because there was no parent-child interaction, the numbers that were recorded were numbers that began with the code 8.

Parent Report

The parent interview, or Parent Report, was administered to parents after the observation period. The report had a separate, but parallel form for the child's mother (see Appendix C, page 194) and the child's father (see Appendix C, page 202). Questions about parental interaction with the subject were repeated for three periods of time in the child's life: infancy, toddler (one to three years) and the present period of time. The division allowed parental differentiation in order that parental absence, parental change in work scheduling, or change in caregiving responsibilities could be determined. Parents were asked about their involvement with the child at the time of the child's birth. Stimulation acts were classified according to the type of interaction as suggested by Mayala (1978) and Lamb (1976). Further, each category of interaction was divided into the sensormodality of auditory, visual, or tactile interaction.

Categories suggested by Lamb (1976) provided purpose for action as suggested in question 17 (see Appendix C, page 195). "When (Child's name) was an infant and needed bathing, how often were you the one to do the washing, cleaning, or bathing?" The categories used in the Parent Report as providing the purpose of interaction were caregiving, play, discipline, and affectional interaction. Content of questions were based on Mayala's observations (1978). Instances of caregiver interaction were used to provide examples of behavior representative of caregiver, or parent, interaction with children.

Examples borrowed from Mayala, in questionnaire format are:

Caregiver scolds, reprimands infant (page 41).	"When Child's name needs discipline, how often do you scold, yell, or talk ...."
Caregiver cleans, washes, bathes infant (page 42).	"When Child's name needs to be bathed, washed, or cleaned, how often do you do this?"
Caregiver demonstrates finger play (page 41).	"How often would you use imitation, finger plays, gesturing, dancing, or do things that would have your child watch you?"
Caregiver gives infant eating utensils, places food in front of him (page 65).	"When Child's name was a toddler how often did you feed the baby (with a spoon in a baby chair).

The items in the Parent Report were grouped such that each category had a question related to a specific sensory modality. Under the category "caregiving" the questions asked were:

Tactile	"When Child's name was an infant and needed bathing, how often were you the one to do the washing, cleaning, or bathing?"
Visual	"When Child's name was an infant how often was (his/her) crib or chair, placed where you could be seen?"
Auditory	"When caring for your child how much time would you talk, sing, hum, or coo to your child?"

The parental responses on the Parent Report were scored as: 1 - never, 2 - rarely, 3 - sometimes, 4 - most of the time and 5 - all the time (see Appendix B, page 187). Each sensory modality had a possible score of 1 - 80, as questions 13, 14, and 15, were related to the period following the infant's birth, a period hypothesized to be instrumental

in the imprinting of parent-child attachment behaviors (Greenberg and Morris, 1974; Klaus and Kennell, 1970), and the scoring was weighted for impact in comparison with the other three periods of time in the child's life, as measured in the Parent Report.

The Goodenough-Harris Drawing Test

The Goodenough-Harris Drawing Test (Harris, 1963) was used to measure the child's perception of self, or the mental self-image. Di Leo (1970, 1973) and other researchers (Goodenough, 1926; Goodenough and Harris, 1963; Koppitz, 1968; Machover, 1949; and Schilder, 1950) believe that children's drawings can be an accurate representation of the child's self-perception.

The Goodenough-Harris Drawing Test was administered to the child after the interview with the parents. Generally, the child continued to play during the interview with the parents and after watching parental interaction with the researcher appeared to be relaxed when it was time to be interviewed. The Goodenough-Harris was administered before the Gender Consistency Scale so that the child's perception of self was not influenced by the materials used with the Gender Consistency Scale. The administration of the test followed the guidelines in the Harris Manual (1963). Children were asked to "Draw a picture of yourself. Make the very best picture you can. Be sure to make your whole self, not just your head." Children were given a pencil designed to be used by young children.

The Goodenough-Harris Drawing Test has been found to have a rescoring reliability of .90. The split-half reliability was .89 when administered again after an interval of a week. Readministration

of the test on consecutive days revealed no significant difference in scores (Anastasi, 1982).

In this research scoring was done according to the format in the Harris Manual. The manual provides a concise method of scoring with a specific format for scoring male drawings and a specific format for scoring female drawings. The drawing score provided the mental self-image score for the subject.

Gender Consistency Scale

The Gender Consistency Scale used in this research was a composite of the scale developed by Slaby and Frey (1975), with additions suggested by the research of Nadelman and Gouze (1980) and McConaghy (1979). The purpose of the instrument was to measure the level of cognitive understanding about the permanent qualities of gender development. According to Kohlberg (1966) the particular effect of male or female models in interaction with young children is dependent upon the developmental level of the child's ability to conserve the properties that determine gender. Thus, the gender scale is designed to measure the child's awareness that even though external appearances might change, a physical effect that might remain hidden would still remain constant. Children were asked a series of questions that would measure their understanding of gender. The first questions were those designed to measure the child's ability to determine whether they were male or female, and whether pictures of people were male or female. The next series of questions were about changes that might occur over a period of time and the response of the subject indicated

understanding that a person would remain the same gender throughout the period of life from infancy to adulthood. The next series measured the child's ability to understand that gender remained constant despite a change in clothing that represented the opposite gender. Finally, the last set of questions was related to the ego-centric thinking patterns in young children and the question-set asked if the child could change gender if change was wanted. Based upon the work of Gouze and Nadelman (1980), the Slaby and Frey (1975) Scale was augmented through the addition of questions designed to measure an understanding about gender consistency of others. Finally, a series of questions was asked in order to elicit from the child enough information that the interviewer would be given a physical explanation as to the physical properties of gender (McConaghy, 1979) (see Appendix C, pages 211-214).

Paper dolls from The Neighbor Kids (see Appendix D) were used with the scale. The dolls had male and female 'children' in ethnic pairs of black, white, oriental, and Spanish characteristics. The dolls had clothing and artifacts that were stereotypically masculine or feminine. Pictures of adult men and women were used (see Appendix D, Figure 9).

Prior to the introduction of child responses on the Gender Consistency Scale, as a measure of scoring psychosexual identity, the augmented model used in this research was rescaled through the Guttman scalogram analysis (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975). The rescaled model, used in this research, was found to have a coefficent of reproducibility of .9753. The rescaled model could be considered a valid scale with the reproducibility above .9 (Nie, et al.). After administering the Gender Consistency Scale, the toys were replaced into the box and the interview was completed.

Description of the Variables
Conceptual and Operational Definitions

This section will provide definitions of the major terms and variables used in this research. The variables are defined conceptually followed by the operational definitions. Operationalization of the variables was measured through the Observation Sheet, Goodenough-Harris Drawing Test, Gender Consistency Scale, and Parent Report. The independent variables are sensori-stimulation within parent and child dyads of the same-sex or opposite-sex. Specific modalities of sensori-stimulation are visual, auditory, and tactile senses. Parent-child interaction was measured for quantity of sensori-stimulation and quality of parental contact with the child. Intervening variables are age of the subject, educational level of the parent with the greater number of years of school (kindergarten and preschool excluded), and the occupational level of the subject's father. Dependent variables are Mental Image of Self and the developmental level of Psychosexual Identity.

Independent Variables

Sensori-stimulation refers to the actual physical event or property activating a sensori-receptor in the child as a result of parent-child interaction. In this study sensori-stimulation refers to the stimulation of auditory, visual, or tactile receptors. The data were collected according to the individual and intermodal contribution of the sense(s). To measure sensory contribution on the dependent variables the Observation Sheet was the instrument

used to measure causal effect. The Parent Report was used to measure parental perception of interaction. Sensori-stimulation was measured in Quantity of time according to the number of seconds of contact between parent and child. Each contact was measured from the time of onset of interaction to the end of the sensory contact. Each interaction was recorded on a separate line, although simultaneous behaviors between parent and child would be recorded on the same line as suggested in the research of Clark-Stewart and Hevey (1981). The sensori stimulation was totaled according to the individual sense by the coder. To obtain the intermodal contribution of all senses, auditory, visual, and tactile, a multiplicative model was used. The multiplicative model allowed an index of irregular variation more precisely than would additive models. An additive model of the three modalities would result in a high mean score and would fail to depict the quantity of sensori-stimulation with one sense high quantity and the quantity of another sense low. The individual effect of contribution and fluctuations of quantity between modalities would be lost to analysis. The range of values of each observation was from 0 seconds of stimulation to 3600 seconds of stimulation. Because a lack of contact of a stimulus would result in a 0, a value that would eliminate the effect of other sensori-stimulation, in the multiplicative model a 1 was used to indicate that there was no sensori contact of a specific modality. The multiplicative model was used for intermodal contribution on both the Observation

Sheet and the Parent Report.

Quality of Contact refers to the positive, negative, and neutral characteristics of the interaction between the parent and the subject. This variable was measured through the observation Sheet. Quality was measured by a five point scale similiar to that described by Lamb (1976). Each point is behaviorally defined:

1- Very negative, the interaction resulted in the subject wincing or crying and the parental response, demeaning, harsh or abusive.

2- Negative, the interaction between parent and child results in the child frowning, withdrawing, losing interest in the activity or showing sadness, and the parental response was critical, restrictive without cause, or ignoring a request for help or aid.

3- Neutral, neither parent nor subject display emotion or respond to stimuli that are received via parent-child interaction.

4- Positive, the child responds with interest, smiles, and the parent provides supportive interaction.

5- Very positive, the child laughs, pleasure in the interaction is displayed, and the parent provides supportive interaction while increasing the subject's understanding through feedback in response to the child's level of play.

Quality was measured according to each stimulation act within parent and child dyad and for every sensory contact. The quality scores were averaged for total interaction within same-sex and opposite-sex dyads according to the gender relationship.

Auditory stimulation is the stimulation of the cochlea of the inner ear through impact with sound. Auditory stimulation was

measured for quality and quantity when the child was affected through verbal interaction with either the same-sex or opposite-sex dyad. The quantity of observed interaction was recorded under the heading Quantity at the far right of the Observation Sheet in the column marked Auditory (see Appendix C). To record the quantity of auditory contact from the Parent Report the score was compiled from questions 14, 19, 24, 27, 30, 35, 38, 41, 44, 49, 50, 54, 57, and 60. Set A was the (Parent Report) form developed for use with the mother of the subject and set B was the (Parent Report) form used with the father. All values of quantity of interaction ranged from 1 - never, to 5 - all the time. The interview was designed so that scoring all auditory interaction was done through placement of a circle over the value for quantity in the first column appearing toward the left hand side of the Parent Report.

Visual stimulation is the act of looking, gazing, observing, staring, or having eye contact. In this research visual stimulation was measured when there was evidence that the child was having eye contact with the parent and was recorded in seconds of time when the subject gazed at, observed, or looked at the parent. Visual stimuli were not recorded when the parent looked at the child unless the child was looking at the parent; thus, unless the retina of the child was stimulated through contact with a parent, no contact was recorded. The quantity, according to seconds of time, was recorded on the Observation Sheet in the middle column, visual under the heading Quantity. To record the quantity of contact of visual

stimuli, as recorded during the parent interview, the score was compiled from questions 15, 18, 20, 22, 25, 28, 31, 39, 43, 45, 48, 51, 55, 58, and 61. The column used in scoring visual stimulation on the Parent Report was the second column to the right of the page. Directions for tabulation are the same as presented above for scoring auditory stimulation (see Appendix C).

Tactile stimulation is the act during which one is touched, held, stroked, hit, or all acts in which one part of the body is in contact with another. In this study tactile stimulation was measured when the subject was in contact with the parent of either the same-sex or opposite-sex. Tactile stimulation was measured for quality and quantity. Quality was measured as described under Quality. Quantity of tactile stimulation was measured in seconds of time with the time recorded on the Observation Sheet at the far right of the sheet in the column titled Tactile, under the heading Quantity. In the Parent Report tactile stimulation was measured through questions: 13, 17, 21, 23, 26, 29, 32, 39, 40, 42, 46, 47, 52, 53, 56, and 59. The column used in scoring visual stimulation on the Parent Interview was the column to the far right of the Interview Sheet. Directions for the tabulation are the same as presented above for scoring auditory stimulation (see Appendix C).

Dependent Variables

The following section will provide definitions of the major dependent variables. The dependent variables are the Mental Image the child has of self and the level of Psychosexual Development.

The mental image of self is the mental representation, or memory, the child has of self. Koppitz (1968) illustrated that the drawings of children appeared to represent the child's internal model of self, rather than to represent a logical realism. Di Leo (1973) wrote that the drawing of one's self is based upon the awareness of one's own body. Schilder (1950) wrote that there appeared to be a continuous interchange between one's own body and the body image of others. To measure the child's self perception of self image, a drawing test was used. While there is debate regarding children's drawings, as related to self-imagery, Di Leo (1973) wrote, "The child's maturing concept of body is reflected in the increasing complexity of his/her human figure drawing." (p. 20)

To measure the child's concept of self the Goodenough-Harris Drawing Test was given to the child. This instrument was selected because scoring has been standardized and directions are uncomplicated. In this study subjects were given the standardized form enclosed in a frame so that they were not distracted by the scoring format. The subjects were told to "Draw a picture of yourself. Make the very best picture you can. Be sure to make your whole self, not just your head." If the child appeared uncertain the interviewer repeated the question, again asking the subject to start with the head. Further directions were not provided. After the subject finished, the interviewer asked the child to name the parts on the drawing while the parts were written on the drawing. During the period that the child was drawing, the child was separated from the parents. The scoring of the picture was done

according to directions in the manual (Harris, 1963).

Psychosexual Development of Identity refers to that part of self development wherein one comes to know the self as female or male (Abelson, 1979; Emmerich, Goldman, Kirsh and Sharabany, 1977; Gouze and Nadelman, 1980; Marcus and Overton, 1978; McConaghy, 1979; Slaby and Frey, 1975; and Storm, 1979). Cognitive development theorists suggest that psychosexual development of identity is based upon the child's intellectual development and progresses from an understanding of gender identity of self to an understanding of the constant properties of gender permanence. According to cognitive theorists, the child believes that any external changes in self or others, such as clothing or hair style, representing a style specific to the opposite sex, if chosen would result in gender change. This measure of psychosexual development focuses upon measures of gender identity, gender stability, and gender consistency. The development of Psychosexual Identity is believed to follow a sequential pattern such that Gender Inconsistency is the first stage, Gender Identity for self is second, Understanding the Stability of Gender over time is third, Gender Consistency of Self follows, and Gender Consistency of Others precedes the final stage during which time the child recognizes that Gender is based upon a physical dimension that can not be changed by external impingements. To measure Psychosexual Development of Identity a Gender Consistency scale was developed based upon the prior work of Slaby and Frey (1975), Gouze and Nadelman, (1980) and McConaghy (1979). Subjects were shown pictures and paper dolls were used to illustrate external change

in appearance. The female form was form A (see Appendix C, page 211) and the male form was form B (see Appendix C, page 213).

In this research Gender Identity was determined by the questions: 9 and 9b - "Are you a boy or a girl?", and by "Are you a (opposite sex asked)?" To measure the child's understanding of external appearance as related to gender, children were shown pictures of adult men and women, and paper dolls of a man and woman and boy and girl. When shown the dolls they were asked questions as, "Is this a girl or a boy?". To measure Gender Stability over time the subjects were asked, "When you were a little baby were you a little girl, or a little boy?", and "When you grow up, will you be a daddy or a mommy?" Gender Consistency of self was measured by questions as, "If you wore boy's clothes (form A, for girls), would you be a girl or a boy?" and, "If you played girl's games (form B, for boys), would you be a boy or a girl?" To measure Ego-centric thought, as a basis for response, the subjects were asked "Could you be a (opposite sex) if you really wanted to be (opposite sex)?" The questions from 1 through 14 were from the scale used by Slaby and Frey (1975). Additional questions were added to the scale and the subjects were asked, "Would you want to be a boy," adding a measure of Gender Acceptence. To measure Gender Consistency for Others the subjects were shown a paper doll and were allowed to observe external change to the doll as a clothing change was made. The subjects were asked, "This is a little girl. If I put this boy outfit on, will she be a boy or a girl?" If subjects answered all questions correctly, they were asked, "Why can't (he/she)

become a (boy/girl)?" A correct response would be scored a 1 if the child alluded to the Physical reason as did the subject who responded by saying, "Because he was borned that way." If subjects were able to give a physical reason indicating a Genital basis for gender identity the child would have scored a 2. A reduced reproduction of the paper dolls and pictures used with the Gender Scale are found in Appendix C. In order to score a 1 for each set the subject would have to pass all questions in that set correctly. If they were unable to answer a portion of the set, a 0 was scored. There were nine sets of questions in the Gender Consistency Scale used in this research.

Intervening Variables

The research by Koppitz (1966) indicated that the child's self-portrait improved and contained greater detail as the children developed in one years time. The children in this sample were from 49 months to 63 months, a range of 14 months. In this research, the score of the child's mental image of self was measured for effect of age.

Slaby and Frey (1975) and others (Abelson, 1979; Emmerich, et al. 1977; Gouze and Nadelman, 1980; Kohlberg, 1966; and McConaghy, 1979) found that there was a sequential development in Gender Consistency Scores as children aged. In this research, the score of the child's mental image was measured for effect of age with the partial coefficient of determination,

as was the Gender Consistency Scale.

To measure age, the age of the subject was recorded according to the date of birth by asking the parent(s), "Now, can you give me the date of birth of Subject's Name?" The age was recorded to the nearest month (see Appendix A, Demographic Interview, questions 1 and 2).

To determine the highest Level of Education among the parents, parents were asked to give the highest number of years completed by the parent having the greatest amount of education (see Appendix A, questions 8 - 10).

To determine the Occupational Level of the family, the father's occupation was asked. The majority of the subjects' mothers were not employed and only one-ninth were working full time. In order to curtail the number of variables in this research the occupational level of the father was considered as determining the occupational status for the household. To determine occupational status several questions were asked, "What is your place of employment, (Appendix A, question 5). The answer to question 6, "What is your occupation, and what is it that you do?", was coded according to the levels in the 1981 National U.S. Census Data classification.

The intervening variables, Age, Educational Level of the parent, and the Occupational Level of the father, were used as predictor variables to determine causal relationships of effect of dependent variables.

Data Analysis

Research data were analyzed on the Control Data Corporation Model 6500 Computer at the Computer Laboratory of Michigan State University. The analysis of data was done through the use of programs drawn from the Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975), with consulting assistance from the Consulting Services at the Computer Center. Programs drawn from the SPSS package included: Pearson Product-Moment Correlation, Guttman Scaling, and Multiple Regression.

Statistical Methods and Assumptions

The statistical methods which were used in the analysis included: Simple frequency distribution, Paired T-Tests of Means, Guttman Scaling, Pearson Product-Moment Correlation, Multiplicative Computation of Interaction, the Hierarchical and Stepwise method of Multiple Regression and Path Analysis.

Simple frequency distributions

The subprogram (SPSS) computed simple and cumulative frequency distributions for the following variables: total sensori-stimulation; auditory stimulation; visual stimulation, tactile stimulation; total quality of contact, quality of contact with the parent of the same-sex, quality of contact with the parent of the opposite sex; parental report of sensori interaction according to: total count, auditory count, visual count, tactile count; parental level of education, head of the household occupation, mental self-image score, psychosexual development of identity score. The frequency format provided a

simple frequency count, the relative percent of frequency, and a cumulative percentage of the interval data. The independent variables quantity of sensori-stimulation for specific sense modality and for multimodal interaction as observed and reported were measured as a continuous interval variable. That is, the variable had a numerical score that could lie along any point on a continuum between the lowest and highest value as measured from the sample. The independent variables educational level of the parent, head of the household's occupation, mental image score, and psychosexual identity were discrete interval variables. That is, the value of the variable represented an equal interval or unit for each increase in score. The independent variable, quality of parental contact was an ordinal variable. However, for each subject the quality score was added for each stimulation act. The sum of the scores for many incidents, as occurred during the observation period of the quality of contact for each stimulation act resulted in a total score resembling a continuous interval variable (Labovitz, 1970). Further, the F statistic is robust as used in Multiple Regression meaning that it resists violation of assumptions (Kerlinger and Pedhazer, 1973). Analysis of the mean, standard deviation, standard error, and kurtosis was done.

Paired T-Tests

T-tests were used for analysis of differences between the subsamples female and male for quality of parental contact and for observed quantity of sensori-stimulation for each sense modality.

Significance between paired groups was determined through

comparison of the obtained t statistic with the value for the Degree of Freedom equal to n - 1, for testing the difference between the means of two correlated samples. The probability of getting the observed value as a comparison between groups was not postulated to be greater for either group, therefore, a two-tailed test of significance was used. Values for the t statistic were computed as:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\frac{S_d}{\sqrt{n}}}$$

and: $S_d^2 = (S.D._1)^2 + (S.D._2)^2 - 2(S.D._1) \times (S.D._2) \times (r_{1.2})$

Where:

t	is the obtained statistic
$\bar{X}_1$	is the mean of the subgroup: same-sex dyad
$\bar{X}_2$	is the mean of the subgroup: opposite-sex dyad
$S.D._1$	is the standard deviation of the same-sex dyad
$S.D._2$	is the standard deviation of opposite-sex dyad
$r_{1.2}$	is the correlation between the subgroups: same and opposite-sex dyad

The purpose of the t-test was to determine difference in the quality and quantity of parent-child interaction between same sex and opposite sex dyads (Stapleton[1]).

[1]J. Stapleton, personal communication, December 1983.

Pearson Product Moment Correlation

The Pearson Product Moment Correlation was used to measure the relationship among the independent variables: quantity of sensori-stimulation, for total interaction of modalities (auditory, visual, and tactile) and individual contribution of each sense modality; quality of contact; educational level of the parent; occupational level of head of the household; age of the subject, with the dependent variables: mental self image score and psychosexual development of identity score. correlations were developed for the total sample group and for subsamples composed of all male subjects and all female subjects. Further differentiation was between same and opposite sex dyads among each set of correlated variables.

The numerical range of the Pearson Product Moment Correlation is from -1.00 to + 1.00. A correlation close to +1.00 represents a strong positive relationship while a -1.00 represents a strong negative, or an inverse relationship between the variables. The Pearson Product Moment Correlation is a prelude to regression analysis where admission of variables is based upon the amount of predictability to add strength to the fit of the regression line and r (the correlation coefficient) is equal to the strentgh and direction of the linear relationship. Significance tests based on r assume random sampling and a bivariate normal distribution (Nie, et al., 1975). The significance of r is relative to the distance of the correlation from zero. Thus, the greater the distance from 0, in either direction, the higher the significance

between the variables. The initial correlations were zero-order correlations because there were no controls for the influence of other variables. Where X and Y represent two variables, and $\underline{r}$ is defined as the ratio of covariance to the square root of the product of the variance of X and Y, the formula for the computation of the program (SPSS) Pearson Correlation is (Nie, et al., 1975):

$$\underline{r} = \frac{\sum_{i}^{N} (X_i - \bar{X})(Y_i - \bar{Y})}{\left\{\left[\sum_{i}^{N} (X - \bar{X})^2\right]\left[\sum_{i}^{N} (Y - \bar{Y})^2\right]\right\}^{\frac{1}{2}}}$$

Where

X	is the th observation of variable X	
Y	is the th observation of variable Y	
N	is the number of observations	
$\bar{X}$	is $\sum_{i}^{N} X_i/N$	and equal to the mean of variable X
$\bar{Y}$	is $\sum_{i}^{N} Y_i/N$	and equal to the mean of variable Y

Further, significance tests were reported with each $\underline{r}$ coefficient with the formula derived from the Student's with N - 2 degrees of freedom, where (Nie, et al.):

$$t = \underline{r} \frac{(N - 2)^{\frac{1}{2}}}{1 - r^2}$$

and $\underline{p}$ is the probability under the null hypothesis that t would, in absolute value, be as large or larger than the value observed. Analysis of the correlation of mental self-image with quality and quantity of

sensori-stimulation according to the total parental interaction preceded multiple regression.

Multiple Regression

Multiple regression was used to identify causal effects among independent variables that would lead to the explanation of variance in the dependent variables: mental self-image and psychosexual identity. Intervening variables: age of the subject, occupational level of the father, and educational level of the parent were included in the regression equation to determine the influence on the dependent variables through the use of the partial correlation coefficients.

A path structural relationship was hypothesized where quantity and quality of sensori-stimulation would lead to development of a mental self-image in the subject. Further, it was postulated that there was a positive relationship between the mental image the child had of self and the development of the subject's psychosexual identity.

Multiple regression was the methodology of choice because the independent variables were continuous and manipulative analysis of high, medium, or low categories would be misleading with a sample size of 36. Multiple regression allowed a method of analyzing interaction effects, a necessary test of Hypotheses 3, 6, 7, and 8. Two methods of multiple regression were used: the hierarchical inclusion and the stepwise inclusion. Hierarchical inclusion was used initially as a means of testing causal relationships based upon the hypotheses. Stepwise inclusion was used to determine what variables would be selected to provide the greatest explanation of variability in the dependent variable(s).

The hierarchical method used a different set of tests for B (Beta), because instead of determining the incremental contribution according to the partial correlation (stepwise) the researcher specified the order of inclusion based upon the relationships specified in the hypotheses. Thus the first variable was tested by (Nie, 1975):

$$F = \frac{r_y^2 / 1}{(1 - R^2_{y.12\ldots k}) / (N - k - 1)}$$

Where:

F = Mean square due to regression / Mean square from regression

R^2 = Sum of Squares regression / Total sum of Squares

r_y = correlation coefficient

N is equal to 36 for total population, or 18 for subsamples of female and male subjects

k is the number of variables; if n was 18, k was equal to 3; if N is 36, k was equal to 7 or less

The second regression coefficient tested by the F ratio was:

$$F = \frac{r^2_{y(2.1)} / 1 *}{(1 - R^2_{y.12..k}) / (N - k - 1)}$$

* This would change: $r^2_{y(3.12)}$ would be the test statistic for inclusion of the third variable. The number of variables in the regression equation should not exceed $n/5$ or the model will be over-fitted (Draper and Smith, 1966), chance of type II error increases and fit would be inversely affected.

Following the hierarachical method of inclusion, computation was done through the stepwise inclusion method. A comparison of results was made for fit of model. In the forward stepwise solution, analysis of correlation is done at each step to determine the contribution of each variable if entered at that step in explaining the remaining variation in the dependent variables: mental self-image score or development of psychosexual identity. In the SPSS program the amount of coefficient of partial determination is found by reviewing the variables not in the multiple equation and looking under the column heading PARTIAL for the highest number. The partial determination measures the contribution of each independent variable, given that of the other variables in the equation.

The coefficient of determination (R^2) measures the proportion of variance explained by all the independent, or intervening, variables already in the model, while the coefficient of partial determination measures the marginal contribution of each variable given the independent variables in the model. The square of the partial value explains the currently unexplained variance in the dependent variable that can be eliminated if a specific variable is entered in at the next step (Huntsberger, Croft, and Billingsley, 1980). The equation on the following page explains the formula for the computation of the new coefficient of determination (R^2) if the next variable X_i is included in the regression

equation at the next step:

$$\text{The unexplained variation in } Y \text{ at a given step} = 1 - R^2$$

$$\text{New } R^2 = R^2 + [(\rho^2) \times (1 - R^2)]$$

Where:

X_i = The independent variable to be included at the next step.

Y = The dependent variable

R^2 = The coefficient of determination at the current step.

ρ^2 = The square of the partial correlation coefficient of X_i with Y with previous independent variables removed.

The additive effect of each variable is found by examining the R^2 as the percentage is the amount explained by the variables in the regression equation.

The Beta coefficients are the regression equations' coefficients expressed in terms of the standard deviation of the variables that are involved. Beta ($\hat{B}_i$) would indicate the number of standard deviations that Y changes for every standard deviation change in X_i. For example, in Table 16, quality of same-sex contact changed 1.4 standard deviations when added to the regression equation with the dependent variable, Mental Self-Image Score.

The TOLERANCE Column on the SPSS program gives an indication of the relative independence of the variables not in the equation to the variables already in the equation. When the tolerance value is

high (.85+) the variable is approaching linear independence of the other variables. The tolerance is equal to 1 - R^2, where R^2 is the multiple coefficient of determination of that independent variable with the collection of independent variables in the equation.

To check the regression equation for possibility of multicollinearity the tolerance column was checked for a low value prior to entry of the variable into the equation, further checks were made by watching for (Groebner and Shannon, 1981):

1. Incorrect signs on the coefficients.
2. Changes in the value of previous coefficients (B) when a new variable is added.
3. The change to insignificant of a previously significant variable when a new variable is added.
4. An increase in the standard error of the estimates

To eliminate the possible effects of multicollinearity, the individual effects of the individual sense modalities, tactile, auditory, and visual were computed as a product. The product of the sense modalities was the interaction of auditory x visual x tactile. The computation was done via the SPSS command COMPUTE. The multiplicative model provided a ratio to the moving average (Groebner and Shannon, 1981), and allowed computation to retain evidence of fluctuation between trends. A basic difference between a multiplicative model and the additive model is that the multiplicative model gave indication of irregular variation among the variables that might have been lost in the additive model (Dunn and Clark, 1974: Huntsberger, Croft, and Billingsley, 1980).

The assumptions of the multiple regression procedure are:

1. The sample was randomly selected.
2. The independent variables are nonrandom.
3. The dependent variable values are normally distrubuted.
4. The variance around the regression plane is constant.

The F test statistic associated with multiple regression is believed to be robust with regard to violation of the above assumptions (Kerlinger and Pedhazer, 1973), meaning that the test gives fairly accurate results even if an assumption is not satisfied (Welkowitz, Eweb, and Cohen, 1976).

Guttman Scaling

A Guttman scale is a cumulative scale wherein the scale ascends in order of difficulty of response. The Guttman Scale is unidimensional and questions or statements are ordered according to rank. Guttman Scaling provides a method of analyzing items in a questionnaire in order that difficulty might be ascertained. Such scaling was necessary in order that the Gender Consistency Scale be used in this research. The Gender Scale was a composite of items from prior research and had not been ordered according to difficulty for preschool children. While the Slaby and Frey (1975) scale had been scaled through Guttman analysis, as had the Gouze and Nadelman Scale (1979), neither of these scales combined all the items of the composite edition used for this research. Further, additional items were chosen for the

subjects to answer. The addition of the more complex questions was done to create possibility of a normal distribution of correct response.

The SPSS program, Guttman Scale, uses cutting points to determine that no category has more error than non-error. The cutting lines are horizintal lines across the columns representing categories of items and are used so that errors in each category are counted and recorded below the table. The total number of errors for the total subjects in this study was 8 (see Table 5). For the subsample female, the error was equal to 2. For the subsample male, the error was equal to 4. Thus, the Guttman Scaling of the total sample increased the number of errors from four to six points.

To compute the coefficient of reproducibility, errors are totaled and expressed as a portion of the total number of responses. In this research there were none categories and 36 subjects for a total of (9 X 36) 324 responses. The total errors are divided by the total responses and the value is computed by substracting from 1 (Edwards, 1957) as:

$$\text{coefficient of reproducibility} = 1 - \frac{\text{total error}}{\text{total response}}$$

$$1 - \frac{8}{324} \quad \text{or} \quad 1 - .0266 = .9753$$

This value indicates the percent accuracy in which responses

to the items on the Gender Consistency Scale can be reproduced from total scores.

The minimum coefficient of reproducibility is obtained by the frequencies in each category of response. To compute the minimum marginal reproducibility the proportion of responses in each category are summed and divided by the number of statements. To calculate the sum the maximum marginals for each number are used. The minimum marginal reproducibility gives the minimum coefficient that could have occurred, given the cutting points determined through analysis and the proportion of subjects passing or failing each item.

In order for a Guttman Scale to be considered valid the coefficient of reproducibility must be higher than .9. Another measure obtained with the SPSS program for Guttman Scaling is the coefficient of scalability which can vary from 0 to 1, but must be over .6 to be unidimensional and cumulative (Nie, et al. 1975).

Path Analysis

Path analysis was used to provide the conceptual framework for illustration of the postulated causal ordering of the variables underlying the theoretical orientation of this research. The design of this research is explanatory and the path model allows a pictorial arrangement of relationships suggested in the hypotheses. The use of the path model was made possible through multiple regression hierarchical inclusion that was then compared with the

resulting equation of the stepwise method of computation.

The formation of the hypotheses was based upon several years of observation of parent-child dyads and certain outcomes appeared to indicate a causal ordering that underlies the proposed structure of the path model.

To obtain path coefficients a standardized regression coefficient must be obtained. This was done through step 1 of the hierarchical inclusion method. Further analysis was done through the inclusion of the variables in order of perceived importance. The beta values were used to represent the strength of the relationship between variables, with B representing the Beta value.

In the model in Figures 3, 4, and 5 the Beta values are used, however, the strength of the relationship could have been illustrated with the ordinary correlationship coefficient (r). The probability of the relationship is represented by a p directly under a Beta illustration. Residual causes, not in the equation were measured from the regression summary by (Nie, et al, 1975):

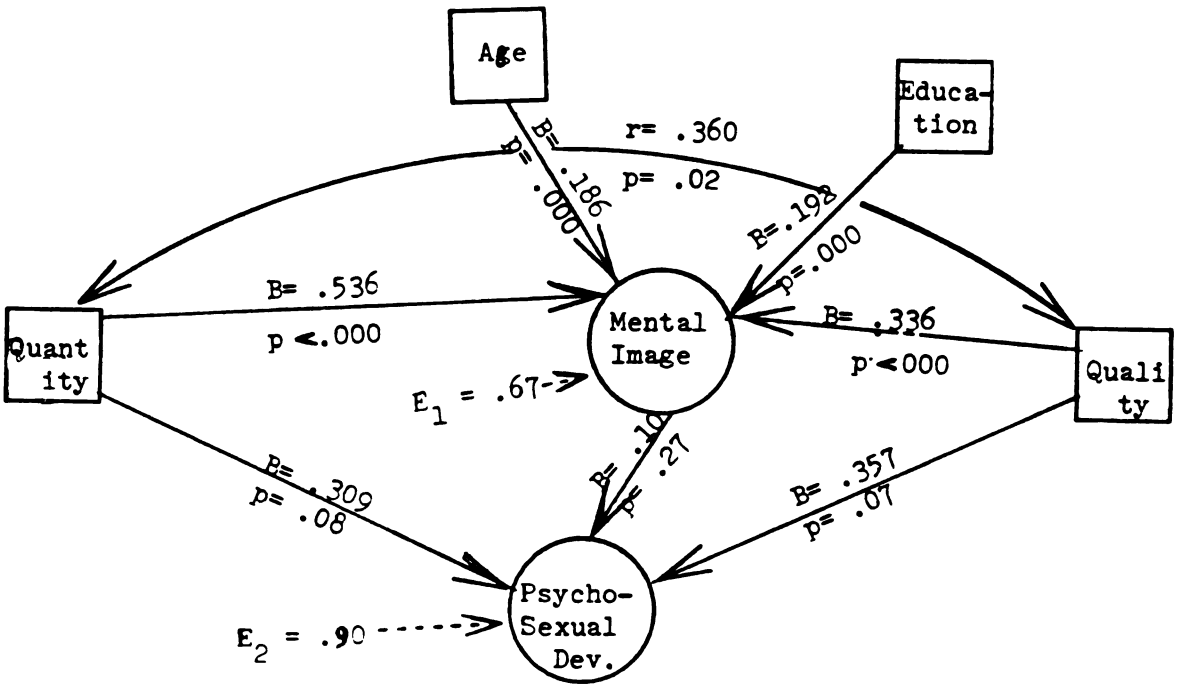
$$E = \sqrt{1 - R^2}$$

Where:

E = residual associated with the dependent variable after the addition of the Independent variable

R^2 = the multiple coefficient of determination

Correlations between variables were determined through the Pearson Product Moment Correlation Zero Order analysis and were



Key:

Dependent Variable

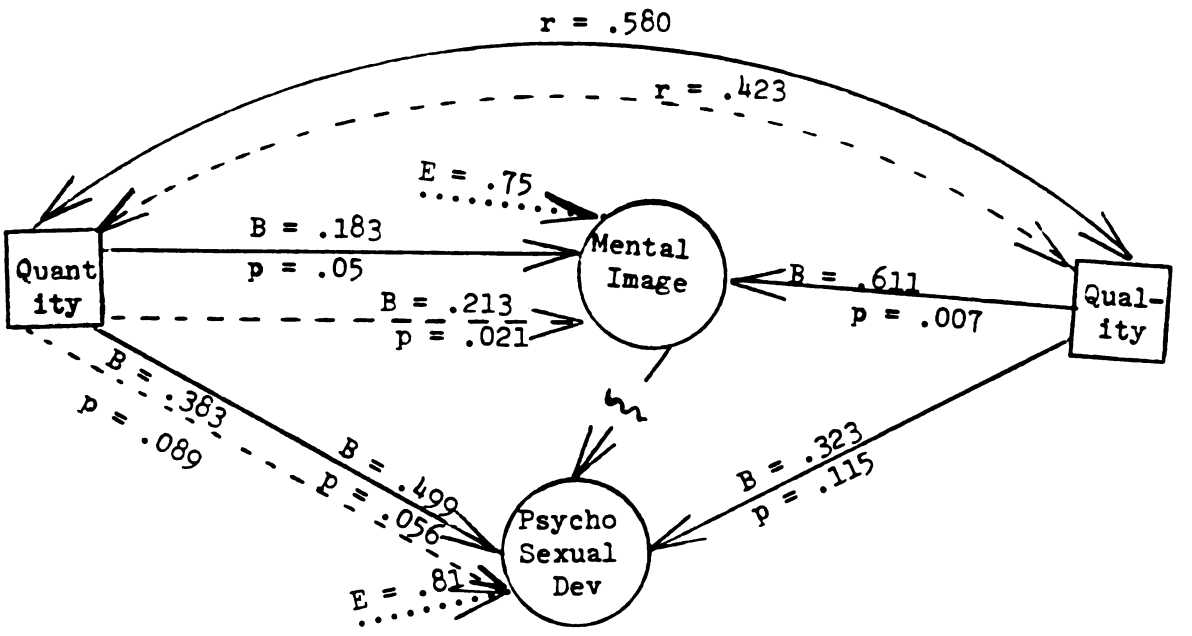
Independent Variable

Beta value and Significance

Correlation and Significance

E -> Residual associated with Dependent Variable, after addition of Independent Variables, where $E = \sqrt{1 - R^2}$

FIGURE 3 ---Path Diagram to Illustrate Causal Model with Related Correlation as Suggested in Multiple Regression Stepwise Analysis for Total Sample.



Key:

Independent Variable

Dependent Variable

Same-Sex Dyad

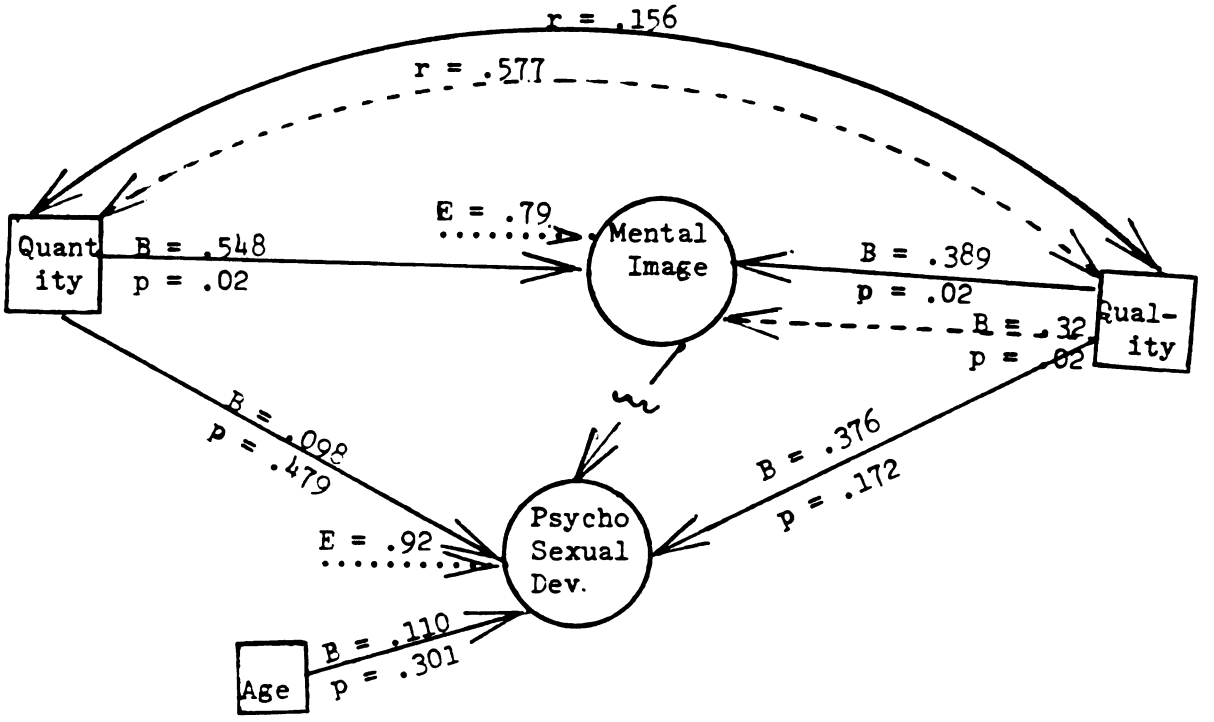
Opposite-Sex Dyad

Relationship not in Regression Summary

E....Residual associated with Dependent Variable after addition of Independent Variables where

$$E = \sqrt{1 - R^2}$$

FIGURE 4 -- Path Diagram to Illustrate Causal Model with Related Correlation as Suggested in Multiple Regression Stepwise Analysis for Female Subsample.



Key:

- Independent Variable
- Dependent Variable
- ——— Same-sex Dyad
- - - - Opposite-Sex Dyad
- ∿∿ Relationship not in Regression Summary
- E···· Residual associated with Dependent Variable after addition of Independent Variables where: $E = \sqrt{1 - R^2}$

FIGURE 5 --Path Diagram to Illustrate Causal Model with Related Correlation as Suggested in Multiple Regression Stepwise Analysis for Male Subsample.

represented with a curved line between variables. The significance according to the Student's t is shown with a $\underline{p}$ (= or <) below the value of $\underline{r}$.

It should be noted that while path analysis is a method for illustrating implications of a set of causal assumptions, imposed by the theoretical orientation of the research, path analysis cannot be considered more than a weak causal ordering. The linkage between variables is derived from regression analysis. In regression analysis predictability is possible only with a data set similiar to the set used in the regression analysis originally. Because samples vary among the many variables, one must be careful of extrapolation beyond the limitations of this research. Thus, the path analysis, as used in this research, is used for the purposes of illustration to summarize information.

CHAPTER IV

FINDINGS

The statistical procedures and test statistics are detailed in Chapter III. In this chapter, prior to the discussion of the hypotheses and questions, indices of descriptive statistics will be examined as well as decisions for data analysis that were reached prior to the use of Multiple Regression for analysis of causal relationships.

Descriptive Statistics

Descriptive data for all variables are presented on Table 3. The data are presented for the total sample and for the sub-samples of male subjects and female subjects. A review of Table 3 indicates that tactile stimulation has a standard deviation in excess of the mean, indicating the the sample was not normally distributed about the mean as is suggested appropriate for multiple regression analysis. A review of Table 4 indicates that the range for the total sample is between no contact among parent and child, to approximately 656 seconds, or 10 minutes of tactile contact. Other ranges include a variation of no auditory contact for the entire sample to 1150 seconds, or 19.2 minutes of parent to child auditory contact. The greatest range in contact of subsets of boys and girls was between mothers and sons with a range from 0 seconds to 1075 seconds of auditory contact. The wide fluctuation in range would cause statistical concern except

TABLE 3 ---Summary of Means and Standard Deviations of Variables with Comparison between Total Sample and Subsample of Female and Male Subjects

Variable	Total		Female		Male	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Dependent Variable:						
Psychosexual Identity	5.44	1.16	5.69	.97	5.22	1.31
Mental Self-Image	9.47	3.37	11.13	2.48	7.11	2.32
Independent Variable:						
Quantity stimulation Auditory, same-sex	366.22	314.20	605.22	264.00	127.21	112.21
Quantity stimulation Visual, same-sex	80.00	68.65	116.00	73.50	44.00	39.46
Quantity stimulation Tactile, same-sex	95.03	143.17	136.89	167.88	53.17	101.51
Quantity stimulation Auditory, opp-sex	243.78	252.19	144.89	121.01	342.68	122.21
Quantity stimulation Visual, opp-sex	48.56	36.10	39.44	33.44	57.67	37.28
Quantity stimulation Tactile, opp-sex	89.16	162.17	83.22	152.03	55.11	175.95
Quality of Contact same-sex dyad	3.53	.71	3.78	.28	3.27	.90
Quality of Contact opposite-sex dyad	3.63	.37	3.86	.31	3.60	.44
Education of Parent	15.64	2.11	15.50	2.20	15.78	2.07
Occupation of Father	6.66	3.04	6.94	3.54	6.78	2.56
Age of Subject, in months	54.38	4.06	54.72	3.36	54.00	4.73
N =	36		18		18	

TABLE 4 --- Summary of Range of Observed Sensori-Stimulation as Quality of Contact and Quantity of Time in Seconds; Data for Total Sample and Subsample of Female and Male Subjects.

Variable	Total		Female		Male	
	Low	High	Low	High	Low	High
Same Sex						
Quality	0.00	4.13	3.02	4.13	0.00	4.08
Quantity:						
Auditory	0.00	1150.00	234.00	1150.00	0.00	394.00
Visual	0.00	312.00	26.00	312.00	0.00	151.00
Tactile	0.00	656.00	0.00	656.00	0.00	425.00
Opposite Sex						
Quality	3.00	4.37	3.00	4.37	3.00	4.29
Quantity:						
Auditory	9.00	1075.00	11.00	427.00	0.00	1075.00
Visual	0.00	150.00	0.00	150.00	0.00	674.00
Tactile	0.00	674.00	0.00	640.00	0.00	674.00

a review of the significance of F, for mental self-image, indicates that p <.0005, therefore, such lack of homogeneity can be accepted when the statistic is robust (Stapleton, 1983).[1]

The summary of means and standard deviations on Table 3 indicates that there are slight differences in these statistics when the sample is nested under subsamples of male subjects and female subjects. When comparison of statistical data for boys and girls are analyzed the scores for the psychosexual identity and mental self-image is lower for boys than for girls. The formal educational level of parents of boys was higher than the educational level of parents of girls (15.50, 15.78) but the difference was less than a year of school. The boys were slightly older than were the girls by approximately three weeks. The occupational level of the fathers of girls was slightly higher, by .16 of a level, than the fathers of boys. The differences in educational and occupational levels are very slight. For further analysis, the age of the subject was added to the multiple regression last, to control for effect on the dependent variables, mental-self-image and psychosexual identity.

The data from the children's self-portrait were compared with the data from the research of Goodenough (1926), Goodenough- Harris (1963), Harris (1963) and Koppitz (1968). The mean scores for the Goodenough (1926) sample of four year olds indicate a mean of six body parts. The mean score in the Goodenough-Harris (1963) sample is 12.

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[1] J. Stapleton. personal communication. December, 1983.

The range of scores on the drawing of the mental self-image was between 3 to 18 body parts. For the total sample the mean was 9.47 with a standard deviation of 3.37. For the subsample of female subjects the mean was 11.13 with a standard deviation of 2.48. The Goodenough-Harris mean score was slightly higher, with a mean of 12. The mean score for the subsample of males, in this research, was 7.11 with a standard deviation of 2.32. This score is lower that the Goodenough-Harris sample where the mean score was 10. The distribution of scores for the total sample is illustrated on Figure 6 and Figure 7 in Bar Chart format.

Guttman Scaling was done for the total sample and for subsamples of male and female subjects. Analysis of the scale indicated that all subjects, boys and girls, were able to answer questions 1 through 9 (Appendix C, pages 211-212). The questions are related to an understanding that external appearances are related to maleness or femaleness, and to questions about the subject's gender identity, "Are you a boy, or a girl?" Two children, a boy and a girl, were uncertain about their gender when they were a baby. Both youngsters had younger siblings, and answered that they were the opposite-sex, which was the gender of the baby. Three children, all boys, thought that they could change their gender if they wanted to do so. Twenty-three children were unable to understand the permanence of their gender and thought that their gender would change if they were dressed in clothing of the opposite sex. More boys, than girls responded that their gender would change, as 9 girls believed that external change would change them and fourteen boys thought their gender could be changed. Four subjects, two girls and two boys were able to

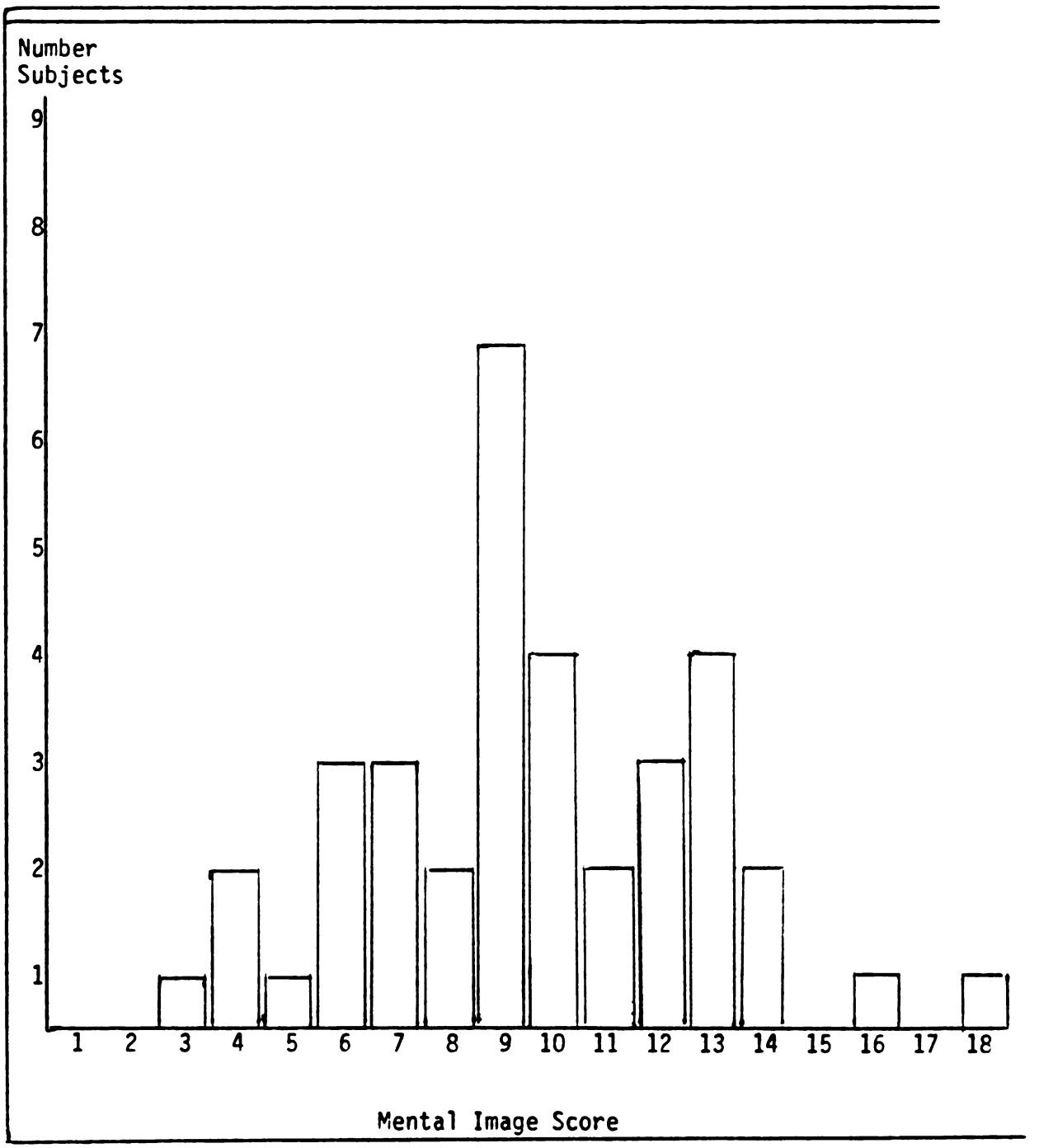


FIGURE 6 -- Bar Chart for Total Sample, Distribution of Mental Self-Image Scores.

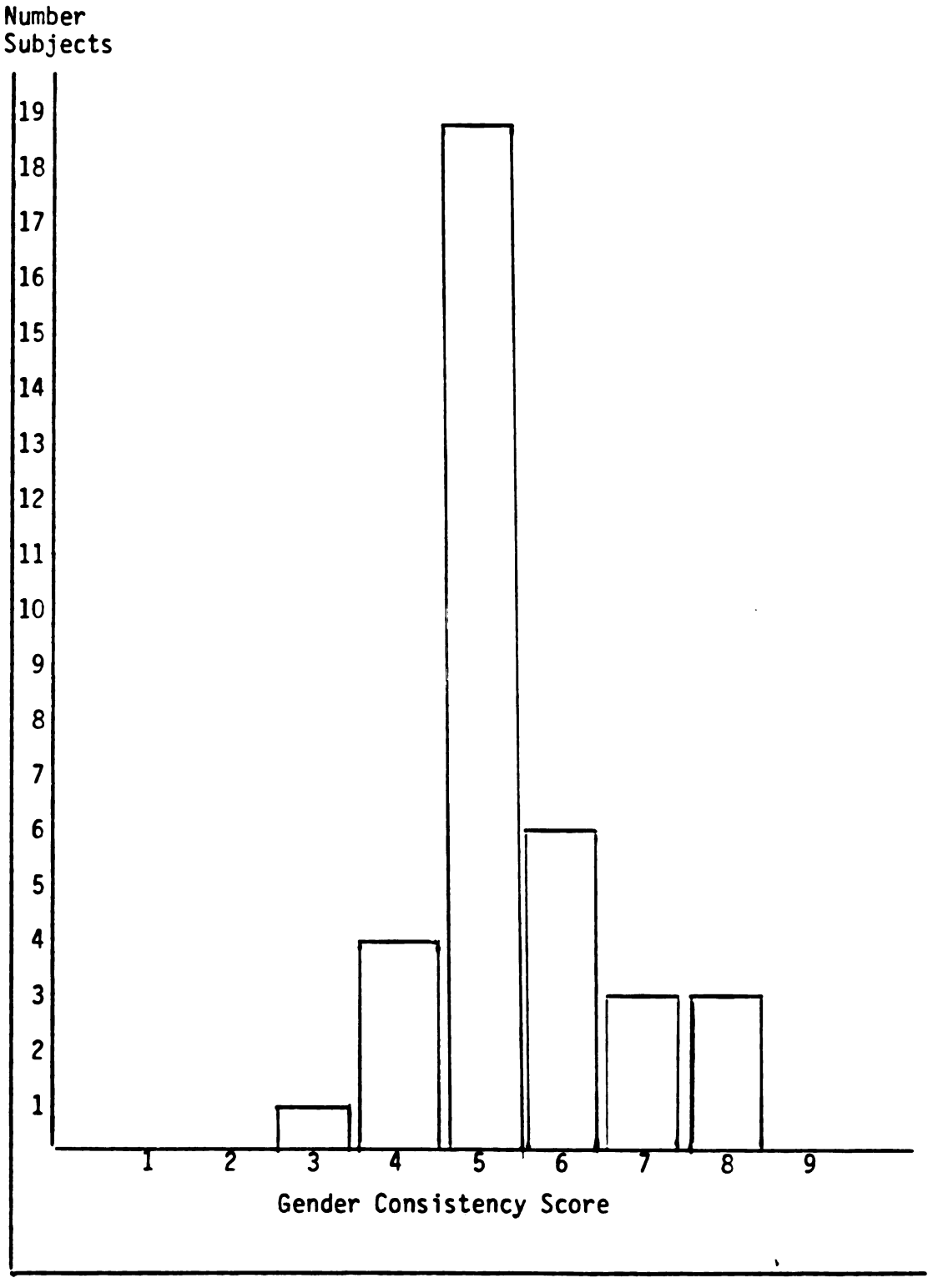


FIGURE 7 -- Bar Chart for Total Sample, Distribution of Consistency Scores For Psychosexual Identity.

understand that they were male or female because of "being borned that way", according to one little boy. The same youngsters, with an additional little girl could answer gender constancy questions regarding others. The scaling by the SPSS subprogram Guttman Scale indicated that the questions were reproducible as a Guttman Scale, when the scales from prior research (Slaby, 1975; Gouze and Nadelman, 1980; and McConaghy, 1979) were combined into one scale. Although, the scaling differs according to subsample (see Tables 5, 6, and 7), the variation in the scaling, between samples, is due to the ego-centric, or wishful thought, and is characteristic of preschool cognition and gender stability. A comparison of the gender scale items is found on Figure 8.

The mean for the gender consistency scale, the measure for psychosexual identity, was 5.44 with a standard deviation of 1.16, for the total sample. The mean for the subsample for girls was 5.69 with a standard deviation of .97, and the mean for boys was 5.22 with a standard deviation of 1.31. Thus, girls tended to score slightly higher on the gender consistency scale, than did boys, with less deviation in scores (Table 3). A bar chart of gender consistency scores for psychosexual identity is found on Figure 7. Analysis of the chart indicates that the distribution of scores was negatively skewed with a large grouping of subjects at the mean. The bunching of subjects indicates that the scale might lack precision in differentiating between level four and six.

All scalings, for total subjects and subsamples had a coefficient of reproducibility of .9753 or higher, making the scale a valid Guttman Scale (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975).

TABLE 5 ---- Illustration of Guttman Scaling of Variable, Psychosexual Identity, for Total Subjects

RESP.	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	TOTAL
	ERR		ERR		ERR		ERR		ERR		ERR		ERR		ERR		ERR		
	(G9)		(G8)		(G7)		(G4)		(G5)		(G3)		(G6)		(G2)		(G1)		
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-----ERR--																		
8	3	0	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	3
			----ERR																
7	3	0	2	1	1	2	0	3	0	3	0	3	0	3	0	3	0	3	3
					----ERR														
6	7	0	7	0	7	0	0	7	0	7	0	7	0	7	0	7	0	7	7
							----ERR												
5	18	0	18	0	18	0	18	0	0	18	0	18	0	18	0	18	0	18	18
									----ERR										
4	4	0	4	0	4	0	4	0	2	2	2	2	0	4	0	4	0	4	4
											----ERR								
3	1	0	1	0	1	0	1	0	1	0	0	1	1	0	0	1	0	1	1
													----ERR						
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
															----ERR				
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																	----ERR		
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMS	36	0	32	4	31	5	23	13	3	33	2	34	1	35	0	36	0	36	36
%	100	0	89	11	86	14	64	36	8	92	6	94	3	97	0	100	0	100	
ERRORS	0	0	0	1	1	0	0	0	0	2	2	1	1	0	0	0	0	0	e

Coefficient of Reproducibility = .9753

Percent improvement =.0617

Coefficient of Scalability = .7143

TABLE 6 ---- Illustration of Guttman Scaling of Variable, Psychosexual Identity, for Female Subjects

RESP.	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	TOTAL
	ERR		ERR		ERR		ERR		ERR		ERR		ERR		ERR		ERR		
	(G9)		(G8)		(G7)		(G4)		(G3)		(G5)		(G6)		(G2)		(G1)		
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	---ERR--																		
8	1	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	1
			----ERR																
7	2	0	1	1	1	1	0	2	0	2	0	2	0	2	0	2	0	2	2
					----ERR														
6	6	0	6	0	6	0	0	6	0	6	0	6	0	6	0	6	0	6	6
							----ERR												
5	8	0	8	0	8	0	8	0	0	8	0	8	0	8	0	8	0	8	8
									----ERR										
4	1	0	1	0	1	0	1	0	1	0	0	1	0	1	0	1	0	1	1
											----ERR								
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
													----ERR						
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
															----ERR				
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																	----ERR		
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	18	0	16	2	16	2	9	9	1	17	0	18	0	18	0	18	0	18	18
%	100	0	89	11	89	11	50	50	6	94	0	100	0	100	0	100	0	100	
ERRORS	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

Coefficient of Reproducity = .9877

Percent Improvement = .0741

Coefficient of Scalability = .8571

TABLE 7 ---Illustration of Guttman Scaling of Variable, Psychosexual Identity, for Male Subjects

RESP.	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	TOTAL
	ERR		ERR		ERR		ERR		ERR		ERR		ERR		ERR		ERR		
9	0	(G9) 0	0	(G8) 0	0	(G7) 0	0	(G4) 0	0	(G5) 0	0	(G3) 0	0	(G6) 0	0	(G2) 0	0	(G1) 0	0
	----ERR--																		
8	2	0	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	2
			----ERR																
7	1	0	1	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	1
					----ERR														
6	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1	0	1	1
							----ERR												
5	10	0	10	0	10	0	10	0	0	10	0	10	0	10	0	10	0	10	10
									----ERR										
4	3	0	3	0	3	0	3	0	2	1	1	2	0	3	0	3	0	3	3
											----ERR								
3	1	0	1	0	1	0	1	0	1	0	0	1	1	0	0	1	0	1	1
													----ERR						
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
															----ERR				
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																	----ERR		
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUM	18	0	16	2	15	3	14	4	3	15	1	17	1	17	0	18	0	18	18
%	100	0	89	11	83	17	78	22	17	83	6	94	6	94	0	100	0	100	
ERRORS	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	4

Coefficient of Reproducibility = .9753

Percent Improvement = .0617

Coefficient of Scalability = .7143

Item no.	Scale Name	Total Scale Order	Female Scale Order	Male Scale Order
GC1	Gender Knowledge/inconsistent	1	1	1
GC2	Gender Identity of Self	2	2	2
GC3	Gender Stability	4	5	4
GC4	Gender Constancy for Self	6	6	6
GC5	Wishful Thought	5	4	5
GC6	Accept Gender	3	3	3
GC7	Gender Constancy for Others	7	7	7
GC8	Physical reason	8	8	8
GC9	Genital Knowledge	9	9	9
Number Subjects		N = 36	n = 18	n = 18

FIGURE 8 --Reorder of Gender Scale Items according to Guttman Scalability for Total Sample, Female Subsample and Male Subsample, rated from Least to Most Difficult. Illustration of change in mid-scores.

Inferential Statistics

In this section the hypotheses and questions are taken in order. The descriptive statistics are presented in the prior section. The inferences made in this section can be related, only, to other samples having the same characteristics as the families used in this research. Further, the sample size of male and female subsamples is small. An attempt was made to control variability through homogeneous selection of subjects from a specific segment (FAPCN nurseries) of the population, however, such assumptions may not be valid.

Each of the hypotheses, 1 through 8, to be stated here will be tested using the following procedure. The hypotheses, as stated here, correspond to the alternative, or research, hypotheses. The corresponding null hypotheses imply an absence of the effect in the alternative hypotheses. The p value given is then the probability that the test statistic used would be as large as observed under the null hypothesis. If p is less than (<) .05 the null hypothesis is rejected, and the alternative hypothesis, or research hypothesis, is supported. A p value greater (>) that .05 indicates that the null hypothesis cannot be rejected (at the .05 level) and alternative is not established or supported. Thus, when evidence is lacking to establish the research hypothesis the null hypothesis can not be assumed to be proved true.

Objective 1

The first objective was to measure the effects of sensori-stimulation between parent and child on the development of the child's mental image of self, as compared for quantity of sensori-stimulation

and quality of parental contact. Prior to the testing of the research hypotheses, Question 1 was answered.

Question 1

> Does parental perception of quantity of sensori-stimulation as measured by the Parent Report significantly correlate with the observed quantity of sensori-stimulation measured using the Observation Sheet?

In this study, sensori-stimulation is defined as the stimulation of auditory, visual, or tactile receptors. Sensori-stimulation was measured through the use of Observation Sheet and the Parent Report. The parent Report was based upon the parents' perceived contact with the child. Analysis of the relationship between the instruments was measured by the Pearson Product Moment Correlation shown in Table 8.

TABLE 8 -- Summary of Pearson Product Moment Correlation Between the Observed Total Sensori-stimulation and the Parent Report of Perceived Contact for Quantity Between Same-sex and Opposite-sex dyads.

Variable	Pearson r	Significance
Same-sex dyad		
Observed stimulation with Reported stimulation	.1048	.271
Opposite-sex dyad		
Observed stimulation with Reported stimulation	.2859	.045

The result of the statistical analysis indicated that for parent child dyads of the same-sex, the perceived quantity of interaction

did not correlate with the quantity observed. There was a significant correlation (p = .045) within opposite-sex parent-child dyads. The correlation between observed quantity of sensori-stimulation for same-sex parent-child dyads compared with a reported quantity was r = .1048 with a significance of .271, therefore, while opposite-sex dyads approached a significant level between observed and reported quantity of contact, same-sex dyads did not significantly correlate. The relationship was analyzed, further, by comparing correlations between the sense modalities of auditory, tactile, and visual, as measured by the Observation sheet and the Parent Report. The results of correlation for same-sex dyads are found in Table 9. The results of correlation for opposite-sex dyads are found in Table 10. The results are nested for subsamples of female and male subjects. In the specific modality of tactile, visual, or auditory, the only correlation to reach a significant level was between female subjects and the opposite-sex parent on visual quantity. Pearson Product Moment Correlation (r) is equal to .5141 with p equal to .015. While appearing significant, the results could be misleading, (Welkowitz, et al, 1976) and represent a Type I error, wherein the alternative hypothesis is accepted as true when it is really false. When there are six correlations there is a .30 possibility that one set would reach a significant level through chance. The lack of correlation between the two instruments might be the result of several factors. The parents were observed at a specific hour during the year the child was four years old. The Parent Report covered the parent's perception of interaction from birth to the time of the interview.

TABLE 9 -- Summary of Correlation Between Observation of Quantity stimulation, of Same-sex Interaction, according to Sensori-Modalities of Tactile, Auditory, and Visual Contact with the Parent Report of Quantity Interaction in each Modality for Subsamples of Female and Male Subjects.

Variable	Female		Male	
	r	p	r	p
Observed Quantity: Tactile with Reported Quantity: Tactile	.3662	.067	.0023	.496
Observed Quantity: Auditory with Reported Quantity: Auditory	.0125	.480	.0116	.482
Observed Quantity: Visual with Reported Quantity: Visual	.0789	.378	.1267	.308
Total Subjects N = 38	n = 18		n = 18	

TABLE 10 -- Summary of Correlation Between Observation of Quantity stimulation, of Opposite-Sex Interaction, according to Sensori Modalities of Tactile, Auditory, and Visual Contact with the Parent Report of Quantity Interaction in each modality for Subsamples of Female and Male Subjects.

Variable	Female		Male	
	r	p	r	p
Observed Quantity: Tactile with Reported Quantity: Tactile	.1235	.313	.0217	.466
Observed Quantity: Auditory with Reported Quantity: Auditory	.3793	.060	.3273	.093
Observed Quantity: Visual with Reported Quantity: Visual	.5141	.015	.3273	.133
Total Subjects N = 36	n = 18		n = 18	

The behavior of the parents during the time of observation and the parental report of behavior might have been affected by the intrusion of research methods. The Parent Report contained several pages of questions suggesting several patterns of interaction between parent and child (see Appendix C). Analysis of the data might have provided a clearer relationship between the two instruments if an indepth study had been done wherein all questions were used as variables. The analysis would require a larger sample size as the addition of variables in a regression equation cannot exceed n/k equal to 5. The additional analysis was beyond the resources of this study. For testing hypotheses 1 through 8 data from the Observation Sheet were used and further analysis continued.

Research Hypothesis 1

> The greater the quantity of sensori-stimulation between parent and child, the higher the child's mental image of self will be.

To test quantity of sensori-stimulation between parent and child on the development of the child's mental self-image, sensori-stimulation was measured as an interactive model using multiplicative computation as detailed in Chapter III. The relationship between stimuli and mental self imagery was computed through the Pearson Product Moment Correlation Coefficient and was found to have a value equal to .1826 and a significance level of .143. Thus, the sensori-stimulation as measured for quantity of interaction between parent and child did not have a significant effect on the child's mental image score. Hence, if the drawing test is predictive of the mental image the child has of self, as postulated by Di Leo (1973), Koppitz (1968) and Schilder (1950), the mental image the child has of self is not significantly affected by sensori-stimulation

from interaction with parents (see Table 11). The research hypothesis 1 is not supported at the .05 level of significance.

Research Hypothesis 2

> The greater the quality of parental contact between parent and child, the higher the child's mental image of self will be.

Pearson Product Moment Correlation Coefficient was used to test the relationship between sensori-stimulation and the mental image the child has of self. Correlation between quality of contact between parents and child had an r value = .4783 and a significant level of .002 (See Table 11). Research hypothesis 2 is supported.

Research Hypothesis 3

> Quantity of sensori-stimulation will have a stronger positive relationship with the development of the child's mental self-image than will quality of sensori-stimulation.

Multiple Regression with hierarchical inclusion was used to test research hypothesis 3 (see Table 12). Quantity of sensori-stimulation was added at the first step and the correlation with mental self-image is equal to .1826, as mentioned in the discussion of hypothesis 1. The significance of quantity of sensori-stimulation with mental self-imagery is p = .287. The multiple coefficient of determination (R^2) is the measure that indicates the variance in mental self-image explained by quantity. The R^2 was equal to .03. When quality of sensori-stimulation was added at the 2nd step the addition of this variable increased the R^2 to .23. With the addition of quality the significance value changed from p = .287 to p = .013.

Because mental self-image is a cognitive process and would seem to increase as the child grows, age of the subject was added last

TABLE 11---Summary of Correlation of Dependent Variable: Mental Image with Quality and Quantity of Sensori-Stimulation according to Total Parental Interaction, Interaction of Same-sex Dyads, and Interaction of Opposite-sex Dyads for Total Subjects and Subsamples of Female Subjects and Male Subjects

Variable	Total		Female		Male	
	r	p	r	p	r	p
	N = 36		n = 18		n = 18	
Total Parental Interaction for:						
Quality	.4783	.002	.1220	.315	.2915	.120
Quantity	.1826	.143	.5926	.005	-.0332	.174
Same-sex Dyad Interaction for:						
Quality	.5038	.001	.4971	.018	.3950	.052
Quantity	.5640	.001	.4035	.046	.5550	.008
Opposite-Sex Dyad Interaction for:						
Quality	.1869	.138	.6133	.003	-.1323	.300
Quantity	-.1192	.244	.1160	.323	-.1108	.331

TABLE 12 ---Summary of Multiple Regression Hierarchical Inclusion of Independent Variables: Total Quantity Stimulation between Child and Parents, Quality of Contact, and Age of Child with Mental Self-Image for Total Sample

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	Total Quantity stimulation	1.17228	.145 E14	.379 E14	.033	.033	.287
2	Total Quality of Contact	8.45559	.461	.164	.230	.197	.013
3	Age of Subject	1.62811	.161	.126	.268	.037	.018

N = 36

k = 3

so that the impact of age could be controlled as a predictor. The partial correlation coefficient listed under the partial column of the SPSS program was .22. The partial value is the influence of age, after quality is removed. The multiple coefficient of determination explains the change in variance or mental image when age increased the predictability of the independent variables, quantity, quality, and age of subject, on the variance of mental image to .27. Therefore, in this multiple regression analysis the variables, quantity, quality, and age could account for .27 of the variance of mental self-image. Individual contribution of each variable was; quantity 3%, quality 20%, and age 4%. For all variables in the equation the tolerance ranged between .91 and .98 indicating that quantity, quality, and age are highly independent of each other and there is no evidence of multicollinearity, therefore, each of the independent variables contribute independently to predictions of variance in mental imagery. The contribution of quantity is less (3%) than quality (20%) to the explanation of variance in mental image. Thus, research hypothesis 3 is not supported.

Objective 2

The second objective in this research was to measure the effect of sensori-stimulation between parent and child on the development of the child's psychosexual identity. The results were tested by research hypotheses 4, 5, and 6.

Research Hypothesis 4

> The greater the quantity of sensori-stimulation between parent and child, the higher the developmental level of the child's

psychosexual identity will be.

Psychosexual identity refers to that part of self-development wherein one comes to know the self as female or male (Abelson, 1978; Emmerich, Goldman, Kirsh, and Sharabany, 1977; Gouze and Nadelman, 1980: Marcus and Overton, 1978; McConaghy, 1979; Slaby and Frey, 1975; and Storm, 1979). The Gender Consistency Scale used in this research was a composite of scales developed by Slaby and Frey (1975), Gouze and Nadelman (1980) and McConaghy (1979). Prior to testing research hypotheses 4, 5, and 6, the scale was scaled (see Chapter III) and found to have a coefficient of reproducibility equal to .9753. Because a coefficient of reproducibility higher than .91 is considered indicative that a scale is valid (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975) the rescaled model could be considered a valid Guttman Scale.

Analysis was done through the use of the Pearson Product Moment Correlation Coefficient to determine the relationship between quantity of sensori-stimulation, as measured by the Observation Sheet and psychosexual identity, as measured by the Gender Consistency Scale. The results of the test statistic indicate that for parent and child interaction through sensori-stimulation of the child, the quantity of sensori-stimulation as related to psychosexual identity is equal to a correlation ($\underline{r}$) of -.2200 with a level of significance of $\underline{p}$ = .099. Thus, it would appear that there is a weak, inverse relationship between sensori-stimulation and psychosexual identity, although the

probability of such correlation is insignificant to meet the criteria that $p \nleq .05$. Thus, there is insufficient evidence to support research Hypothesis 4.

Research Hypothesis 5

> The greater the quality of parental contact between parent and child the higher the child's developmental level of psychosexual identity will be.

Pearson Product Moment Correlation Coefficient was used to test the relationship between sensori-stimulation and the psychosexual identity of the child. Correlation between quality of contact between parents and child had an r value of .2606 and a significant level of $p = .062$ (see Table 13). For retention of this research hypothesis the significant level should be less than $p = .05$. There is insufficient evidence to support research Hypothesis 5.

TABLE 13 --- Summary of Pearson Product Moment Correlation Between Quantity of Sensori-Stimulation and Quality of Parent Contact with Psychosexual Identity for Total Sample.

Variable	Pearson r	Significance
Quantity of stimulation	-.2200	.099
Quality of contact	.2606	.062

Research Hypothesis 6

> Quantity of sensori-stimulation will have a stronger positive relationship with the development of the child's psychosexual identity than will quality of sensori-stimulation.

Table 13 illustrates a comparison of the Pearson Product Moment Correlation Coefficient for quantity and quality of sensori-stimulation between the child and parent with psychosexual identity. Although weak, quality does have a stronger positive relationship with psychosexual identity, than does quantity.

Further analysis was done through the use of multiple regression hierarchical inclusion for relative contribution. Prior to an analysis of the regression equation, an examination of the residuals was done to determine violation of normality. Examination of the set of residuals indicated that there were 15 positive and 21 negative runs. However, when there were n values, greater than 10 in each set, exact values are not needed as there is a continuity correction where the z statistic is equal to the observed mean minus the expected plus ½, where the ½ is the usual continuity correction statistic (Draper and Smith, 1966). In this regression formula $\underline{z}$ was equal to .69631 with a probability equal to .243. Further, 91.67% of the residual data points were between -2 and +2 standard deviations from the mean, with the greatest cluster about the mean. Hence, examination of the residuals indicate a random variability that closely approximates a normal distribution.

A review of the data on Table 13 indicated that the correlation between quality of contact and psychosexual identity was greater than the correlation between quantity of sensori-stimulation and psychosexual identity, while Table 14 illustrates that R^2 for quality contributes .117 to the regression equation when the .048 contribution of quantity

TABLE 14 ----Summary of Multiple Regression Hierarchical Inclusion of Independent Variables: Total Sensori-stimulation between Child and Parents, Quality of Contact, Age of Subject, Educational Level of Parent, Mental Image Score with Psychosexual Identity for Total Sample

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1.	Total Quantity stimulation	1.72885	-.269 E-14	.138 E-14	.048	.048	.197
2.	Total Quality of contact	4.52877	.117	.671	.165	.117	.051
3.	Age of Subject	Insufficient F or Tolerance level for inclusion					
4.	Educational Level of parent	Insufficient F or Tolerance level for inclusion					
5.	Mental Image	.10312	.020	.063	.168	.002	.113

N = 36

k = 5, with 3 retained

from the total. Research Hypothesis 6 is not supported as quality appears to have a greater effect of the development of psychosexual identity in the children than does quantity of sensori-stimulation.

Objective 3

The third objective of this research is to study the relationship between the development of the child's mental image of self and the developmental level of the child's psychosexual identity. To meet this objective, research Hypothesis 7 was tested.

Research Hypothesis 7

> The greater the developmental level of the child's mental image of self, the higher the child's developmental level of psychosexual identity will be.

Multiple regression with hierarchical inclusion was used to test research Hypothesis 7; quantity of sensori-stimulation, quality of parental contact through sensori-stimulation, mental image, age of the child, and educational level of the parents were the independent variables. Psychosexual identity was the dependent variable. Age of the subject was added as a variable to control for sequential development of psychosexual identity as a process due to age. Educational level of the parent was added as a measure of family cognitive achievement; it was assumed that parental cognitive development influenced the child.

Quantity of sensori-stimulation was added at the first step and the correlation with psychosexual identity was equal to -.2200 as mentioned in the discussion of research Hypothesis 4. The multiple coefficient of determination (R^2) was equal to .0484. Thus,

approximately 5% of the variance in psychosexual identity could be explained through quantity in the regression equation. When quality of parent contact was added at the second step, the addition of this variable increased R^2 to .165. At step 3 age was submitted. Age had a partial value of .00069 contributing minutely to the equation and was insufficient for inclusion (see Table 14). At step 4, educational level of parent was added. The partial value of education was equal to .05667. The contribution of education would be .002 to the value of R^2; the amount was insufficient for inclusion into the equation. At step 5 mental self-image was submitted and the relationship of mental self-image to psychosexual identity was determined to be .03. When mental image was added to the regression equation, the independent variables: quantity of sensori-stimulation, quality of parental contact and mental self-image of the child, contributed .168 or 17% explanation of the variance in psychosexual identity. Individual contribution of each variable was: quantity, .05 quality, .12 and mental image .03. At the onset of inclusion the tolerance level of all variables varied from .91 for quality to .995 for age of the subject. Prior to inclusion, the tolerance of mental self-image dropped to .77, indicating some dependence upon prior variables already included in the regression equation. However the tolerance level remained sufficiently high that multicollinearity was not considered problematic to analysis. Examination of the scatterplot of residuals revealed a randomized pattern and confirms the assumption of normality.

In summary, analysis of data indicates that quality of parent

contact had a predictive power of .12 with a significance level (p = .05) supporting the finding that quality of contact contributed to development of psychosexual identity in the children in this research. However, the contribution of mental self-image contributed only .002 to the regression equation and with the submitting of mental self-image as a variable, the overall significance of the independent variables is p = .113. Since $p < .05$ is the stated criteria for determining support of the research hypotheses, .113 is beyond the range of acceptable probability of predicting variance in psychosexual identity. The research Hypothesis 7 is not supported.

Objective 4

The fourth objective was to measure the effect of same-sex parent-child dyads, as compared to opposite-sex parent-child dyads, on child outcomes: mental self-image and psychosexual identity. A summary of the contribution of quantity of sensori-stimulation and the quality of parent contact on psychosexual identity was .17. The contribution of quantity and quality with mental self-image was .27. Therefore, the contribution of gender relationship was added and the results analyzed for improved predictability of the equation. Gender relationship was measured as same-sex or opposite-sex parent-child interaction.

Research Hypothesis 8

> Quantity of sensori-stimulation and quality of parental contact within same-sex parent-child dyads will have a stronger relationship to child outcomes than will these two variables for opposite-sex dyads.

The above hypothesis was measured through Multiple Regression. The first equation measured the independent variables effect on mental self-image.

The Pearson Product Moment Correlation Coefficient was used to test the relationship between quality of parental contact and quantity of sensori-stimulation with mental image for same-sex and opposite-sex parent-child dyads. In Table 15, a comparison between the correlation coefficient for same and opposite-sex parent-child dyads is shown. A review of the correlations reveals meaningful differences. The variables reflecting interaction in same-sex dyads, measured for quantity and for quality are more highly correlated with mental image than are the variables reflecting opposite-sex interaction. The correlation between quality of contact within same-sex dyads is $\underline{r} = .5038$ ($\underline{p} = .001$); the correlation between quantity of sensori-stimulation within same-sex dyads is $\underline{r} = .5640$ ($\underline{p} = .001$). The probability value for opposite-sex dyads for quantity and quality with mental self-image does not reach significance ($\underline{p} = .244$, $\underline{p} = .138$). Therefore, it appears that division of parental interaction with the child into gender relationships of same and opposite-sex provides improved predictability. To test this, multiple regression using hierarchical inclusion was used for further analysis (Table 16). The independent variables chosen for possible inclusion were: quantity of stimulation between parent and child of the same-sex; quantity of stimulation between parent and child of the opposite-sex; quality of parental contact within same-sex dyads; quality of parental contact within opposite-sex dyads; age of the subject; educational level of the parent; and, as a measure of

TABLE 15 ----Summary of Pearson Product Moment Zero Order Correlations: Quantity of Sensori-Stimulation and Quality of Parental Contact with Mental Image for Same-sex and Opposite-sex Parent-Child Dyads.

Variable	Same sex		Opposite sex	
	r	p	r	p
Quantity of Sensori-stimulation	.5640	.001	.1192	.244
Quality of Parental contact	.5038	.001	.1869	.138
	n = 18		n = 18	

TABLE 16 ---Summary of Multiple Regression Hierarchical Inclusion of Independent Variables: Quantity of Sensori-Stimulation, Quality of Contact, Psychosexual Identity, Age of the Subject, and Educational Level of Parent with Mental Self-Image Score for Same-sex and Opposite-Sex Dyads of Total Sample.

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	Quantity stimulation between same-sex dyads	15.860	.154	.416	.318	.318	.000
2	Quantity stimulation between opposite-sex dyads	1.816	-.151	.778	.354	.036	.001
3	Quality contact between same-sex dyads	8.596	1.420	.718	.489	.135	.000
4	Quality contact between opposite-sex dyads	.134	.506	1.411	.491	.002	.000
5	Age of Subject	2.439	.163	.106	.529	.038	.000
6	Psychosexual Identity	.271	.198	.401	.534	.004	.001
7	Educational Level of Parent	1.863	.291	.213	.563	.048	.000

N = 36
k = 7

linearity toward mental self-image, psychosexual identity. At step 1 quantity of sensori-stimulation between parent and child of the same-sex was included. The multiple coefficient of determination (R^2) was .318, indicating that sensori-stimulation with the same-sex explains 32% of the variance in mental imagery the child has of self. At step 2, quantity of sensori-stimulation between parent and child of the opposite-sex entered the equation. The partial value of quantity of sensori-stimulation within opposite-sex dyads was -.22840, indicating an inverse relationship between stimulation and mental image, however, the addition increased predictability of .354. At step 3, quality of contact between parent and child of the same-sex was added. The partial value for quality-same-sex is .40210. The R^2 for the multiple equation was equal to .489. At step 4, quality of contact between parent and child of the opposite-sex has a partial value of .06552 and explains only .002 of the variance in mental self-image. At step 5, age of the subject was added to the equation. Age had a partial value of .27414 and contributed .038 toward explaining variability. At step 6, psychosexual identity was added and at that step had a partial value of .09625. The contribution of psychosexual identity was minimal and contributed .09. At step 7, educational level of the parent was included and had a partial value of .24976. The contribution of educational level was .06 toward predicting variability. At the end of step 7, the value of R^2 was equal to .56309 or the independent variables included in the regression equation explained 56% of the variation on the dependent variable mental self-image. The variables, in order of

contribution, are found in Table 17.

In summary, parent-child dyads were measured for gender relationship according to same-sex dyads or opposite-sex dyads. The square of the partial figure, as illustrated in Table 17, is the portion of unexplained variation in mental self-image that would be eliminated if it were the last variable in the equation. It was included in the summary of data as it gives an index of contribution, of explanation of variability of mental imagery at the time of entry. The effect of gender relationship, as contributing to the predictability of mental self-image increased explanation of variability from 26.8% to 56.4% and increase of 29.6%. Further, quantity of sensori-stimulation was found to have a stronger relationship than quality of parental contact, when related to same-sex relationships (see Table 11).

Multiple regression stepwise inclusion was done for comparison to hierarchical inclusion of the order of variable inclusion in the regression equation so that the researcher could compare fitness of hypothesis to manner of insertion. The order specified in the hierarchical inclusion of the order of variable inclusion in the regression equation so that the researcher could compare fitness of hypothesis to manner of insertion. The order specified in the hierarchical inclusion of variables would be mandated by the order that the independent of variables' respective contribution of each variable is explained variance. The result of stepwise inclusion is found on Table 18. In both methods quantity of sensori-stimulation within same-sex dyads is entered first and contributes .318 to the explanation of variability

TABLE 17 ---- Summary by Percentage of Square of Partial when Independent Variable is Entered and Percentage of Contribution to R^2 in Order of Rank for Impact of Independent Variable on Mental Image

Variable	Partial Squared	Change in R^2
Quantity of stimulation with same sex	32.0	32.0
Quality contact with same sex	16.0	13.5
Age of Subject	7.5	3.8
Educational Level of Parent	6.0	2.9
Quantity of stimulation with opposite sex	5.0	3.5
Psychosexual Identity	.9	.5
Quality of stimulation with opposite sex	.4	.4
Total R^2		56.4*

*Difference due to rounding error

TABLE 18 --Summary of Multiple Regression Stepwise Analysis for the Prediction of Mental Self-Image by Quantity of Stimulation, Quality of Contact, Age of Subject, and Educational Level of the Parents, for Total Subjects.

Step	Variable Entered	F to Enter	B	STD Error of B		R^2 Change	Sign.
1	Quantity stimulation within same-sex dyads	15.860	.15 E-06	.4 E-07	.31809	.31808	.0005
2	Quality contact within same-sex dyads	6.364	1.60	.640	.42834	.11026	.0005
3	[a]Quantity stimulation within opposite-sex dyads	3.816	-.144	.7 E-07	.48926	.05092	.0005
4	Age of Subject	2.423	.160	.103	.52629	.03703	.0005
5	Educational level of parent	2.050	.298	.208	.55658	.03029	.0005

[a]The variable has an inverse relationship with the dependent variable.

of mental self-image. Again indicating the strength of the contribution, quality of contact within same-sex dyads is entered next and the contribution to the unexplained variance is .11026 an increase of R^2 from .31808 to .42838. Quantity of sensori-stimulation between opposite-sex parent and child is included next and was included in a reversal of the order in the hierarchical process. At the third step of both the hierarchical and stepwise inclusion the R^2 is equal to .48926. Therefore, while the order of inclusion of the variables changed, the explanation of variability remained the same. During the stepwise process two variables were not included, quality of contact with the opposite-sex parent and the development of psychosexual identity. The R^2 explained by the stepwise inclusion was .557 with five variables. The R^2 explained by the hierarchical inclusion was .563 with seven variables. The difference contributed by the eliminated variables was .006. Thus, sensori-stimulation within parent-child dyads of the same-sex did show a higher positive relationship to mental self-image than does sensori-stimulation within opposite-sex parent-child dyads. Further, quantity of sensori-stimulation between same-sex parent and child contributed a greater percentage to the child's mental self-image, than did quality of parental contact.

The second portion of the hypothesis is related to the effect of gender relationship between parent and child of the same-sex relationship or opposite-sex relationships. A comparison was made of effect of the relationship of quantity of sensori-stimulation and the quality of parental contact on the child's psychosexual identity.

Multiple Regression Stepwise Inclusion was done for comparison to hierarchical inclusion of the order of the variable inclusion in the regression equation so that the researcher could compare fitness of hypothesis to manner of insertion. The order specified in the hierarchical inclusion was that mandated by the format of the theoretical framework of the paper. The inclusion, according to stepwise inclusion of variables, would be mandated by the order that the independent variables' respective contribution of each variable's explained variance. The result of stepwise inclusion is found in Table 19. In the stepwise inclusion, quality of contact between parent and child enters the equation first. Sensori-stimulation within same-sex dyads is entered at step two. Sensori-stimulation within opposite-sex dyads is entered at the third step. Quality of contact between child and parent of the opposite-sex is entered at step five. In the stepwise inclusion, age of the subject is not entered into the regression equation. For all independent variables the significance of $\underline{F}$ indicates that the probability for predictability is weak ($\underline{p} \leq .069$). Based upon the results of the multiple regression equation, quantity of sensori-stimulation between parent and child of the same sex does not influence the development of psychosexual identity. The same would be true of opposite-sex dyads, as measured for quantity of sensori-stimulation. Quality of contact between opposite-sex dyads of parent and child is not related to psychosexual identity. However, quality of contact between same-sex dyads does relate to the development of psychosexual identity.

TABLE 19 --Summary of Multiple Regression Stepwise Analysis for the Prediction of Psychosexual Identity with Quality of Contact, Quantity Stimulation, and Mental Self-Image, for Total Subjects.

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	Quality contact within same-sex dyads	3.54	.577	.330	.09423	.09423	.069
2	[a]Quantity stimulation within same-sex dyads	1.99	-.302	.2 E-07	.14578	.05155	.074
3	[a]Quantity stimulation within opposite-sex dyads	.864	-.319	.4 E-07	.16825	.02247	.112
4	[a]Quality contact within opposite-sex dyads	.423	.387	.636	.17944	.01119	.176
5	Mental Self-Image	.226	.375	.079	.18548	.00604	.265

[a]The variable has an inverse relationship with the dependent variable.

Pearson Product Moment Correlation Coefficient was used to test the relationship between quality of parental contact and quantity of sensori-stimulation with psychosexual identity for same-sex and opposite-sex parent-child dyads. Table 20 illustrates a comparison between Zero Order Correlation Coefficients for same and opposite sex parent-child dyads. A review of the correlations reveal little correlation between quantity of sensori-stimulation and interaction with either same-sex or opposite-sex, for the total sample, with psychosexual identity. Quality of opposite-sex contact with psychosexual identity indicates very low correlation. However, there is moderate correlation between quality of contact with the same-sex parent on the development of psychosexual identity. This finding is consistent with the research of Hetherington and Frankie (1968) who found that maternal warmth was important for girls, but not for boys. Further analysis was done to test for effect of gender differentiation on psychosexual identity and to compare the results with the findings from hypotheses 6 & 7.

Multiple regression using hierarchical inclusion was done with quantity of stimulation within same-sex dyads, quantity of stimulation within opposite-sex dyads, quality of contact with same-sex dyads, quality of contact with opposite-sex dyads, the age of the subject, and mental self-image score. At step 1, quantity of sensori-stimulation between parent and child of the same sex was included in the equation. The multiple coefficient of determination (R^2) was .01, indicating that sensori-stimulation with the same sex explains only 1% of the variance in psychosexual identity (Table 21). At step 2, quantity of sensori-

TABLE 20---Summary of Correlation of Dependent Variable: Psychosexual Identity with Quality and Quantity of Sensori-Stimulation according to Total Parental Interaction, Interaction of Same-sex Dyads, and Interaction of Opposite-sex Dyads for Total Subjects and Subsamples of Female Subjects and Male Subjects

Variables	Total		Female		Male	
	r	p	r	p	r	p
	N = 36		n = 18		n = 18	
Total Parental Interaction for:						
Quality	.2606	.062	-.1610	.262	.3611	.070
Quantity	-.2200	.099	-.4300	.037	-.0332	.448
Same-sex Dyad Interaction for:						
Quality	.3070	.034	-.1577	.266	.3736	.063
Quantity	-.1094	.263	-.4582	.028	.1362	.295
Opposite-Sex Dyad Interaction for:						
Quality	.0671	.349	-.1112	.330	.1372	.294
Quantity	-.1000	.281	-.4130	.044	.1114	.330

stimulation between parent and child of the opposite sex entered the equation. The partial value of quantity-opposite-sex was .08797, and was inversely related to the dependent variable, explaining .007 of the unexplained variation in psychosexual identity. Both quantity of sensori-stimulation of same-sex and opposite-sex dyads contributed to an R^2 that was equal to .01961. At step 3, quality of contact with the same-sex parent was entered with a partial value of .38938 and a potential contribution of .15. Accordingly, R^2 increased to .16825 explaining variance in psychosexual identity by approximately 17%. At step 4, quality of contact with the opposite-sex parent was included with a partial value of .11597 and a squared partial value of .07 of possible contribution to the unexplained variance in psychosexual identity. At step 5, mental self-image was added to the equation with a partial value of .08582; R^2 increased minutely, from .17944 to .18548. At step 6, educational level of parent was not included. The partial value was .00378 and inclusion of the equation would have contributed .000014 to explain further the variance of psychosexual identity. The addition of variables stopped at step 6 (see Table 21).

Using hierarchical inclusion with parent-child dyads measured for gender relationship on quantity of sensori-stimulation and quality of contact indicated that the addition added only .02 of an increase in the ability of the regression equation to explain variability of psychsexual identity (see results of Hypothesis 7). The results of the differentiation according to gender relationships, raised the R^2 from .168 to .188 (see Table 22).

TABLE 21 --Summary of Multiple Regression Hierarchical Inclusion of Independent Variables: Quantity of Sensori-Stimulation, Quality of Contact, Mental Self-Image, and Age of Subject with Psychosexual Identity for Same-sex and Opposite-sex Dyads of Total Sample.

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	Quantity stimulation same-sex dyad	.41151	-.316	.213	.012	.012	.526
2	Quantity stimulation opposite-sex dyad	.25739	-.318	.360	.020	.007	.721
3	Quality contact same-sex dyads	5.17889	.577	.336	.168	.149	.112
4	Quality contact opposite-sex dyads	.42257	.387	.635	.180	.011	.176
5	Mental Self-Image	.22260	.437	.839	.185	.006	.265
6	Age of Subject	.07303	-.137	.508	.187	.002	.378

N = 36
k = 6

TABLE 22 ---Summary by Percentage of Square of Partial when Independent Variable, is Entered and Percentage of Contribution to R^2 in Order of Rank for Impact of Independent Variables on Mental Image

Variable	Partial Squared	Change in R^2
Quality contact with same-sex	12.0	14.8
Quality contact with opposite-sex	1.3	1.2
Quantity of stimulation with same-sex	1.0	1.1
Quantity of stimulation opposite-sex	.7	.8
Mental Self-Image	.7	.5
Age of Subject	.2	.2
Total R^2		18.6*

*Difference in R^2 is due to step of inclusion

Research Hypothesis 8 is supported. Sensori-stimulation between parent and child of the same-sex does show a higher positive relationship to child outcomes of mental image of self than does sensori-stimulation between parent and child of the opposite-sex. Further, although weak, sensori-stimulation between parent and child of the same-sex does show a higher positive relationship to psychosexual identity than does sensori-stimulation between opposite-sex dyads.

Quantity of sensori-stimulation has a higher positive relationship to the development of mental self-image, when measured for same-sex dyads, than does quality of parental contact. Quality of parental contact has a higher positive relationship to the development of psychosexual identity than does quantity of sensori-stimulation, when measured for same-sex dyads.

Question 2

> Do girls receive significantly higher quality of contact and greater quantity of sensori-stimulation from mothers than they do from fathers?

T - tests were computed on the means of quality of care for girls, as measured using the Observation Sheet. In all sensori-modalities, girls in these observations received more seconds of stimulation from their mothers than from their fathers. Visual and auditory stimulation reached significant differences at $p = .001$. Girls received a significantly higher quality of contact from their mothers, than from their fathers, $p = .05$ (see Table 23). An analysis of Table 24 indicated that when the total sample's data was compared with the subsample of girls, the significance for the probability of T declined for the total sample, for quality, visual and auditory stimuli.

TABLE 23 --Summary of T-Tests of Means of Sensori-Stimulation Within Parent-Child Dyad for Boys and Girls with Mother and Fathers; Sensori-Stimulation as Tactile, Visual, and Auditory for Quantity and Quality of Contact.

Variable	Means		T Value	Significance
	Mother n=18	Father n=18		
Girl				
Quality	3.79	3.59	2.38	.05
Quantity:				
Tactile	136.89	83.22	1.03	--
Visual	116.00	39.44	5.25	.001
Auditory	605.22	144.89	7.06	.000
Boy				
Quality	3.65	3.27	2.53	.02
Quantity:				
Tactile	55.11	53.17	.04	--
Visual	57.67	44.00	1.12	--
Auditory	342.67	127.22	2.98	.01

TABLE 24 --Summary of T-Tests of Means of Sensori-Stimulatiom Within Same and Opposite-Sex Dyads of Parent and Child: Sensori-Stimulation as Tactile, Visual, and Auditory for Quantity and Quality of Contact,

Variable	Means		T Value	Significance
	Same n=36	Opposite n=36		
Total Sample				
Quality	3.53	3.62	.56	--
Quantity:				
Tactile	95.03	69.17	.53	--
Visual	80.00	48.56	1.83	.07
Auditory	366.22	243.78	1.52	.20

Question 3

Do boys receive significantly higher quality of contact and quantity of sensori-stimulation from fathers than they do from mothers?

T - tests were computed on the means of quality of care, using the Observation Sheet, between same-sex and opposite-sex dyads. In all sensori modalities, boys received more seconds of sensori-stimulation from their mothers, than from their fathers. In all modalities, only the auditory modality showed significant variance ($p = .01$). Boys received significantly higher quality of contact from their mothers, than from their fathers ($p = .02$).

Based upon the questions and the variance in quality and quantity of parent-child interaction, further analysis was done to determine the impact of same-sex and opposite-sex interaction for subsamples of boys and girls. Multiple regression was continued to determine whether sensori-stimulation between mothers and fathers with sons and daughters affected child outcomes of mental self-image and psychosexual identity, when measured for quantity and quality.

Prior to multiple regression, examination of the Pearson Product Moment Correlation Coefficient was used for analysis of patterns indicative of significant interaction. Analysis of Table 25, of the correlation between mental self-image with opposite-sex sensori-stimulation according to the specific modalities of auditory, visual, and tactile interaction indicates that there are no significant correlations for either boys and mothers or daughters and fathers. There was a high positive correlation for quality of parental

TABLE 25-- Summary of Correlations Between Mental Self-Image Score and Independent Variables of Opposite-Sex Interaction as: Overall Quantity stimulation and Sensori-modalities of Auditory, Visual, and Tactile, Quality of Contact with Parent, and Age of Subject for Total Sample and Subsample of Male and Female Subjects.

Variable	Total		Female		Male	
	r	p	r	p	r	p
Overall Quantity Stimulation	-.1192	.244	.1160	.323	.1108	.331
Quantity of Auditory Stimulation	-.2582	.064	-.0616	.414	.0856	.368
Quantity of Visual Stimulation	-.1397	.208	.1959	.217	.0661	.397
Quantity of Tactile Stimulation	-.0781	.325	.1390	.291	.2704	.139
Quality of Parental Contact	.1869	.138	.6133	.003	-.1323	.300
Age of Subject	.2191	.099	.0082	.487	.3909	.054
Total Subjects	N = 36		n = 18		n = 18	

contact between girls and fathers and the girls' mental image of self, p = .003.

Pearson Product Moment Zero Order Correlation of Mental self- image and same-sex quantity of sensori-stimulation indicates a correlation between fathers and sons for the sense modality of auditory, r = .5499; visual, r = .7076; and tactile, r = .5027. Thus, sensori-stimulation between fathers and sons would appear to correlate positively with the son's mental image of himself. For mothers and daughters, visual interaction correlates with the daughter's mental image of herself. The correlation between mother and daughter for quality of contact with mental self-image of the daughter is r = .4971. The correlation for father and son, for quality of contact with mental self-image is .3950 (Table 26).

Examination of Pearson Product Moment Zero Order Correlation indicates that correlation between psychosexual identity and sense modalities of quantity of sensori interaction between fathers and sons show no areas of significance (see Table 27). Correlation between mothers and daughters, according to specific sense modality does not correlate with psychosexual identity. The summary of correlations between fathers and daughters and mothers and sons indicate that the probability of a positive relationship between quality of parental contact with psychosexual identity is insignificant. There is an inverse relationship between fathers and daughters for tactile sensori-stimulation with the daughter's development of psychosexual identity, r = -.4509 (see Table 28).

TABLE 26 -- Summary of Correlations Between Mental Self-Image Score and Independent Variables of Same-Sex Interaction as: Overall Quantity stimulation and Sensori-modalities of Auditory, Visual, and Tactile, Quality of Contact with Parent, and Age of Subject for Total Sample and Subsample of Male and Female Subjects.

Variable	Total		Female		Male	
	r	p	r	p	r	p
Overall Quantity Stimulation	.5641	.001	.4056	.046	.5550	.008
Quantity of Auditory Stimulation	.5992	.001	-.0503	.421	.5499	.009
Quantity of Visual Stimulation	.7002	.001	.4852	.021	.7076	.001
Quantity of Tactile Stimulation	.4739	.002	.3424	.082	.5027	.017
Quality of Parental Contact	.5036	.001	.4971	.018	.3950	.052
Age of Subject	.2196	.099	.0082	.487	.3909	.054
Total Subjects	N = 36		n = 18		n = 18	

TABLE 27 -- Summary of Correlations Between Psychosexual Identity with Independent Variables of Same-Sex Interaction as: Overall Quantity Stimulation, Sensory Modalities of Auditory, Visual, and Tactile, Quality of Contact with Parent, Age of Subject, and Mental Self-Image Score for Total Sample and Subsample of Female and Male Subjects.

Variable	Total		Female		Male	
	r	p	r	p	r	p
Overall Quantity Stimulation	-.1094	.263	.4582	.028	.1362	.295
Quantity of Auditory Stimulation	.1841	.141	.0553	.412	.0745	.384
Quantity of Visual Stimulation	-.0813	.319	-.3943	.053	.0410	.436
Quantity of Tactile Stimulation	-.0021	.495	-.1946	.220	.0847	.369
Quality of Parental Contact	.3070	.034	-.1577	.266	.3736	.063
Age of Subject	.0551	.373	.1686	.252	-.0285	.455
Mental Self-Image Score	.1572	.180	-.1223	.314	.1462	.251
Total Subjects	N = 36		n = 18		n = 18	

TABLE 28 -- Summary of Correlations Between Psychosexual Identity with Independent Variables of Opposite-Sex Interaction as: Overall Quantity Stimulation, Sensori-Modalities of Auditory, Visual and Tactile, Quality of Contact with Parent, Age of Subject, and Mental Self-Image Score for Total Sample and Subsamples of Male and Female Subjects.

Variables	Total		Female		Male	
	r	p	r	p	r	p
Overall Quantity Stimulation	-.1000	.281	-.4130	.044	.1114	.330
Quantity of Auditory Stimulation	-.1013	.278	-.0444	.311	-.0225	.465
Quantity of Visual Stimulation	-.1080	.265	-.4360	.190	.1873	.359
Quantity of Tactile Stimulation	-.0779	.326	-.4509	.030	.1703	.250
Quality of Parental Contact	.3070	.034	-.1112	.330	.1372	.294
Age of Subject	.0561	.373	.1686	.252	-.0285	.455
Mental Self-Image Score	.1572	.180	-.1223	.314	.1462	.281
Total Subjects	N = 36		n = 18		n = 18	

Analysis of multiple regression stepwise inclusion (Table 29) indicates that for girls, quality of contact with fathers contribute .376, or 38%, of the explanation of variance in the mental image of self. Quantity of sensori-stimulation between father and daughter has an inverse effect upon the variability of mental self-imagery in the daughter and explains .03 of the variance, while sensori-stimulation between the child and the mother has a positive effect and contributes .02 for a total R^2 equal to .42500.

Analysis of multiple regression stepwise inclusion (see Table 30) indicates that for boys, quantity of sensori-stimulation between father and child contributes .31 to the explanation of variance in the child's development of the mental image of self. Quality of contact between father and son contributes .10 to the explanation of variance in mental self-image. Contact between mothers and sons, as measured for parental quality, has an inverse relationship on the son's mental image of self, with an increase in R^2 equal to .097. Thus, the quantity of sensori-stimulation between father and son appears to be related to the son's development of a mental self-image, with the quality of contact between father and son positively related, and the quality of contact between mother and son, inversely related for a R^2 equal to .49760. Therefore, 50% of the variance in mental self-image in boys would be explained by the independent variable: sensori-stimulation between father and son, quality of contact between father and son, and quality of contact between mother and son.

TABLE 29 -- Summary of Multiple Regression Stepwise Analysis for the Prediction of Mental Self-Image by Quantity of Stimulation, Quality of Contact, for Female Subjects.

Step	Variable	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	Quality Contact, Opposite-sex dyads	9.650	4.96	1.99	.37612	.37612	.007
2	[a]Quantity stimulation within opposite-sex dyads	.628	-.963	.1 E-06	.40118	.02506	.021
3	Quantity stimulation within same-sex dyads	.580	.316	.4 E-07	.42500	.02382	.046

[a]The variable has an inverse relationship with the dependent variable.

TABLE 30 ---Summary of Multiple Regression Stepwise Analysis for the Prediction of Mental Self-Image by Quantity of stimulation, Quality of Contact, for Male Subjects.

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	Quantity stimulation within same-sex dyads	7.123	.229	.8 E-07	.30805	.30805	.017
2	Quality Contact within same-sex dyads	2.457	.996	.509	.40543	.09738	.020
3	[a]Quality Contact within opposite-sex dyads	2.568	-1.680	1.05	.49760	.09270	.019

[a]The variable has an inverse relationship with the dependent variable.

Further analysis was done to determine the effect of quantity and quality of parental contact between girls and boys with mothers and fathers on the development of psychosexual identity. Multiple regression with stepwise inclusion was used with each independent variable. Through stepwise selection, the three variables that contributed the greatest explanation of variability of the equation would be retained in the equation, and the rest would be excluded. To measure the variability in psychosexual identity with quality and quantity of contact between girls and parents, the independent variables remaining in the equation were: quantity of stimulation between mothers and daughters, entered at step 1 and contributing 21% to explanation of variability; quantity of stimulation between fathers and daughters, an inverse relationship, contributing .067 to the explanation; and quality of contact between mothers and daughters contributing .06 and increasing total explanation to .336. For girls, the division of the sample into the subsample of girls provided an increase in the predictability of variability of psychosexual identity from .18548 to .33587 or by 15% (see Tables 19 and 31).

For the subsample of male subjects, quality of contact was entered at the first step and contributed 14% to the explanation of variability, age of the subject was entered next and contributed .009. Quantity of sensori-stimulation was added at the third step and the total explanatory effect of the variables

TABLE 31 -- Summary of Multiple Regression Stepwise Analysis for the Prediction of Psychosexual Identity by Quantity of Stimulation and Quality of Contact, for Female Subjects.

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	[a]Quantity stimulation within same-sex dyads	4.25	-.337	.2 E-07	.20997	.20997	.056
2	[a]Quantity stimulation within opposite-sex dyads	1.37	-.689	.4 E-07	.27697	.06600	.890
3	Quality Contact within same-sex dyads	1.26	1.10	.98	.33587	.05990	.115

[a]The variable has an inverse relationship with the dependent variable.

was equal to .15727. A comparison of the analysis shown in Table 32 for male subjects and Table 19 for total subjects indicates that when the subjects were divided into male subsamples and female subsamples the predictability of the model decreases for male subjects from .18548 to .15727 for the amount at the end of insertion of variables. However, the number of variables that can be added to the regression equation can be no greater than k (the number of variables) times 5 equal to the number of subjects (see page 83). The total number of subjects allowed 7 variables. When the subjects were divided into subsets, k could be no greater than 3. If the total number of k for the Total sample was equal to 3, or the equation stopped at inclusion of the third variable, R^2 would be equal to .168 (see Table 14), a difference of 1% when compared to the subset of males. However, the significance of F indicates that the variability of the model is not reliable, as F is insignificant at .265 (Table 31) and .479 (Table 32).

Question 4

> Does a specific sense contribute to child outcomes: mental self-image and psychosexual identity more than the intermodal contribution of senses?

Examination of the Pearson Product Moment Zero Correlations indicates that for same-sex dyads, visual interaction appears to have the strongest correlation for girls to mental self-image; and for boys, visual interaction appears to be most highly correlated with mental self-image. For correlation between same-sex dyad and psychosexual identity, again, visual stimulation appears

TABLE 32 -- Summary of Multiple Regression Stepwise Analysis for the Prediction of Psychosexual Identity by Quality of Contact, Quantity of Stimulation, and Age of Subject for Male Subjects.

Step	Variable Entered	F to Enter	B	STD Error of B	R^2	R^2 Change	Significance
1	Quality Contact within same-sex dyad	2.595	.549	.366	.13957	.13957	.127
2	[a]Age of Subject	.149	-.3 E-01	.7 E-07	.14801	.00844	.301
3	quantity stimulation within same-sex dyads	.154	.2 E-07	.6 E-07	.15727	.00927	.479

[a]The variable has an inverse relationship with the dependent variable.

to have the highest correlation for girls. Correlations are weak for sensori-stimulation with psychosexual identity, for boys for each modality. Correlations within opposite-sex dyads for quantity of sensori-stimulation with either mental self-image or psychosexual identity are weak. The correlation matrix (Table 33) was examined for analysis of relationships between sense modalities. Correlations ranged from a low of $\underline{r}$ = .1856, for visual with tactile stimulation within opposite-sex dyads of male subsamples, to $\underline{r}$ = .8716, for visual with auditory stimulation within same-sex dyads of male subsamples. The higher correlations would contribute to multicollinearity suggesting the use of the multiplicative model. After computing the multiplicative model, wherein the specific sense modalities were combined into a multimodal product, analysis was attempted to determine the individual contribution of each variable through the use of multiple regression hierarchical inclusion.

The hierarchical method of inclusion was used for analysis prior to the stepwise method because the design of this research was explanatory and a causal structure was postulated between the independent variables and the dependent variable of mental self-image. Further, mental self-image was hypothesized to lead to the development of psychosexual identity. To determine the strength of the independent variables in predicting or explaining variability in the dependent variables, stepwise inclusion was used.

Summary of the Findings

A summary of the findings indicates that the causal model (Figures 3, 4, and 5) gains strength when the gender relationship becomes a component of the path model. The Null Hypotheses 1, 3, 4, 5, 6, and

TABLE 33 -- Correlations between Sensory Modalities: Auditory, Visual, and Tactile for Total sample, Female subsample, and Male subsample of Same-sex and Opposite-sex dyads.

Modality	Auditory	Visual	Tactile
Same-sex Dyad			
Total:			
Auditory	1.0000	.5837	.4400
Visual	.5837	1.0000	.3179
Tactile	.4400	.3179	1.0000
Female:			
Auditory	1.0000	.1979	.2941
Visual	.1979	1.0000	.0375
Tactile	.2941	.0375	1.0000
Male:			
Auditory	1.0000	.8716	.5733
Visual	.8716	1.0000	.6939
Tactile	.5733	.6939	1.0000
Opposite-sex Dyad			
Total:			
Auditory	1.0000	.5702	.3261
Visual	.5702	1.0000	.4711
Tactile	.3261	.4711	1.0000
Female:			
Auditory	1.0000	.4858	.2529
Visual	.4858	1.0000	.8553
Tactile	.2529	.8553	1.0000
Male:			
Auditory	1.0000	.5912	.3964
Visual	.5912	1.0000	.1856
Tactile	.3964	.1856	1.0000

For Total sample N = 36
For Female subsample n = 18
For Male subsample n = 18

7 were not rejected, as quantity of sensori-stimulation appeared to be unrelated to the development of either mental self-image, or psychosexual identity. Yet, when gender relationships were added to the analysis, the explanation of variability in the dependent variable improved. Further, while quantity of sensori-stimulation appeared to have a positive relationship with mental self-image when gender relationship was added to the equation, the relationship was not found to be significant in the development of psychosexual identity. For psychosexual identity, quality of parental contact had a higher positive relationship, than did quantity of sensori-stimulation. The alternative hypotheses were not supported if the significance of the correlation coefficient (r) was greater than $p \leq .05$. The null hypotheses were rejected or not rejected as follows:

Null Hypothesis 1 was not rejected. There was insufficient evidence that quantity of sensori-stimulation explained mental self-image in the child.

Null Hypothesis 2 was rejected, while the Research Hypothesis 2 was established. Quality of sensori-stimulation was positively related to the mental self-image in the child.

Null Hypothesis 3 was not rejected. There was insufficient evidence that quantity of sensori-stimulation had a greater relationship to mental self-image, in the child, than did quality of contact.

Null Hypothesis 4 was not rejected. There was insufficient evidence that quantity of sensori-stimulation explained the development of psychosexual identity in the child.

Null Hypothesis 5 was not rejected. There is insufficient evidence that quality of parental contact explained the development of psychosexual identity in the child.

Null Hypothesis 6 was not rejected. There was insufficient evidence that quantity of sensori-stimulation had a greater relationship to the development of psychosexual identity, than did quality of parental contact.

Null Hypothesis 7 was not rejected. There was insufficient evidence that mental self-image in the child was significantly correlated with the development of psychosexual identity.

Null Hypothesis 8 was rejected for mental self-image, but was not rejected for psychosexual identity. Quantity of sensori-stimulation between parent and child of the same-sex showed a positive relationship to child outcomes of mental image of self. There was insufficient evidence that quantity of sensori-stimulation between parent and child of the same-sex parent and child positively affected psychosexual identity in the child.

CHAPTER V

CONCLUSIONS, DISCUSSION, LIMITATIONS AND IMPLICATIONS

In this research the effects of sensori-stimulation between same-sex and opposite-sex parent-child dyads on the child's mental self-image and the development of psychosexual identity were measured. Sensori-stimulation was measured for quantity of auditory, visual, and tactile contact between the parents and the subject in seconds of contact time. Parental contact was measured for quality according to a five point Likert Scale for each parent-child interaction. Mental self-image was measured through the Goodenough-Harris Drawing Test, wherein the subject was asked, "Draw a picture of yourself." Psychosexual identity was measured through a Gender Consistency Scale.

The subjects in this study were 36 children, 18 boys and 18 girls, aged four to five years, and both of their parents. Criteria for selection were parental availability and age of the child. The population from which the sample was randomly selected was the Flint Area Parent-Child Nurseries (FAPCN). The families were studied in their home. Administration of the research instruments required approximately 1½ to 2 hours of family time. A large box of toys was used during the observation period to entice parental involvement and to provide a focal point for the child's attention, keeping the child in the area of observation.

Moderate significance was related to the effect of quantity of sensori-stimulation from both parents and the development of mental imagery of self in the subject. Quantity of sensori-stimulation from both parents was not related to the development of the child's psychosexual identity. There was an increase in the regression equation's predictive power when the parent-child relationship was differentiated into comparison for same-sex and opposite-sex interaction. The most important finding of this research is that quantity of sensori-stimulation appears to correlate with the formation of mental self-imagery in children when the interaction between parent and child is of the same-sex.

Conclusions

The following conclusions were supported through analysis based on parent-child dyads undifferentiated according to gender and suggest that:

1. Psychosexual identity in children is not significantly affected by either quality or quantity of sensori-stimulation between parents and children.
2. Mental imagery in children is affected positively and to a greater degree when the quality of parental contact is high between parents and children.
3. Mental imagery is positively correlated with quantity and quality of parent-child contact, with quality being greater.
4. Mental imagery and psychosexual identity are not significantly correlated and the causal relationship, as

predicted, was not established.

The following conclusions were supported by the analysis of data based on opposite-sex dyad interaction:

5. Mental self-imagery in a child is not correlated with quantity of sensori-stimulation in either mother-son or father-daughter dyads.
6. Mental self-image of girls in father-daughter dyads is positively correlated with quality of sensori-stimulation, while the correlation is not significant for boys in mother-son dyads.
7. Psychosexual identity of boys is not significantly correlated with quality of contact between mothers and sons. However, the quality of contact and psychosexual identity are positively correlated for girls in father-daughter dyads.

The following conclusions were supported by the analysis of data based on same-sex dyad interaction:

8. Psychosexual identity of sons is moderately correlated with quality of contact between fathers and sons.
9. In mother-daughter dyads the quality of contact does not significantly affect psychosexual identity.

Other conclusions were supported by the analysis of data based on specific sensory modalities of auditory, visual, and tactile stimulation with mothers and fathers and children:

10. Mothers provide significantly more quality contacts to both boys and girls, more auditory contacts to sons, and more visual and auditory contacts to daughters than do fathers.
11. When considering all parents and children in either same or opposite-sex dyads the correlation is insignificant between psychosexual development and quantity of sensori-stimulation.

The conclusions presented above are based upon analysis that supported the alternative, or research hypotheses. The hypotheses were supported if the probability that the test statistic used (F) was ($p \leq .05$) equal or less than .05.

The following section will contain a discussion of the analysis of data using a family ecological model as the theoretical framework upon which this research is based. The conclusions and the discussion are based upon the specific sample used in this research and can not be generalized to other samples with differing characteristics.

Discussion

The family ecological framework borrows heavily from early theories including psychodynamic theory, cognitive theory, and social learning theory. In this research, concepts from earlier theory were combined, the child and parent were defined as a system, and sensori-stimulation was perceived as an energy flow between the unit of child and parent(s).

While the quantity of energy, in the form of sensori-stimulation, is considered as being of primary importance to the theoretical orientation of this paper, an important variable would be ignored if the quality of contact was not measured in the context of parent-child interaction. In an ecological system, the feedback between units is based upon a reciprocal interaction. While it was the parent's interaction with the child that was measured for quantity, or the effect of the parent on the child, the child's choice of parent-interaction, with mother or father, might have been influenced through the quality of parental contact. For the total sample, quality of parental contact with the same-sex parent was positively correlated with self-imagery (r = .4971) and for boys the correlation between mental-self image and quality of parental contact was r = .3950. Observation of parent and child interaction indicated that if the parent of the same sex interacted positively with the child, the child was positively motivated to interact. Visual interaction was measured when the child looked at the

parent, and stimulated the retina of the child. If the parent ignored the child, the child would decrease visual contact. For boys, the correlation between quality of contact and visual stimulation is $\underline{r}$ = .4279. For girls, the relationship between quality of contact and visual interaction is $\underline{r}$ = .6610 for the same-sex parent and $\underline{r}$ = .5136 for opposite-sex parent. Thus, where the contact between parent-child dyads was positive children appeared to look at that parent to a greater extent than when parental contact was neutral or negative.

In the use of the ecological framework, the child is an integrated being interacting with the environment through an exchange of energy. In this approach, the environment consists of the parents and the child is an active seeker of information via engagement of the senses through which energy travels in the form of sensori-stimulation. The stimulation of the senses leads to stimulation of nerve impulses that form wave fronts. The waveform from a sensori-stimulation integrates with other waveforms from other senses.

Thinking is a step by step series of operations on information. The child uses the sense modality to gather bits of information. The initial level of information is gathered through interaction with the environment via the senses. The environment is the mirror of the external representation of the event that leads to memory. As the child forms a mental self-image, it is postulated that the parent becomes the

environmental mirror and through interaction with the child stimulates the senses sending impulses via the child's central nervous system to the brain wherein information is coded. The coded information is retained as memory.

Memory is strengthened by input from several senses. The coding of information has been likened to a hologram (Pribram, 1971; Wilbrum, 1980). Stimuli generate a wave pattern or waveform between neuronal synapses (junctions) of different strengths, shapes, and frequencies that can be mathematically calculated as a Fourier Transform, or formula of information. This 'formula' becomes the coding that allows the retention of memory to be coded into an image and the image coded back into storage. The coding of information into memory, according to the holographic model, is dependent upon the point of interference of waveform with waveform, for it is at that point that the Fourier Transform is formulated.

Thus, it appears that as children receive sensori-stimuli from the environmental mirror, the mirror that represents the self would produce the stimuli from which coding is effected. If coding occurs through waveforms and different sensori-systems merge, then memory will be enhanced through impact from parental interaction wherein auditory, visual, and tactile stimulation is received by the child. The greater the stimuli between parent and child, the greater the child's mental image of self. For children

in this sample, the statistical measures did not reach a significant level when children were measured in terms of overall parental interaction with mental self-image formation. The significance of interaction between parent-child dyads on mental self-imagery occurred only when the dyads were differentiated as same sex or opposite sex. When division occurred for both male and female subsamples it was found that there was a moderately strong correlation (r = .5640) between same-sex sensori-stimulation and mental imagery in the child. Thus, it would appear that some degree of differentiation by the child was occurring wherein selective attention was given to the same-sex parent.

The children in this research were unable to understand the properties of gender as physical and were assessing gender based upon external characteristics that they could see, touch, or hear, that indicated that they, or another person, were male or female. They were selectively attuned to the external properties of the parent of the same sex as having observable qualities that they identified as similiar to themselves.

In an environment relevant stimuli are embedded in a complex array of irrelevant stimuli. Becoming selectively attuned to specific environmental information is an initial process in differentiation according to a given property. In this research, relevant stimuli for mental self-imagery appear to be linked, by the child, to the parent of the same sex.

According to the results of statistical measures in this research children were selectively attending to the sensori-stimulation received from the parent of the same-sex or orienting to the stimuli from the parent of the same-sex. For female subjects, sensori-stimulation between mother and daughter correlated (r = .4086) with mental self-image. For male subjects sensori-stimulation correlated (r = .5550) with mental imagery when measured between father and son.

When the child is faced with a continuous bombardment of stimuli, some of the stimuli are ignored and no longer elicit an orienting response (OR) of the intensity elicited when the information was pertinent, relevant, or novel. This is called habituation to a stimuli. When habituation occurs children seek other novel experiences, or look at different aspects of the familiar stimuli that they had not noticed earlier (Weizmann, Cohen, and Pratt, 1971). Mothers in this sample were more often at home with the children and the fathers were all employed, thus children may have received more stimulation from the mother. If the children did differentiate according to gender relationship, and if an amount (unknown) of exposure leads to habituation, it might be that the inverse correlation between mental self-image of girls with mother-daughter interaction, as compared to father-son, is the result of habituation. Further, it might be postulated that lowered correlation between father-daughter sensori-stimulation and the girl's mental self-image is the result of nonattending

and a response toward further differentiation. During the observation period, girls received an average of 10 minutes of verbal stimulation from their mothers which might have resulted in some habituation to auditory stimulation. Boys received 6 minutes of verbal stimulation from their mothers. Girls received slightly less than two minutes of verbal stimulation from their fathers and boys received two minutes of verbal stimulation from their fathers. For girls, auditory stimulation from the mother has a slightly inverse relationship with mental self-image (r = -.0503). While this indicates almost no correlation, it might indicate that although verbal interaction was high, the contribution to mental self-image was low and the impact of the other sense modalities contributed to the outcomes of mental self-imagery (r = .3424, for tactile; r = .4852 for visual). For boys, where the father was not present most of the day, and where there was no elevated sensori modality between father and son, the correlations are moderate to high (r = .5499 for auditory; r = .7076 for visual; and r = .5027 for tactile) with the son's mental self-image. For boys, the mean mental image score was 7.11 and for girls the mean score was equal to 11.13. The girls had a mental image score indicative of a greater ability to form a mental image of themselves. When stimuli are relevant, or meaningful, it takes many more times to habituate to the stimuli than when stimuli are irrelevant. Yet, at some

point in the interaction between one's self and the environment, the importance of the stimuli decreased. Further research is necessary in order that conclusions regarding the effect of habituation can be determined.

Although there is evidence that the children in this research were differentiating according to gender relationships, there is no evidence to support the hypotheses that an increase in sensori-stimulation led to increased ability to identify unseen properties as male or female. This is an interesting phenomena and could indicate that the child must form a strong mental image of self prior to further mental representation of self as male or female, according to remembered properties as suggested in the gender conservation scale.

For the total sample the mean score on the Gender Consistency Scale was 5+. All children could answer correctly whether they were a boy or a girl, and all could correctly identify a picture of a female and male as a man or woman. One boy and one girl were unable to respond correctly to the question, "When you were a little baby were you a little girl, or a little boy?" The children who missed that question had younger siblings at home that were of the opposite gender. The children apparently were confused because gender was one property and baby was another, leading to an inability to answer correctly as they were unable to conserve the dual information of both properties. Two boys thought that they could be the opposite sex, if they wanted to be, and one boy said that he would want to be a girl.

The children who expressed that they could change their gender were influenced more by the change of external appearance of the dolls (Appendix C, Illustrations 1 -4) than their memory of the dolls as initially presented (Appendix C, illustration 2). Even when the children were told, "This is a boy. If I put this dress on, will he be a girl or a boy?", the majority of subjects (85%) ignored the wording and attended to the visual stimuli of the doll in the dress (Appendix B, Male form).

Only 3 of the male subjects and 2 of the female subjects said that gender would remain consistent for children, other than themselves, despite external change (see G7, Tables 9 and 10). Therefore, only 14% of the subjects could differentiate according to nonobservable properties. This lack of understanding of the physical and permanent aspect of gender would indicate that children would have to remain visually, auditorily and tactilly close to their parents until such concepts are internalized. It would indicate that while they have formed a mental image of themselves, gender differentiation is unfinished. When a child can balance an understanding of more than one property at a time, the child is entering the stage of concrete operations (Piaget, 1962). Concrete operations occur at approximately seven years of age and begin the understanding of the permanence of properties. When children have achieved the ability to conserve they are no longer apt to base conclusions only on the basis of appearance.

Limitations

A major limitation of this research was the size of the sample (n = 36). A small sample reduces the probability of significant findings as the test statistic is affected by the degrees of freedom determined by the size of the sample. A small sample's test statistic is more strigent than it is when the degrees of freedom are greater due to a larger sample size. A larger sample would have permitted the inclusion of a greater number of variables that would have contributed to the predictability of the regression equation in explaining variability among dependent variables.

Another limitation of this research was the minimal amount of time available to observe families. The brief interval in the life of the subject and the family may or may not be an adequate representation of family interaction throughout the subject's life up to the time of the research. Further, the intrusion, by a stranger, would present a novel, or new, experience and the family's response to the intrusion might have changed if, through repeated visits, the family had an opportunity to adapt. The research would be strengthened if observation had occurred at intervals from the birth of the child, yearly, to the present time.

This research was limited by the funding available to the researcher for the analysis of data. The Parent Report provided information on parental involvement with the child during the period of birth to the present time. Yet, analysis of the many variables would have required increased computer time and overloaded the regression equation (Draper

and Smith, 1966).

An attempt was made to limit this research to families that were intact, yet such restraint disallowed information pertinent to single-parent families.

Finally, the Gender Consistency Scale might have provided a measurement that lacked precision for measuring the developmental steps that determine an understanding of properties as children progress from preoperational thinking to concrete operations. Concrete operations occur at approximately seven years of age, two or three years beyond the age of the children in this research sample. Perception, according to the developmental concepts of gender, might be conceptually defined and operationalized according to more precise steps in determining the progression of gender as understood by young children.

Several variables were not statistically controlled and might have provided an increase in the understanding of variability. The amount of time parents spent with the child was not measured. Differences in children's responses were not measured in relationship to the time parents were working, involved in volunteer activities, or pursuing activities outside of the home.

Finally, as mentioned in Chapter III, the final selection of subjects was the result of acceptance by 41 of the 77 families that were randomly selected. The acceptance of some, but not all, of the families randomly selected created a bias in the sample selection.The result of such bias might have been that the families that were studied had greater confidence in their parenting skills, than did the families

that declined and were not studied. Thus, the quality of parent-child might have been affected by the selection of the sample. As parents were told, in the letter they received, that the researcher was interested in studying parent and child interaction; those parents that were uncomfortable interacting with their children might be assumed to be uncomfortable with observation. One of the limitations of this study might be the degree of competence and even though there was variability about the regression line, such variability could be assumed to be uncharacteristic of the population representing only moderate to high quality of interaction.

Implications

There are several implications for further research. The first series of implications would require a larger sample than the 36 subjects selected for this study. Further research might involve an inclusion of the amount of time parents were home with their child, the impact of older siblings, baby sitters, or other caregivers in terms of quantity of sensori-stimulation received by the child. Greater variability in sample selection might be suggested, in which subjects are chosen from a variety of caregiving or preschool programs serving children with a variety of socio-economic backgrounds.

Another important variable that was not measured was the frequency of parental contact. Habituation occurs if stimulation is provided over a period of time and the receiver adjusts to the continuous impact. The auditory stimulation that occurred when the parent read a book, or the tactile stimuli that occurred as the parent

remained in constant body contact might have resulted in habituation with the effect of diminished impact upon the child (Sokolov, 1960).

The effect of changes in quantity of sensori-stimulation by specific parent-child interaction that occurs when children spend a portion of time with one parent and then another period of time with the other parent, as is often the case when parents are divorced, could add an important dimension to the set of variables used in the current research.

In the research by Lamb (1976) two researchers were used, one male and one female, to observe the families. An additional observer could enhance future study through providing a measurement of paternal interaction when there is another male present. If two observers were present each could measure different variables of interaction between parents and child and parent to parent. One researcher could measure the effect of the parent upon the child and the other researcher might measure the relationships of interaction between the parents. Such questions might be researched as: Does child-interaction with one parent hinder the interaction of the other?, Does one parent support or complement the interaction of the other in relationships of parent-parent dyad, or parent-child dyad?, and What effect does the child have upon interaction with the parent?

The effect of the selection of toys upon parental interaction could be studied to determine whether parental involvement is influenced by the selection of toys, thus biasing the study. In the current research the same toys were used through-out the study. Toys preferred

by the children and toys preferred by the parents were not studied and could provide improved accuracy in future studies.

Certainly, a longitudinal study would provide an understanding in changes in the development of mental self-image and psychosexual identity. If the researcher remained constant throughout the study, families might have the opportunity to adjust to the intrusion of the researcher's presence. Changes in interactional patterns, over time, could be measured. Lamb (1976) found, during a period of six months, that physical contact between mothers and children and fathers and children changed in frequency of contact. Mothers held infants more when they were younger and fathers were more involved with the older toddler. A longitudinal study could aid in determining changes in the impact of stimuli in affecting change. At this time it is unknown whether same-sex impact is as important to maintain mental self-imagery as the child matures or prior to the age of four.

Finally, further study would be suggested to gain greater precision in measuring the changes in the development of psychosexual identity as measured using the Gender Consistency Scale. A large portion of the children understood gender permanence as measured over time, but were unable to conserve according to the property of physical understanding. The sequential stages, preceding physical conservation as related to imitation (Piaget, 1962) of movement, deferred imitation, and classification according to use, might be studied and possibly, operationalized as providing measurement for the study of the transtional stages between gender permanence over time and gender constancy.

Summary

While the conclusions of this study can not be generalized beyond the constraints imposed through the use of a specific and homogeneous sample, as used in this research, the results do suggest that parental involvement is important to the development of the mental self-image. The mental self-image, or mental representation of self is that mental image that is used to aid in foreseeing oneself in various conditions. When faced with buying a new outfit, one might first imagine the outfit on the mental image of self. When faced with a new situation, one might imagine one's mental image of self in that situation and rehearse the demands the experience might impose. In Chapter II, mental image is discussed as developing sequentially, where the mental self-image is a more concrete foundation of self-concept.

Most of the early research that has been reported about parent-child interaction has focused on the interaction between mother and child. During the early 1970's, researchers began to study father-child interaction with young children. Early assumptions were made regarding the maternal effect of the emotional well-being of children. If children failed to develop into emotionally and socially capable youngsters, the failure was attributed to emotional neglect by the mother. In early research, researchers studying sensory deprivation observed the effects on the infant as a factor of maternal absence (Spitz, Emde, and Metcalf, 1973).

An implication of the present research is that the relationship of father and son, mother and daughter, and the interaction therein, is the vehicle through which mental self-image is based. This is not to imply that it is not important for a child to interact with the parent of the opposite sex. If the parent of the same sex represents a mirror image to the child, the parent of the opposite sex represents the complementary component. Money and Erhardt (1972) wrote,

> The ideal is for a child to have parents who consistently reciprocate one another in their dealing with the child. Then a five year old daughter is able to go through the flirtatious coquetry with her father, while the mother appropriately gives reciprocal directives as to where the limits lie; conversely, for boys (p. 186).

Although the child is identifying self with the parent of the same sex, it is the relationship with the parent of the opposite sex that will allow the practice or relationship for the purpose of family life.

Finally, during a recent workshop, parents who had participated in this research study discussed the research outcomes and the implications on childrearing. A young mother asked if it would be an advantage to her child to teach him how to draw a picture of himself. Her question was indicative of the common parental need for the child to achieve and to grow in a healthy way. She may believe that if the child's drawing improved, so would his self-image. How often it is that research results are misinterpreted by others who would "put the cart before the horse." The answer to the young mother was, "No, instead, tickle his feet (gently), wrestle with your child, have your husband

join you in the playing, bathing, holding, talking and care of your child, because through the sensory interaction your child's mental self-image will grow."

So often, in this work-away world the pressures of survival limit parent-child interaction. As more women join the work force, men are assuming child-care duties. Based upon the results of this research, the sharing of child-care could prove an advantage to the children as the child receives the sensori-stimulation received through interaction with both parents.

The child of divorced parents might have the total care from one parent, for a period of time, and then the total care received from the other parent. As mentioned in the section on implications, further research is needed to determine the effect of sensori-stimulation received periodically, rather than consistently. Yet, the concept of joint-custody has become an alternative to the single custody family (Goldstein, Freud, and Solnit, 1979; Wallerstein and Kelly, 1976).

Prior to the present research, quantity of sensori-stimulation had not been studied for effect on mental self-image and psychosexual identity. The present research is a beginning of such study. Further research is necessary to provide increased understanding.

APPENDICES

APPENDIX A

LETTERS AND FORMS FOR PARENTS

MICHIGAN STATE UNIVERSITY

COLLEGE OF HUMAN ECOLOGY
DEPARTMENT OF FAMILY AND CHILD ECOLOGY

EAST LANSING • MICHIGAN • 48824-1030

Dear Mr. and Mrs.

This letter is to request your cooperation in providing information about parent-child interaction and the manner that children use their senses to interact with their environment. This study is to be conducted among the families within the Flint Parent-Cooperative Nurseries. I have the support and permission of the FAPCN board.

Your name was randomly selected. That is, out of all the names of four to five year old children in the FAPCN, 36 names were determined by chance. Your child's name was one of those. Because the study is to follow scientific guidelines such a method of chosing families is necessary.

To gather the information I will need to visit your family for about two and one-half hours on a day that is convenient to you. I will need a time when you do not have guests and are unlikely to receive telephone calls that are lengthy. First I will have a brief interview. Then I will observe you child. I will bring some carefully selected toys with me. It is important that you remain near your child, or at least close enough that my presence will not cause insecurity. After I observe your child for a period of one hour, I will need to spend about 20 minutes (apiece) interviewing both parents and your child.

The information that I gather will be coded and your name will appear only on the envelope I bring to your home. The packet inside will contain numbers so that the packet information will remain together. Information specific to family is not an important issue, rather the overall results of family differences. The general information will be shared during a workshop and interested parents will be invited to attend.

Your cooperation is very important. If you have questions regarding this study please call me or Dorothy Komarmy. I will telephone you you within the next week and can answer any questions you may have and set a date for my visit.

Thank you,

E. Sally Van Luven

E. Sally Van Luven

PARENTAL CONSENT FORM

I understand that the information obtained through this research is to be held confidential, and that an Identification number will be used to protect my identification. I understand that the information provided through observation, interview, and the testing of the child will be used in the analysis of data, so that specific detail regarding specific families will not be assimiliated, but that this information will be used with that of other information to provide an increase in information regarding the impact of sensori stimulation on the development of children 's mental impression of self, as compared with that of others'. With this understanding I agree to participate in the research, and that the information obtained through observation, interview, and testing can be utilized for research.

_____

Signature of Parent

_____

Signature of Parent

_____

Date

I agree to the reproduction of my child's drawing, as an overhead, to be used at a parent-teacher workshop. My child's name will not appear on the picture.

_____

Signature of Parent(s)

MICHIGAN STATE UNIVERSITY

COLLEGE OF HUMAN ECOLOGY
DEPARTMENT OF FAMILY AND CHILD ECOLOGY

EAST LANSING • MICHIGAN • 48824-1030

Dear (Parent's names)

I would like to thank you for allowing me to observe (Child's name) I appreciate your cooperation and hope that my intrusion will "pay off" by increasing knowledge about the manner in which children learn through sensory interaction with their environments.

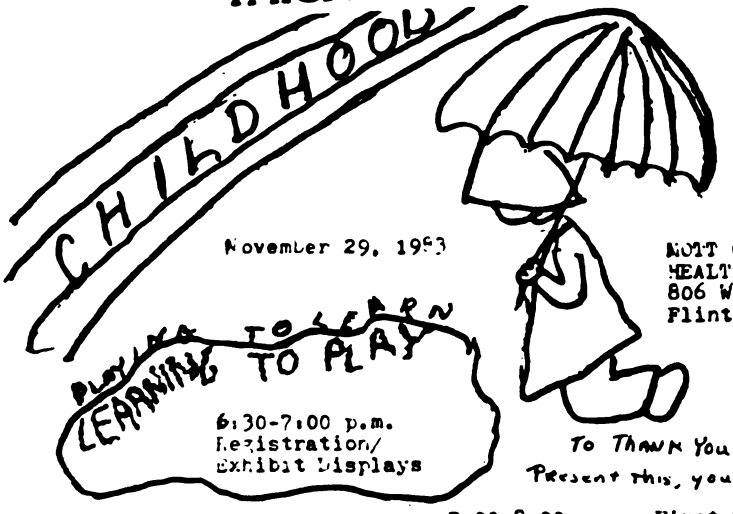
I am pleased to be able to do this research and hope to share the overall results with families in FAPCN this Fall. (Sentence added to personalize thank you)

I recognize that families have many demands upon the time they have, and that your involvement in this research was a gift of time and effort.

Sincerely,

P.S. If you would like more information about this research you can call me at my home, YYY-XXXX. I would enjoy hearing from you.

FAPCN - learning through play



November 29, 1983

6:30-7:00 p.m.
Registration/
Exhibit Displays

MOTT CHILDREN'S
HEALTH CENTER
806 W. Sixth Ave.
Flint, MI 48503

To Thank You!
Present this, your admission is
Prepaid. Sally

Choose one:

7:00-8:00 p.m. First Workshops

Choose one:

(over)

FOCUS ON FATHERING, Dan Hodgins, Mott Community College, and Teacher, FAPCN. A discussion for mothers and fathers on what we need to know about our roles and how children perceive these roles. ROOM 136

SELF-ESTEEM, Bernice Blamer, University of Michigan-Flint. How children develop self-esteem and the important roles parents play in this development. LECTURE ROOM A

HOME AS THE LEARNING CYCLE, Mark Diana. How the home contributes to formal and informal learning and its interactions with the community & preschool programs. LECTURE ROOM B

IMPACT OF SENSORY INTERACTION BETWEEN PARENT AND CHILD, Sally VanHuven, Doctoral Student, MSU. The results of research on the child's mental image of self. AUDITORIUM A

An Invitation

To thank you.

APPENDIX B

DIRECTIONS FOR ADMINISTRATION OF INSTRUMENTS

SCHEDULED APPOINTMENTS

DATE

ID no. _____ _____ _____

Time _____ _____ _____

Name:

Father _____ _____ _____

Mother _____ _____ _____

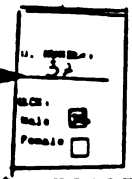
Child _____ _____ _____

Telephone number: _____ _____ _____

Directions to home:

DIRECTIONS FOR RECORDING

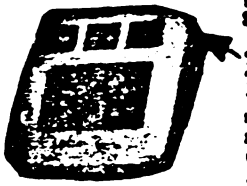
OBSERVATION SHEET



1. Check if I.D. Number is recorded and if not, record

2. Record whether child is female of male

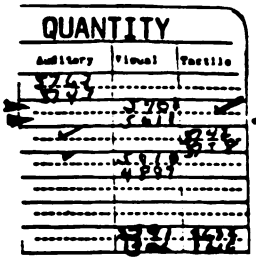
3. To record <u>sensori stimulation</u> between child and parent, record each time child interacts with the adult and the action affects the child: THE CHILD HEARS (auditory) FEELS (Touch, tactile) or looks at (VISUAL) the parent. Check if interactions is too brief to record.



Code stimulation in seconds of duration using the timer. Code for specific modality, or combination: i.e., tactile, Tactile-visual,.....

In each square record time act began, and time ended. Subtract for total time.

Timer:
The left lever is to measure tactile interaction, the middle is for verbal, the right for visual. For combination, use either lever in combination to be measured.



4. Record <u>gender relationship</u> to child:

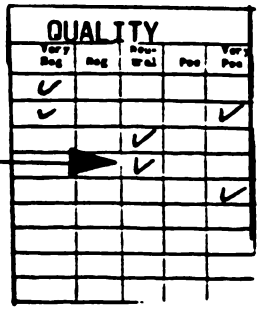
Example:

If father initiated interaction and was the same-sex as child, code:

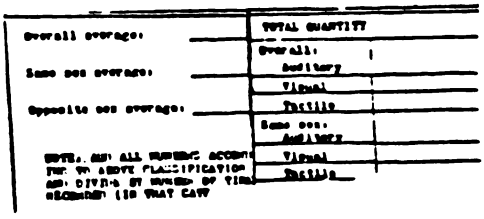
5. Record <u>quality</u> of interaction, check square for each parent child interaction in the row interaction occured.

There are five possible responses:
1) Very negative: The child reacts in pain and discomfort, such as crying, wincing...
2) negative: The child withdraws, frowns, appears depressed or saddened
3) neutral: The child displays little impact to interaction, or response can not be determined.
4) positive: The child smiles, indicates interest or enthusiasm
5) very positive: The child appears very pleased, laughs, hugs, claps, or other show of enthusiasm

Record for each interaction



6. DO NOT WRITE IN THE BOTTOM PORTION OF OBSERVATION SHEET.



REPRODUCTION OF DATA SHEET WITH THE DATA SCORED AND CODED *

OBSERVATION SHEET

GENDER RELATIONSHIP		QUALITY					QUANTITY		
Same Sex	Opp-Sex	Very Neg	Neg	Neu-tral	Pos	Very Pos	Auditory	Visual	Tactile
✓					✓		5737 5732		
	✓			✓				5736 5734	
✓						✓	5717 5711	5717 5721	5717 5716
✓					✓			5717 5765	
✓					✓		3857 3851		
✓					✓		3877 3875		
✓					✓				3877 3871
✓					✓		3834 3830		
	✓			✓				3839 3837	
✓						✓	3839 3832		3834 3813
✓						✓	3811 3806		3811 3821
	✓			✓			3744 3737		
✓				✓				✓	
✓				✓			3776 3743		
✓				✓			3741 3739	3727 3731	
✓					✓		3726 3733		3736 3731

I.D. NUMBER: 12

CHECK:
Male ☐
Female ☒

Overall average: *

Same sex average: 4
3(3) + 7(4) + 3(5) / 13

Opposite sex average: 3
3(3) / 3

NOTE: ADD ALL NUMBERS ACCORDING TO ABOVE CLASSIFICATION AND DIVIDE BY NUMBER OF TIMES RECORDED (IN THAT CATEGORY).

	*
Same sex: Auditory	43
Visual	11
Tactile	30
Opposite sex: Auditory	10
Visual	3
Tactile	0

OBSERVATION SHEET

GENDER RELATIONSHIP		QUALITY					QUANTITY		
Same Sex	Opp-Sex	Very Neg	Neg	Neu-tral	Pos	Very Pos	Auditory	Visual	Tactile
					✓		5960 5937		
							5172 5931		
							5922 5931		
				✓				5976 5975	
									8816 8812 ←
							8866 8756	8815 8810	←

I.D. NUMBER: _____

CHECK:
Male ☐
Female ☐

Overall average: _____

Same sex average: _____

Opposite sex average: _____

NOTE: ADD ALL NUMBERS ACCORDING TO ABOVE CLASSIFICATION AND DIVIDE BY NUMBER OF TIMES RECORDED (IN THAT CATEGORY).

TOTAL QUANTITY

Overall:
Auditory
Visual
Tactile

Same sex:
Auditory
Visual
Tactile

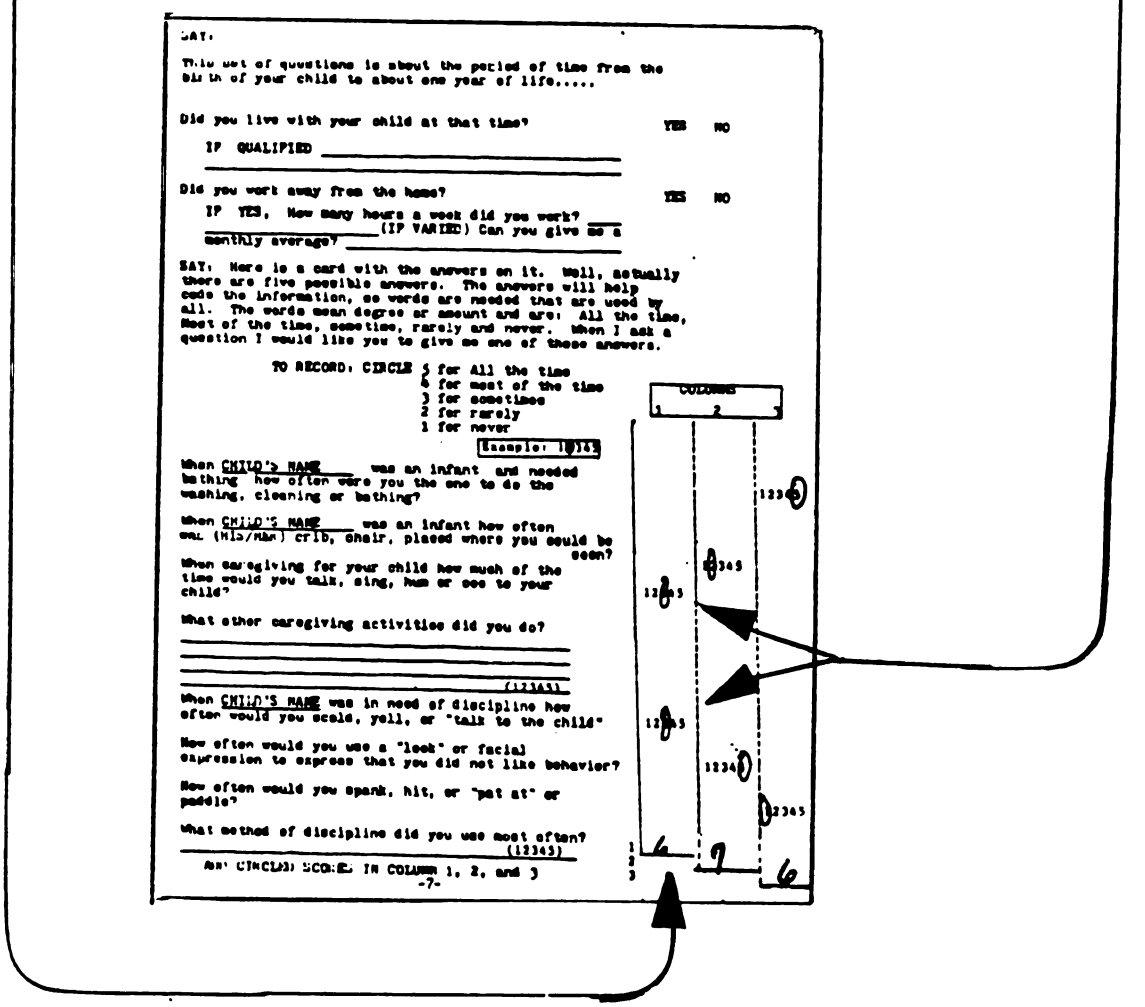
Opposite sex:
Auditory
Visual
Tactile

TO SCORE THE PARENT REPORT

1. Add numbers in each column

   Example: Column 1 has a 3 and another 3
   3 + 3 = 6

2. Enter the number in the line opposite the column number
   6
   as below:



USE FOR CODING (Code in red ink)

		Column
Respondent's ID Number	VARID _ _	1,2
Same Sex Auditory Observation	VARSX1 _ _ _ _	3,4,5,6
Same Sex Visual Observation	VARSX2 _ _ _ _	7,8,9,10,
Same Sex Tactile Observation	VARSX3 _ _ _ _	11,12,13,14
Opposite Sex Auditory Observation	VAROX1 _ _ _ _	15,16,17,18
Opposite Sex Visual Observation	VAROX2 _ _ _ _	19,20,21,22
Opposite Sex Tactile Observation	VAROX3 _ _ _ _	23,24,25,26
Same Sex Quality	VARSQ _._ _	27,28,29,
Opposite Sex Quality	VAROQ _._ _	30,31,32,
Same Sex Auditory Report	VARSR1 _ _	33,34,
Same Sex Visual Report	VARSR2 _ _	35,36,
Same Sex Tactile Report	VARSR3 _ _	37,38,
Opposite Sex Auditory Report	VAROR1 _ _	39,40,
Opposite Sex Visual Report	VAROR2 _ _	41,42,
Opposite Sex Tactile Report	VAROR3 _ _	43,44,
Age in Months of Respondent	VARA _ _	45,46,
Mental Image (Drawing Score)	VARM _ _	47,48,
Gender Consistency Scale		
Question Set 1	GC1 _	49
Question Set 2	GC2 _	50
Question Set 3	GC3 _	51
Question Set 4	GC4 _	52
Question Set 5	GC5 _	53
Question Set 6	GC6 _	54
Question Set 7	GC7 _	55
Question Set 8	GC8 _	56
Question Set 9	GC9 _	57
Head of Household Occupation	VARO _ _	58,59
Psychosexual Identity Score	VARP _	60
Education of Family Member with highest income	VARE _ _	61,62

APPENDIX C

INSTRUMENTS USED IN RESEARCH

PARENT REPORT

SENSORY-STIMULATION STUDY

1983

AFTER ENTERING THE HOME AND BEING SEATED WITH THE CHILD'S
SAY:

Now I am ready to begin my family study. Prior to my observation I will need your help with some family information. I have an interview for you, and one for (NAME OF OTHER PARENT).

Are you ready to begin?

IF NO — MAKE NECESSARY CHANGE HELP PARENT BECOME COMFORTABLE

IF YES (GO TO QUEST. 1)

The first question will be about your family members

1 Now, What would be the date of birth of SUBJECT _____
D.O.B.

2 That would make CHILD'S NAME how many months old? __ __

3 What relationship are you to the child? (CIRCLE ANSWER)

FATHER	MOTHER
ADOPTIVE FATHER	ADOPTIVE MOTHER
STEP-FATHER	STEP-MOTHER
OTHER _____	OTHER _____

FOR SUBJECT'S FATHER:

4 Are you presently employed?

IF YES (GO TO QUESTION 5) IF NO (GO TO QUESTION 8)

5 What is the name of your place of employment?

_____
NAME OF BUSINESS

6 What is your occupation, and what is it that you do? (PROBE IF UNCLEAR)

_____

_____

_____

7 How long have you worked where you are now employed?

_____
WRITE TIME IN APPROXIMATELY HOW MANY MONTHS OF EMPLOYMENT

SAY: I would like information from the parent who has attended school for the longest period of time.

8 Now, I would like to ask you about the education you have. What school did you last attend?

_____
WRITE NAME

9 Was that a (CIRCLE)

1. Middle School
2. High School
3. College
4. University
5. Trade School
6. Other: _____
SPECIFY

10 How many years did you complete there? (CIRCLE)

MIDDLE	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)
HIGH SCHOOL		10 (10)	11 (11)	12 (12)					
COLLEGE/UNIVERSITY			1 (13)	2 (14)	3 (15)	4 (16)	5 (17)	6 (18)	7 (19)
TRADE SCHOOL			1 (13)	2 (14)	3 (15)	4 (16)	5 (17)	6 (18)	7 (19)

Thank you for providing this information. Now I will need a place where I might sit to observe the play of your child.

AFTER DEMOGRAPHIC INTERVIEW

SAY:

Thank you, Now I will need a place where I can observe CHILD'S NAME. I will be watching your child's sensory interaction and will be timing the hearing, seeing, and touching used by CHILD'S NAME.

Because the Observation Sheet is one that requires my concentration, I will not have any way to talk to (HIM, HER). I won't be able to explain or demonstrate or play. I will just observe and time. I don't think that many directions are needed, and there is no specific way that the toys must be used. I am not worried about breakage as I have duplicate toys at home. Because I am strange to your child (HE, SHE) will probably feel better with you nearby.

SIT DOWN:

I will get ready to start. At the end of the hour the timer will beep and I will know I am done. Then I have a short interview for you and (OTHER PARENT), and the interview for (CHILD'S NAME).

Are there any questions?

IF NO

↓

START TIMER, SET FOR 1 HOUR and 10 MINUTES AND START WHEN TIME INDICATES 1 HOUR LEFT

IF YES

↓

ANSWER QUESTIONS NOT DIRECTLY RELATED TO PARENT-CHILD SENSORY INTERACTION. REMIND THE PARENT THAT EVEN WHEN NOT MOVING, CHILDREN MIGHT BE USING DIFFERENT SENSES AS HEARING, SIGHT....

OBSERVATION SHEET

GENDER RELATIONSHIP		QUALITY					QUANTITY		
Same Sex	Opp-Sex	Very Neg	Neg	Neu-tral	Pos	Very Pos	Auditory	Visual	Tactile

I.D. NUMBER: _____

CHECK:
Male ☐
Female ☐

Overall average: _____

Same sex average: _____

Opposite sex average: _____

NOTE: ADD ALL NUMBERS ACCORDING TO ABOVE CLASSIFICATION AND DIVIDE BY NUMBER OF TIME RECORDED (IN THAT CATEGORY).

TOTAL QUANTITY

Overall:
Auditory
Visual
Tactile

Same sex:
Auditory
Visual
Tactile

Opposite sex:
Auditory
Visual
Tactile

Parent is same sex / opposite

PORTION FOR MOTHER: SAY

This part is about the time your child was born. That was about four years ago and so the questions might seem a little difficult to answer, but the information is important to the study.

CIRCLE ANSWER THAT IS YES OR NO, YOU MIGHT RECEIVE MORE THAN A YES, NO ANSWER. IF THAT IS THE CASE, WRITE ADDITIONAL INFORMATION AT BOTTOM OF QUESTION ON THE LINE: THE FIRST FEW HOURS OF LIFE REFERS TO THE FIRST EIGHT HOURS. IF A PARENT INDICATES THAT SHE DID NOT HAVE HER BABY AFTER THE BIRTH FOR A PERIOD AFTER EIGHT HOURS BE CERTAIN TO CLARIFY THAT INFORMATION.

12a. Were you awake at the time of CHILD'S NAME birth? YES NO

IF NO: When did you see your baby? _____

_____

13a Within the first few hours of CHILD'S NAME life did you hold, fondle, stroke, or touch your child? YES NO

IF YES, How? _____

_____

14a. Do you remember talking to your baby soon after birth? I mean did you sooth by cooing, humming, talking? COMMENTS _____ YES NO

_____

_____

15a Once in a while a baby is in a quiet alert state immediately after birth. The baby can see and look around. That is rare, but did your baby look at you soon after birth? IF YES, What do you remember about that time? _____ YES NO

_____

_____

16a What other things do you remember about this time that was of particular interest to you? _____

_____

_____

_____

Mothers' Form

SAY:

This set of questions is about the period of time from the birth of your child to about one year of life...

Did you live with your child at that time? YES NO

IF QUALIFIED _____

_____

Did you work away from the home? YES NO

IF YES, How many hours a week did you work? __

_____(IF VARIED) Can you give me a monthly average?_____

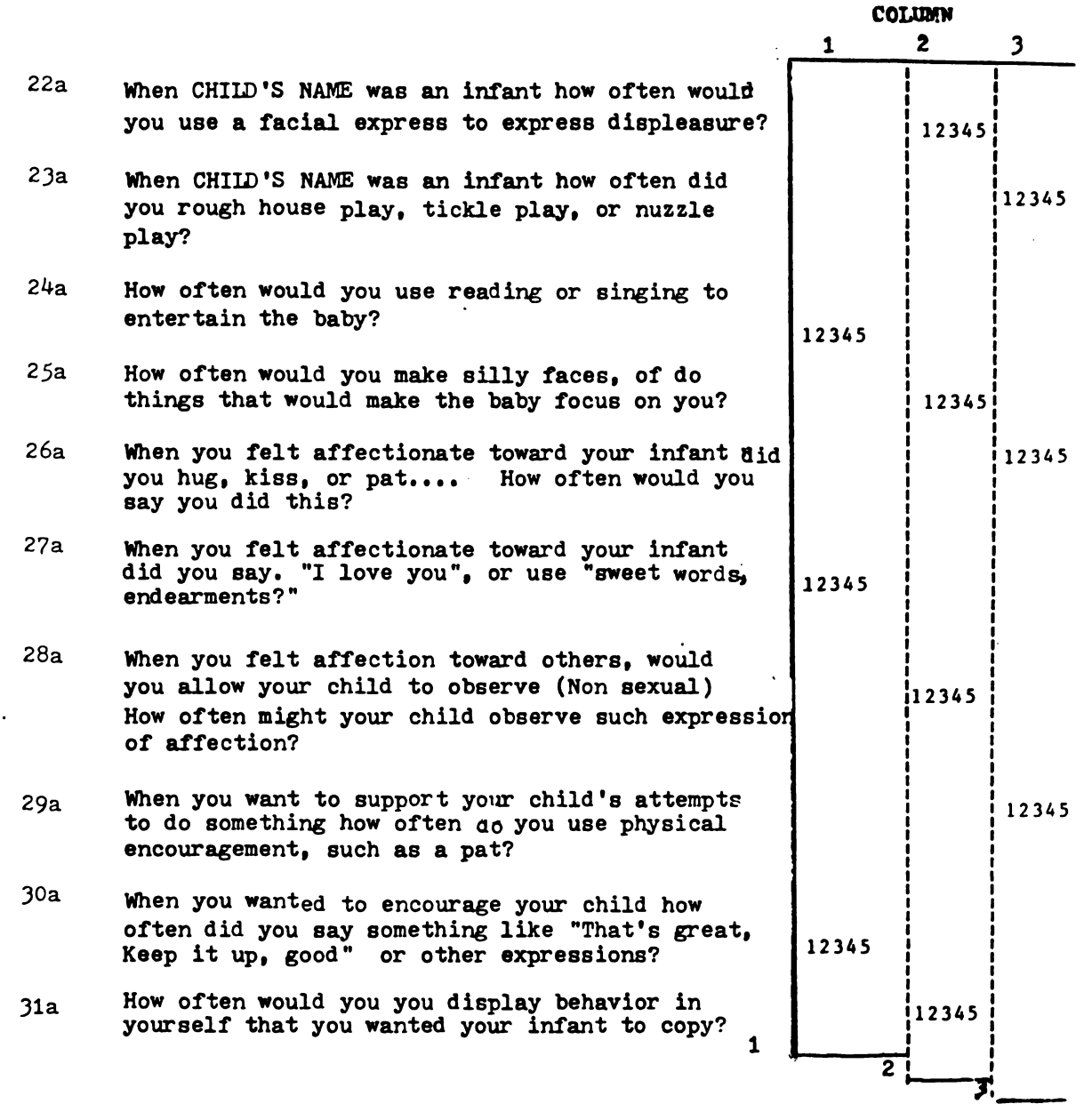
SAY: Here is a card with the answers on it. Well, actually there are five possible answers. The answers will help code the information, so words are needed that are used by all. The words mean degree or amount and are: All the time, Most of the time, Sometime, Rarely, and Never. When I ask a question I would like you to give me one of the answers.

TO RECORD: CIRCLE
5 for all the time
4 for most of the time
3 for sometimes
2 for rarely
1 for never

Example: 12345

		COLUMNS 1	2	3
17a	When CHILD'S NAME was an infant and needed to be cleaned or soothed, how often were you the one to change, wash,(to clean) or walk, rock, (To sooth)?			12345
18a	When CHILD'S NAME was an infant how often did you place the baby where you could be seen?		12345	
19a	When caring for your infant fow much of the time would you coo,talk, sing or hum to your child?	12345		
20a	When CHILD'S NAME was an infant how often would you scold, or express dissatisfaction about the child's behavior to your child?		12345	
21a	How often might you spank, "pat at" or paddle to discipline?			12345
		1	2	3

mother


COLUMN
1
2
3
22a When CHILD'S NAME was an infant how often would you use a facial express to express displeasure?
12345
23a When CHILD'S NAME was an infant how often did you rough house play, tickle play, or nuzzle play?
12345
24a How often would you use reading or singing to entertain the baby?
12345
25a How often would you make silly faces, of do things that would make the baby focus on you?
12345
26a When you felt affectionate toward your infant did you hug, kiss, or pat.... How often would you say you did this?
12345
27a When you felt affectionate toward your infant did you say. "I love you", or use "sweet words, endearments?"
12345
28a When you felt affection toward others, would you allow your child to observe (Non sexual) How often might your child observe such expression of affection?
12345
29a When you want to support your child's attempts to do something how often do you use physical encouragement, such as a pat?
12345
30a When you wanted to encourage your child how often did you say something like "That's great, Keep it up, good" or other expressions?
12345
31a How often would you you display behavior in yourself that you wanted your infant to copy?
12345
1
2
3

Now I need to ask questions about the toddler age: These questions are similiar, but not all the same as before.

When your child was from one year of age to three, or a toddler, were you working away from home? YES NO

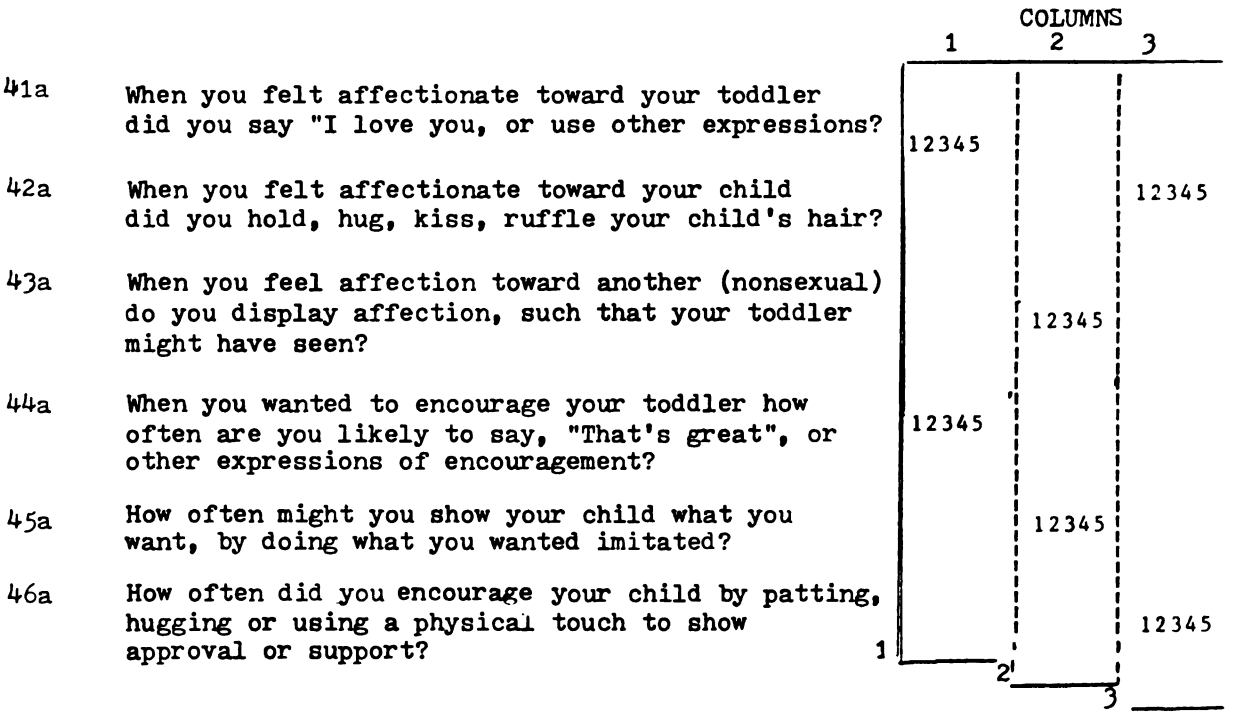
IF YES, Now how many hours did you work? _____(IF VARIED) Can you give me a monthly average? _____

Did you live with your child at that time?
IF QUALIFIED _____
_____ YES NO

O.K. Now use the card again, as before, answer with All the time, most of the time, sometimes, rarely, or never

		COLUMNS 1	2	3
32a	When CHILD'S NAME was one to three years, on the average, how often were you the one to wash, clean (CHILD) or carry, or rock (to sooth)?			12345
33a	When CHILD'S NAME was a toddler, how often did you spoon feed the baby?		12345	
34a	How often did you read to your toddler, sing, hum or talk to (CHILD'S NAME) to sooth or quiet?	12345		
35a	When CHILD'S NAME was in need of discipline how often would you scold, yell, or "Talk to the child,"	12345		
36a	How often would you use a "look" or facial expression to express that you did not like child's behavior?		12345	
37a	How often would you spank, hit, paddle, or "pat" for "bad behabior"?			12345
38a	How often might you use music, singing, or talking, of reading, to amuse your child?	12345		
39a	How often might you "act silly" use finger plays, or do playful things your toddler might imitiate?		12345	
40a	How often would you tickle, rough house, or nuzzle play with your toddler?			12345
		1 _____	2 _____	3 _____

mother

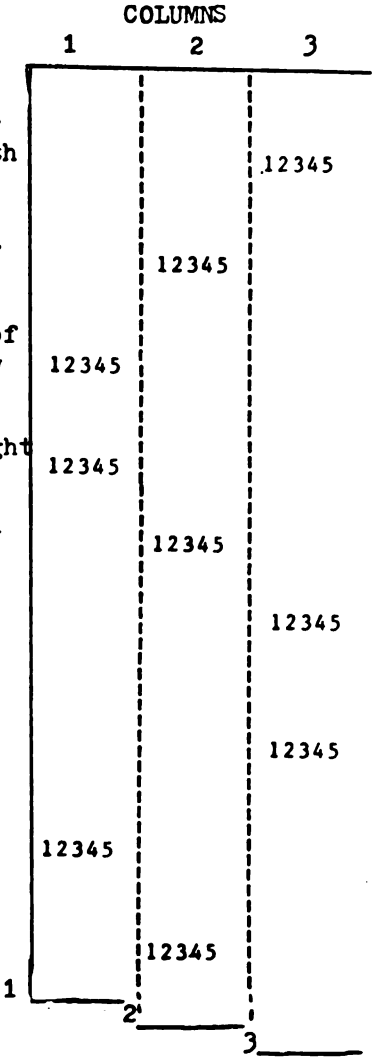

COLUMNS
1
2
3
41a When you felt affectionate toward your toddler did you say "I love you, or use other expressions?
12345
42a When you felt affectionate toward your child did you hold, hug, kiss, ruffle your child's hair?
12345
43a When you feel affection toward another (nonsexual) do you display affection, such that your toddler might have seen?
12345
44a When you wanted to encourage your toddler how often are you likely to say, "That's great", or other expressions of encouragement?
12345
45a How often might you show your child what you want, by doing what you wanted imitated?
12345
46a How often did you encourage your child by patting, hugging or using a physical touch to show approval or support?
12345
1
2
3

mother

Now, this last part is about the time since your child was three. At this time there is a growing ability for the preschooler to take care of some of the needs.

During the last year, or so, since your child was three, have you worked outside of the home? YES NO

IF YES, How many hours a week did you work? _____ (IF VARIED) Can you give a monthly average? _____



47a When CHILD'S NAME needs to be bathed, washed, or have clothing changed, how often do you help with this?

48a When CHILD'S NAME needs to have something demonstrated how often are you the one who teaches?

49a How often are you the one to remind your child of things that must be done. OR, do you explain how to do something?

50a When CHILD'S NAME needs discipline how often might you scold, talk, or yell, at the child?

51a How often might you "just use a frown" or facial expression to show disapproval?

52a How often do you paddle, spank, pat, or use physical means of discipline?

53a When you play with CHILD'S NAME how often do you rough house, tickle, play contact games. wrestle, with your child?

54a How often might you read to your child, or play games involving the teaching of directions?

55a When you play? (golf, bowling, fishing) do you take your child along to watch? How often would you say you do this?

56a When you feel affectionate toward your child do you hug, hold, kiss, cuddle, rock or pat your preschooler? How often would you say you do this?

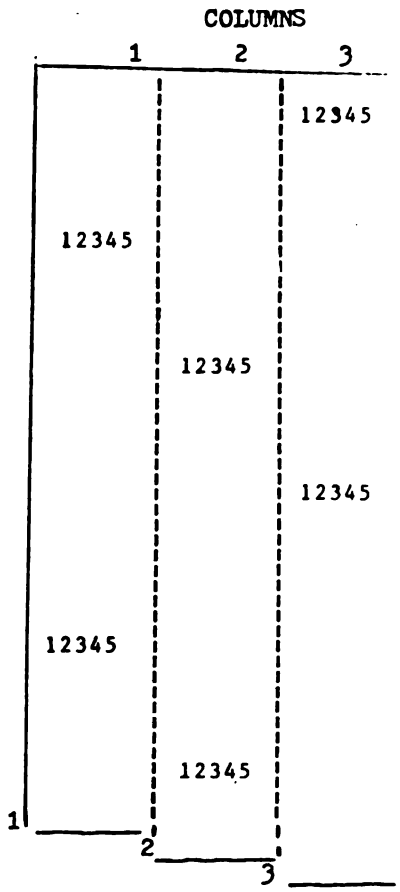
57a When you feel affectionate do you say, "I love you", use endearments, or words of affection? How often would you say you do this?

58a How often would you say you display affection towards other people, such that your child can see?

59a When you want to support your child's efforts do you use physical encouragement such as a pat or squeeze?

60 a When you want to encourage your child how often do you say something as "Keep that up, that's good", or something similiar?

61 a How often might you encourage your child's efforts by making certain that you are near enough for the child to observe that you are interested in what your child is doing?



mother

Do you ever ignore your child, or the activities of your child? 5 4 3 2 1

Can you explain when this is done?

(a) _____
(b) _____
(c) _____
(d) _____
(e) _____

NOW TAKE EACH ANSWER AND ASK HOW OFTEN THE PARENT MIGHT USE IGNORING (OR REJECTION) : EXAMPLE:
IF THE PARENT SAYS THAT THEY IGNORE SWEARING, SAY How often, when your child swears would you ignore this?

(a) _____	5	4	3	2	1
(b) _____	5	4	3	2	1
(c) _____	5	4	3	2	1
(d) _____	5	4	3	2	1
(e) _____	5	4	3	2	1

OTHER COMMENTS:

Thank you very much for your time. I will need to ask OTHER PARENT these questions now.

TO SCORE:

TOTAL FIGURES IN EACH COLUMN ON EACH PAGE.
PLACE BELOW:

	Auditory(1)	Visual (2)	Tactile(3)
Page 6			
7	_____	_____	_____
8	_____	_____	_____
9	_____	_____	_____
10	_____	_____	_____
11	_____	_____	_____
12	_____	_____	_____

Total from 6 - 12

* Auditory 1 __ __
* Visual __ __
* Tactile __ __

* Enter on coding sheet 20, if same-sex use SR ., if opposite sex use OR

Parent is same sex
opposite sex

PORTION FOR FATHER: SAY

This part is about the time your child was born. That was around four years and so the questions might seem a little difficult to answer, but the information is very important to the study.

CIRCLE ANSWER THAT IS YES OR NO. IF YOU RECEIVE MORE INFORMATION WRITE WHAT IS SAID ON THE LINE FOLLOWING THE QUESTION AS INDICATED BELOW. THE FIRST FEW HOURS OF LIFE REFERS TO THE FIRST EIGHT HOURS. IF A PARENT INDICATES THAT HE DID NOT SEE THE INFANT THE FIRST FEW HOURS AFTER BIRTH BE CERTAIN TO CLARIFY THAT BELOW.

12b. When your child was born were present in the 'delivery room'?
IF YES: What led to your being there? _____
_____
_____

IF NO: Could you tell me where you were? (IF AT HOME, OR WORK, OR IN AREA NEARBY, PROBE FOR INFORMATION AS TO WHY NOT WITH MOTHER _____
_____
_____

13b. When was the first time you remember holding your child, can you describe it? _____ YES
_____ NO

IF NOT CLEAR, Was that within the first few hours of birth? _____

14b. Did you talk to your baby when you first saw (HIM/HER)? _____ YES
_____
_____ NO

15b. Once in awhile a newborn can focus on the parent, that is, can look at the parent. Do you remember your child looking at you very early? YES
IF YES, When was that time _____ NO
_____
_____

16a. What other things do you remember about this time that you would like as additional information?
_____
_____
_____

Father's Form

SAY:

This set of questions is about the period of time from the birth of your child to about one year of life...

Did you live with your child at that time? YES NO

IF QUALIFIED _____

_____

Did you work away from the home? YES NO

IF YES, How many hours a week did you work? __

_____(IF VARIED) Can you give me a monthly average?_____

SAY: Here is a card with the answers on it. Well, actually there are five possible answers. The answers will help code the information, so words are needed that are used by all. The words mean degree or amount and are: All the time, Most of the time, Sometime, Rarely, and Never. When I ask a question I would like you to give me one of the answers.

TO RECORD: CIRCLE
5 for all the time
4 for most of the time
3 for sometimes
2 for rarely
1 for never

Example: 12345

COLUMNS

		1	2	3
17b	When CHILD'S NAME was an infant and needed to be cleaned or soothed, how often were you the one to change, wash, (to clean) or walk, rock, (To sooth)?			12345
18b	When CHILD'S NAME was an infant how often did you place the baby where you could be seen?		12345	
19b	When caring for your infant fow much of the time would you coo, talk, sing or hum to your child?	12345		
20b	When CHILD'S NAME was an infant how often would you scold, or express dissatisfaction about the child's behavior to your child?		12345	
21b	How often might you spank, "pat at" or paddle to discipline?			12345
		1	2	3

		COLUMN 1	COLUMN 2	COLUMN 3
22b	When CHILD'S NAME was an infant how often would you use a facial express to express displeasure?		12345	
23b	When CHILD'S NAME was an infant how often did you rough house play, tickle play, or nuzzle play?			12345
24b	How often would you use reading or singing to entertain the baby?	12345		
25b	How often would you make silly faces, of do things that would make the baby focus on you?		12345	
26b	When you felt affectionate toward your infant did you hug, kiss, or pat....? How often would you say you did this?			12345
27b	When you felt affectionate toward your infant did you say. "I love you", or use "sweet words,. endearments?"	12345		
28b	When you felt affection toward others, would you allow your child to observe (Non sexual) How often might your child observe such expressior of affection?		12345	
29b	When you want to support your child's attempts to do something how often do you use physical encouragement, such as a pat?			12345
30b	When you wanted to encourage your child how often did you say something like "That's great, Keep it up, good" or other expressions?	12345		
31b	How often would you you display behavior in yourself that you wanted your infant to copy?		12345	
		1	2	3

Now I need to ask questions about the toddler age: These questions are similiar, but not all the same as before.

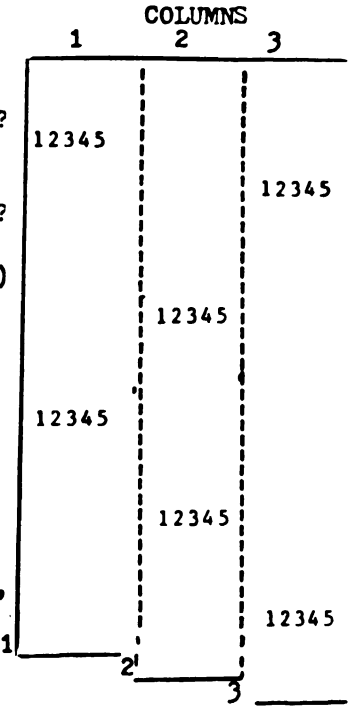
When your child was from one year of age to three, or a toddler, were you working away from home? YES NO

IF YES, Now how many hours did you work?
_____(IF VARIED) Can you give me a monthly average? _____

Did you live with your child at that time?
IF QUALIFIED _____
_____ YES NO

O.K. Now use the card again, as before, answer with All the time, most of the time, sometimes, rarely, or never

		COLUMNS 1	2	3
32b	When CHILD'S NAME was one to three years, on the average, how often were you the one to wash, clean (CHILD) or carry or rock, to sooth. ?			12345
33b	When CHILD'S NAME was a toddler, how often did you spoon feed the baby?		12345	
34b	How often did you read to your toddler, sing, hum or talk to (CHILD'S NAME) to sooth or quiet?	12345		
35b	When CHILD'S NAME was in need of discipline how often would you scold, yell, or "Talk to the child."	12345		
36b	How often would you use a "look" or facial expression to express that you did not like child's behavior		12345	
37b	How often would you spank, hit, paddle, or "pat" for "bad behabior"?			12345
38b	How often might you use music, singing, or talking, of reading, to amuse your child?	12345		
38b	How often might you "act silly" use finger plays, or do playful things your toddler might imitiate?		12345	
40b	How often would you tickle, rough house, or nuzzle play with your toddler?			12345
		1 _____	2 _____	3 _____



41b When you felt affectionate toward your toddler did you say "I love you, or use other expressions?

42b When you felt affectionate toward your child did you hold, hug, kiss, ruffle your child's hair?

43b When you feel affection toward another (nonsexual) do you display affection, such that your toddler might have seen?

44b When you wanted to encourage your toddler how often are you likely to say, "That's great", or other expressions of encouragement?

45b How often might you show your child what you want, by doing what you wanted imitated?

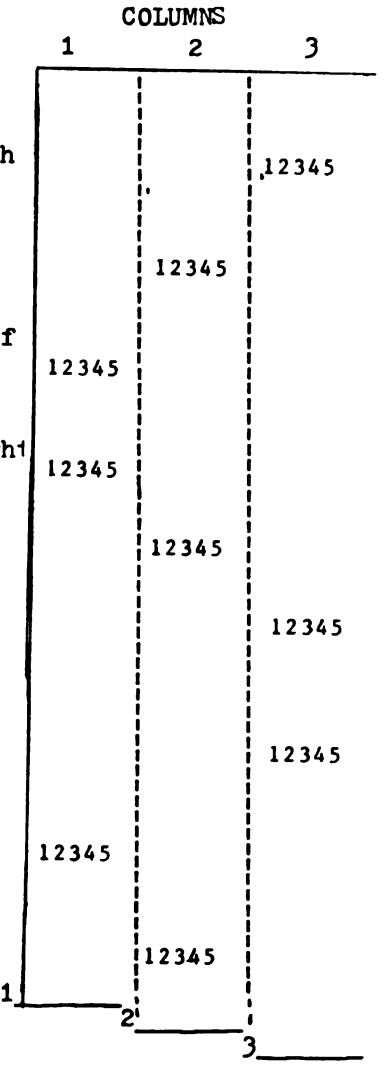
46b How often did you encourage your child by patting, hugging or using a physical touch to show approval or support?

father

Now, this last part is about the time since your child was three. At this time there is a growing ability for the preschooler to take care of some of the needs.

During the last year, or so, since your child was three, have you worked outside of the home? YES NO

IF YES, How many hours a week did you work? _____ (IF VARIED) Can you give a monthly average? _____



47b When CHILD'S NAME needs to be bathed, washed, or have clothing changed, how often do you help with this?

48b When CHILD"S NAME needs to have something demonstrated how often are you the one who teaches?

49b How often are you the one to remind your child of things that must be done. OR, do you explain how to do something?

50b When CHILD'S NAME needs discipline how often might you scold, talk, or yell, at the child?

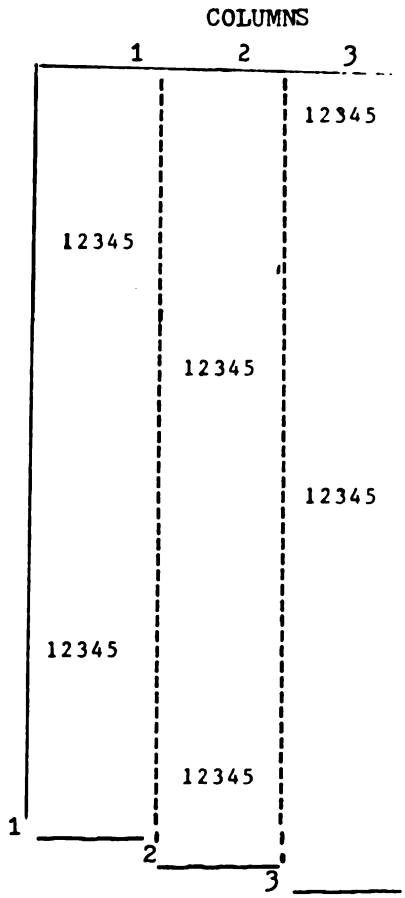
51b How often might you "just use a frown" or facial expression to show disapproval?

52b How often do you paddle, spank, pat, or use physical means of discipline?

53b When you play with CHILD'S NAME how often do you rough house, tickle, play contact games. wrestle, with your child?

54b How often might you read to your child, or play games involving the teaching of directions?

55b When you play? (golf, bowling, fishing) do you take your child along to watch? How often would you say you do this?



56b When you feel affectionate toward your child do you hug, hold, kiss, cuddle, rock or pat your preschooler? How often would you say you do this?

57b When you feel affectionate do you say, "I love you", use endearments, or words of affection? How often would you say you do this?

58b How often would you say you display affection towards other people, such that your child can see?

59b When you want to support your child's efforts do you use physical encouragement such as a pat or squeeze?

60b When you want to encourage your child how often do you say something as "Keep that up, that's good", or something similiar?

61b How often might you encourage your child's efforts by making certain that you are near enough for the child to observe that you are interested in what your child is doing?

father

Do you ever ignore your child, or the activities of your child? 5 4 3 2 1

Can you explain when this is done?

(a) _____
(b) _____
(c) _____
(d) _____
(e) _____

NOW TAKE EACH ANSWER AND ASK HOW OFTEN THE PARENT MIGHT USE IGNORING (OR REJECTION) : EXAMPLE: IF THE PARENT SAYS THAT THEY IGNORE SWEARING, SAY How often, when your child swears would you ignore this?

(a) _____ 5 4 3 2 1
(b) _____ 5 4 3 2 1
(c) _____ 5 4 3 2 1
(d) _____ 5 4 3 2 1
(e) _____ 5 4 3 2 1

OTHER COMMENTS:

Thank you very much for your time. I will need to ask OTHER PARENT these questions now.

TO SCORE:

TOTAL FIGURES IN EACH COLUMN ON EACH PAGE. PLACE BELOW:

	Auditory(1)	Visual (2)	Tactile(3)
Page 6			
7			
8			
9			
10			
11			
12			

Total from 6 - 12

* Auditory 1 ___ ___
* Visual ___ ___
* Tactile ___ ___

* Enter on coding sheet 20, if same-sex use SR ., if opposite sex use OR

PLEASE NOTE:

A copy of the Goodenough-Harris Drawing Test is not included.
The test manual can be obtained through:

Psychological Corporation
757 Third Avenue
New York, NY. 10017

ID NUMBER _____ FEMALE FORM A

DATE _____

Procedure: Use four dolls:
A doll representing an adult male
A doll representing an adult female
A doll representing a male child
A doll representing a female child
Four photographs of the upper torso and face of:
Two adult males, one black; one white
Two adult females, one black; one white

If the question is answered correctly mark a +. If the question is answered incorrectly mark a -. If one of the two questions in a set is correct, mark a 1 in the second column, if both are correct. mark a 2. If none are correct mark a 0.

This section is to be completed by coder according to area GC1 - GC7,

			(+-)	(0,1,2)
GC1	___	1. Show the girl doll: Is this a girl or boy?		
		2. Show the boy doll: Is this a girl or boy?	___	___
		3. Show the adult male doll: Is this a woman or man?		
		4. Show the adult female doll: Is this a woman or man?	___	___
		5. Show the white, female photo: Is this a woman or man?		
		6. Show the white, male photo: Is this a (ask child opposite response: If child said woman, ask man)?	___	___
		7. Show the black, male photo: Is this a woman or man?		
		8. Show the black, female photo: Is this a (ask child opposite response: If child said man, ask woman)?	___	___
		9. Are you a boy or a girl?		
GC2	___	9b Are you a (ask opposite sex as above response)?	___	___
		10a When you were a little baby were you a little girl, or a little boy?		
		10b Were you ever a little (opposite sex of response above)?	___	___
		11a When you grow up, will you be a daddy or a mommy?		
GC3	___	11b Could you ever be (opposite response as above)?	___	___
		12a If you wore boy's clothes would you be a girl or a boy?		
		12b If you wore girl's clothes would you be (ask opposite response as above)?	___	___
		13a If you played boy's games would you be a girl or a boy?		
GC4	___	13b If you played girl's games would you be a (opposite sex as above response)?	___	___
GC5	___	14 Could you be a boy if you <u>really</u> wanted to be a boy?	___	___

			(+-)	(0,1,2,3)
GC6 ____	15	Would you want to be a boy?	____	____
	16a.	Show paper doll (female) This is a little girl. If I put this boy outfit on will she be a boy or a girl?	____	
	16b.	If she cuts her hair, like this doll, will this be a boy or a girl?	____	
	16c.	If this girl plays with the hammer (and with guns) and does boy things, would she be a boy or a girl?	____	____
	17a.	Show paper doll (male) This is a little boy. If I put on this dress, will he be a boy or a girl?	____	
	17b.	If he grows long hair and wears braids, will this be a boy or a girl?	____	
	17c.	If he plays with a doll, and does girl things will he be a boy or a girl?	____	____
GC7 ____	18.	Ask if child answers set 17 correctly: Why can't he become a girl?	____*	____
GC8 ____	19.		____	____
GC9 ____				

Total Score _____

*Score + if child refers to a physical reason as, "he was born that way," and if the child offers a genital rationale score another +, below.

This section is to be completed by coder according to area GC1 - GC9

ID NUMBER _____
Date _____

MALE FORM B

Procedure: Use four dolls:
A doll representing an adult male
A doll representing an adult female
A doll representing a male child
A doll representinf a female child
Four photographs of the upper torso and face of:
Two adult males, one black; one white
Two adult females, one black; one white

If the question is answered correctly mark a +. If the question is answered incorrectly mark a -. If one of the two questions in a set is correct, mark a 1 in the second column, if both are correct. mark a 2. If none are correct mark a 0.

			(+-)	(0,1,2)
GC1	[1.	Show the boy doll: Is this a boy or girl?		
	[2.	Show the girl doll: Is this a boy or girl?	[	___
	[3.	Show the adult female doll: Is this a man or woman?		
	[4.	Show the adult male doll: Is this a man or woman?	[	___
	[5.	Show the white, male photo: Is this a man or woman?		
	[6.	Show the white, female photo: Is this a (ask child opposite response: If child said woman, ask man)?	[	___
	[7.	Show the black, female photo: Is this a woman or man?		
	[8.	Show the black, male photo: Is this a (ask child opposite response: If child said man, ask woman)?	[	___
GC2	[9.	Are you a girl or a boy?		
	[9b	Are you (ask opposite sex as above response)?	[	___
	[10a	When you were a little baby were you a little boy, or a little girl?		
	[10b	Were you ever a little (opposite sex of response anove)?	[	___
	[11a	When you grow up, will you be a mommy or a daddy?		
GC3	[11b	Could you ever be (opposite response as above)?	[	___
	[12a	If you wore girl's clothes would you be a boy or a girl?		
	[12b	If you wore girl's clothes would you be (ask opposite response as above)?	[	___
	[13a	If you played girl's games would you be a boy or girl?		
GC4	[13b	If you played boy's games would you be a(opposite sex as above response)?	[	___
GC5	14	Could you be a girl if you <u>really</u> wanted to be a girl?		___

MALE FORM B (Conti.)

			(+-)	(0,1,2,3)
GC6	____	15. Would you want to be a girl?	____	____
		16a. Show paper doll (male) This is a little boy. If I put this dress on will he be a girl or a boy?	____	
		16b. If he puts his hair into braids like this, will this be a girl or boy?	____	
		16c. If he plays with dolls and does girl things will he be a girl or a boy?	____	____
		17a. Show paper doll (female) This is a little girl. If I put this boy outfit on will she be a girl or a boy?	____	
		17b. If she cuts her hair, like this, will this be a girl or a boy?	____	
GC7	____	17c. If this girl plays plays with the hammer (and with guns) and does boy things, would she be a girl or a boy?	____	____
GC8	____	18. Ask if child answers set 17 correctly: Why can't she become a boy?	____*	____
GC9	____		19. ____	____

Total Score ____

*Score + if child refers to a physical reason as "she was born that way", and if child offers a genital rationale score another +, below.

APPENDIX D

MATERIALS USED WITH GENDER CONSISTENCY SCALE

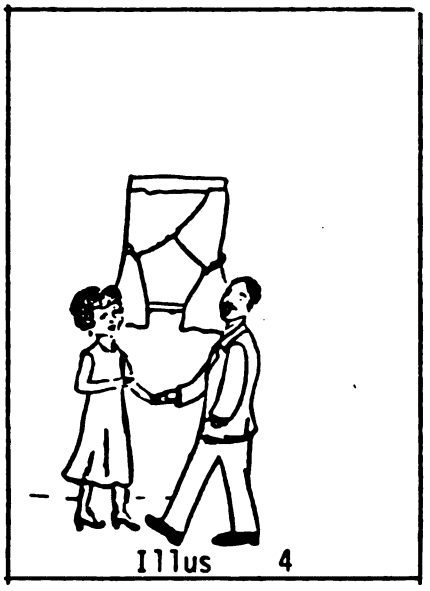
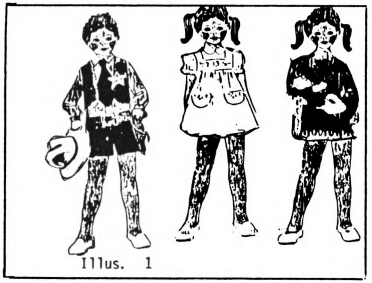
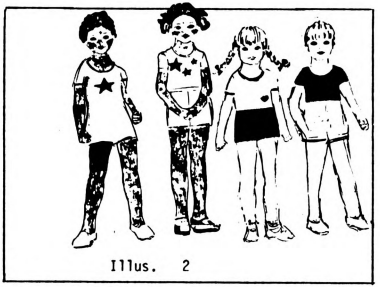
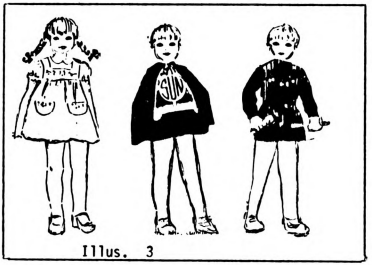


FIGURE 9 --- Pictures of Male and Female Figures for Gender Consistency.







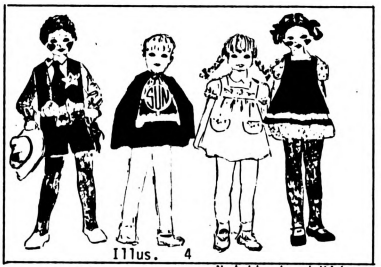


FIGURE 10 -- Paper Dolls for Use with Gender Consistency Scale

Neighborhood Kids
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Western Publishing Company

APPENDIX E

SPSS PRINTOUT OF RAW DATA

ACCESS OR MAXIMUM FIELD LENGTH REQUEST

FALL 1984

MICHIGAN STATE UNIVERSITY

DATA SET FOR

SENSORI-STIMULATION STUDY

RUN NAME SENSORI STIMULATION BETWEEN SAMESEX AND OPPOSITESEX DYADS
FILE NAME SENSORI STIMULATION
VARIABLE LIST VARID,VARSX1,VARSX2,VARSX3,VAROX1,VAROX2,VAROX3,
VARSQ,VAROQ,VARSR1,VARSR2,VARSR3,VARDR1,VARDR2,VARDR3,
VARA,VARM,GC1,GC2,GC3,GC4,GC5,GC6,GC7,GC8,GC9,VARO,VARP,VARE
N OF CASES 36
INPUT MEDIUM CARDS
INPUT FORMAT FIXED (F2.0,6F4.0,2F3.2,6F2.0,9F1.0,F2.0,F1.0,F2.0)

ACCORDING TO YOUR INPUT FORMAT, VARIABLES ARE TO BE READ AS FOLLOWS

VARIABLE	FORMAT	RECORD	COLUMNS
VARID	F 2.0	1	1- 2
VARSX1	F 4.0	1	3- 6
VARSX2	F 4.0	1	7- 10
VARSX3	F 4.0	1	11- 14
VAROX1	F 4.0	1	15- 18
VAROX2	F 4.0	1	19- 22
VAROX3	F 4.0	1	23- 26
VARSQ	F 3.2	1	27- 29
VAROQ	F 3.2	1	30- 32
VARSR1	F 2.0	1	33- 34
VARSR2	F 2.0	1	35- 36
VARSR3	F 2.0	1	37- 38
VARDR1	F 2.0	1	39- 40
VARDR2	F 2.0	1	41- 42
VARDR3	F 2.0	1	43- 44
VARA	F 2.0	1	45- 46
VARM	F 2.0	1	47- 48
GC1	F 1.0	1	49- 49
GC2	F 1.0	1	50- 50
GC3	F 1.0	1	51- 51
GC4	F 1.0	1	52- 52
GC5	F 1.0	1	53- 53
GC6	F 1.0	1	54- 54
GC7	F 1.0	1	55- 55
GC8	F 1.0	1	56- 56
GC9	F 1.0	1	57- 57
VARO	F 2.0	1	58- 59
VARP	F 1.0	1	60- 60
VARE	F 2.0	1	61- 62

THE INPUT FORMAT PROVIDES FOR 29 VARIABLES. 29 WILL BE READ.
IT PROVIDES FOR 1 RECORDS ("CARDS") PER CASE.
A MAXIMUM OF 62 COLUMNS ARE USED ON A RECORD.

VAR LABELS VARID,ID OF SUBJECT/VARSX1,SAMESEX AUDITORY/VARSX2,
SAMESEX VISUAL/VARSX3,SAMESEX TACTILE/VAROX1,OPPSEX AUD/
VAROX2,OPPSEX VISUAL/VAROX3,OPPSEX TACTILE/VARSQ,SAMESEX
QUALITY/VAROQ,OPPSEX QUALITY/VARSR1,SAMESEX AUDITORY REPORT/
VARSR2,SAMESEX VISUAL REPORT/VARSR3,SAMESEX TACTILE REPORT/
VARDR1,OPPSEX AUDITORY REPORT/VARDR2,OPPSEX VISUAL REPORT/
VARDR3,OPPSEX TACTILE REPORT,VARA,AGE OF SUBJECT/VARM,MENTAL
IMAGE SCORE/GC1,GENDER KNOW/GC2,GENDER IDENTITY OF SELF/
GC3,GENDER STABILITY/GC4,GENDER CONSTANCY OF SELF/GC5,
WISHFUL THOUGHT/GC6,ACCEPT GENDER/GC7,GENDER CONSTANCY FOR
OTHERS,GC8,GENITAL LEVEL ONE,GC9,GENITAL LEVEL TWO/
VARO,HOUSEHOLD OCCUPATION/VARP,LEVEL OF GENDER IDENTITY/
VARE,EDUCATIONAL LEVEL OF PARENT/
LIST CASES CASES = 36/VARIABLES = VARID TO VARE
READ INPUT DATA

CPU TIME REQUIRED.. .224 SECONDS

CONTENTS OF CASE NUMBER 1

VARID	36.	VARSX1	364.	VARSX2	152.	VARSX3	117.	VAROX1	117.
VAROX2	41.	VARSR1	1.	VARSO	4.	VAROO	4.	VARSR2	61.
VARSR2	56.	VARSR3	55.	VAROR1	93.	VAROR2	62.	VAROR3	62.
VARA	57.	VARM	16.	GC5	1.	GC2	1.	GC3	1.
GC4	1.	GC5	1.	GC6	1.	GC7	1.	GC8	0
GC9	0	VARO	10.	VARP	7.	VARE	16.		

CONTENTS OF CASE NUMBER 2

VARID	35.	VARSX1	118.	VARSX2	18.	VARSX3	9.	VAROX1	350.
VAROX2	30.	VARSR1	41.	VARSO	3.	VAROO	3.	VARSR1	65.
VARSR2	59.	VARSR2	56.	VAROR1	66.	VAROR2	58.	VAROR3	66.
VARA	52.	VARM	4.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	5.	VARP	5.	VARE	15.		

CONTENTS OF CASE NUMBER 3

VARID	34.	VARSX1	805.	VARSX2	245.	VARSX3	106.	VAROX1	45.
VAROX2	26.	VARSR1	56.	VARSO	4.	VAROO	4.	VARSR1	61.
VARSR2	55.	VARSR2	54.	VAROR1	49.	VAROR2	45.	VAROR3	53.
VARA	56.	VARM	12.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	10.	VARP	5.	VARE	16.		

CONTENTS OF CASE NUMBER 4

VARID	33.	VARSX1	144.	VARSX2	29.	VARSX3	7.	VAROX1	568.
VAROX2	93.	VARSR1	176.	VARSO	4.	VAROO	4.	VARSR1	63.
VARSR2	69.	VARSR2	64.	VAROR1	64.	VAROR2	58.	VAROR3	61.
VARA	49.	VARM	7.	GC1	1.	GC2	1.	GC3	1.
GC4	1.	GC5	1.	GC6	1.	GC7	1.	GC8	1.
GC9	0	VARO	5.	VARP	8.	VARE	16.		

CONTENTS OF CASE NUMBER 5

VARID	32.	VARSX1	550.	VARSX2	69.	VARSX3	223.	VAROX1	66.
VAROX2	9.	VARSR1	57.	VARSO	4.	VAROO	4.	VARSR1	64.
VARSR2	62.	VARSR2	62.	VAROR1	60.	VAROR2	56.	VAROR3	56.
VARA	49.	VARM	11.	GC1	1.	GC2	1.	GC3	1.
GC4	1.	GC5	1.	GC6	1.	GC7	0	GC8	1.
GC9	0	VARO	10.	VARP	7.	VARE	19.		

CONTENTS OF CASE NUMBER 6

VARID	31.	VARSX1	142.	VARSX2	36.	VARSX3	110.	VAROX1	9.
VAROX2	5.	VARSR1	1.	VARSO	4.	VAROO	3.	VARSR1	55.
VARSR2	55.	VARSR2	48.	VAROR1	57.	VAROR2	55.	VAROR3	56.
VARA	49.	VARM	6.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	4
GC9	0	VARO	5.	VARP	5.	VARE	14.		

CONTENTS OF CASE NUMBER 7

VARID	30.	VARSX1	611.	VARSX2	312.	VARSX3	192.	VAROX1	241.
VAROX2	250.	VARSR1	600.	VARSO	4.	VAROO	4.	VARSR1	66.
VARSR2	66.	VARSR2	59.	VAROR1	61.	VAROR2	71.	VAROR3	57.
VARA	53.	VARM	13.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	7.	VARP	4.	VARE	14.		

CONTENTS OF CASE NUMBER 8

VARID	29.	VARSX1	1.	VARSX2	1.	VARSX3	1.	VAROX1	114.
VAROX2	12.	VARSR1	6.	VARSO	0	VAROO	4.	VARSR1	41.
VARSR2	49.	VARSR2	37.	VAROR1	63.	VAROR2	62.	VAROR3	62.
VARA	49.	VARM	4.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	0	GC6	0	GC7	0	GC8	0
GC9	0	VARO	4.	VARP	3.	VARE	14.		

CONTENTS OF CASE NUMBER 9

VARID	28.	VARSX1	234.	VARSX2	26.	VARSX3	169.	VAROX1	422.
VAROX2	72.	VARSR1	176.	VARSO	4.	VAROO	4.	VARSR1	72.
VARSR2	72.	VARSR2	62.	VAROR1	59.	VAROR2	61.	VAROR3	56.
VARA	54.	VARM	12.	GC1	1.	GC2	1.	GC3	1.
GC4	1.	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	5.	VARP	6.	VARE	14.		

CONTENTS OF CASE NUMBER 10

VARID	27.	VARSX1	206.	VARSX2	30.	VARSX3	7.	VAROX1	333.
VAROX2	31.	VARSX3	27.	VARSO	4.	VARDO	4.	VARSP1	52.
VARSP2	48.	VARSX3	46.	VAROR1	58.	VAROR2	66.	VAROP3	63.
VARA	60.	VARM	7.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	10.	VARP	5.	VARE	16.		

CONTENTS OF CASE NUMBER 11

VARID	26.	VARSX1	331.	VARSX2	31.	VARSX3	5.	VAROX1	127.
VAROX2	33.	VAROX3	63.	VARSO	3.	VARDO	3.	VARSP1	58.
VARSP2	61.	VARSX3	56.	VAROR1	61.	VAROR2	50.	VAROP3	56.
VARA	49.	VARM	9.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	18.	VARP	5.	VARE	16.		

CONTENTS OF CASE NUMBER 12

VARID	25.	VARSX1	394.	VARSX2	112.	VARSX3	67.	VAROX1	1017.
VAROX2	63.	VAROX3	400.	VARSO	4.	VARDO	4.	VARSP1	51.
VARSP2	67.	VARSX3	56.	VAROR1	61.	VAROR2	56.	VAROP3	62.
VARA	53.	VARM	9.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	10.	VARP	5.	VARE	19.		

CONTENTS OF CASE NUMBER 13

VARID	24.	VARSX1	300.	VARSX2	76.	VARSX3	8.	VAROX1	116.
VAROX2	42.	VAROX3	5.	VARSO	4.	VARDO	4.	VARSP1	57.
VARSP2	52.	VARSX3	47.	VAROR1	47.	VAROR2	50.	VAROP3	54.
VARA	58.	VARM	13.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	1.	VARP	5.	VARE	14.		

CONTENTS OF CASE NUMBER 14

VARID	23.	VARSX1	69.	VARSX2	59.	VARSX3	14.	VAROX1	1075.
VAROX2	143.	VAROX3	31.	VARSO	4.	VARDO	4.	VARSP1	69.
VARSP2	60.	VARSX3	66.	VAROR1	66.	VAROR2	69.	VAROP3	62.
VARA	49.	VARM	9.	GC1	1.	GC2	1.	GC3	0
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	10.	VARP	4.	VARE	16.		

CONTENTS OF CASE NUMBER 15

VARID	22.	VARSX1	631.	VARSX2	61.	VARSX3	57.	VAROX1	427.
VAROX2	34.	VAROX3	7.	VARSO	4.	VARDO	4.	VARSP1	66.
VARSP2	60.	VARSX3	63.	VAROR1	66.	VAROR2	65.	VAROP3	57.
VARA	57.	VARM	10.	GC1	1.	GC2	1.	GC3	1.
GC4	1.	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	10.	VARP	6.	VARE	18.		

CONTENTS OF CASE NUMBER 16

VARID	21.	VARSX1	15.	VARSX2	5.	VARSX3	1.	VAROX1	434.
VAROX2	50.	VAROX3	165.	VARSO	3.	VARDO	4.	VARSP1	38.
VARSP2	49.	VARSX3	41.	VAROR1	54.	VAROR2	48.	VAROP3	51.
VARA	54.	VARM	7.	GC1	1.	GC2	1.	GC3	1.
GC4	1.	GC5	1.	GC6	1.	GC7	1.	GC8	1.
GC9	0	VARO	9.	VARP	8.	VARE	17.		

CONTENTS OF CASE NUMBER 17

VARID	20.	VARSX1	1047.	VARSX2	145.	VARSX3	146.	VAROX1	180.
VAROX2	14.	VAROX3	5.	VARSO	4.	VARDO	4.	VARSP1	71.
VARSP2	66.	VARSX3	59.	VAROR1	50.	VAROR2	85.	VAROP3	55.
VARA	51.	VARM	14.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	1.	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	3.	VARP	5.	VARE	15.		

CONTENTS OF CASE NUMBER 18

VARID	19.	VARSX1	192.	VARSX2	66.	VARSX3	10.	VAROX1	281.
VAROX2	54.	VAROX3	9.	VARSO	3.	VARDO	3.	VARSP1	61.
VARSP2	62.	VARSX3	62.	VAROR1	66.	VAROR2	60.	VAROP3	65.
VARA	64.	VARM	9.	GC1	1.	GC2	1.	GC3	1.
GC4	0	GC5	0	GC6	1.	GC7	0	GC8	0
GC9	0	VARO	5.	VARP	4.	VARE	16.		

CONTENTS OF CASE NUMBER 19

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VARID       18.      VARSX1      451.     VARSX2      100.     VARSX3      36.      VAROX1      270.
VAROX2      79.      VAROX3       40.     VARSO         4.     VAROO        4.      VARSR1       65.
VARSR2      45.      VARSR3       63.     VAROR1       52.     VAROR2      54.      VAROR3       52.
VARA        56.      VARM         20.     GC1           1.     GC2          1.      GC3           1.
GC4          1.      GC5           1.     GC6           1.     GC7          0       GC8           0
GC9          0       VARO         10.     VARP          6.     VARE        18.

CONTENTS OF CASE NUMBER   20
VARID       17.      VARSX1      149.     VARSX2       37.     VARSX3      11.      VAROX1       26.
VAROX2       1.      VAROX3        1.     VARSO         3.     VAROO        3.      VARSR1       51.

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VARSR2      53.      VARSR3       50.     VAROR1       61.     VAROR2      49.      VAROR3       45.
VARA        63.      VARM          9.     GC1           1.     GC2          1.      GC3           1.
GC4          0       GC5           1.     GC6           1.     GC7          0       GC8           0
GC9          0       VARO         10.     VARP          5.     VARE        18.

CONTENTS OF CASE NUMBER   21
VARID       16.      VARSX1      571.     VARSX2       96.     VARSX3      32.      VAROX1       93.
VAROX2      42.      VAROX3      206.     VARSO         4.     VAROO        3.      VARSR1       52.
VARSR2      43.      VARSR3       46.     VAROR1       66.     VAROR2      65.      VAROR3       66.
VARA        63.      VARM         10.     GC1           1.     GC2          1.      GC3           1.
GC4          0       GC5           1.     GC6           1.     GC7          0       GC8           0
GC9          0       VARO         10.     VARP          5.     VARE        19.

CONTENTS OF CASE NUMBER   22
VARID       15.      VARSX1      119.     VARSX2       49.     VARSX3       2.      VAROX1      130.
VAROX2     107.      VAROX3       17.     VARSO         4.     VAROO        4.      VARSR1       64.
VARSR2      57.      VARSR3       70.     VAROR1       62.     VAROR2      63.      VAROR3       61.
VARA        54.      VARM          7.     GC1           1.     GC2          1.      GC3           1.
GC4          1.      GC5           1.     GC6           1.     GC7          1.      GC8           0
GC9          0       VARO          4.     VARP          7.     VARE        13.

CONTENTS OF CASE NUMBER   23
VARID       14.      VARSX1      717.     VARSX2      132.     VARSX3      51.      VAROX1       61.
VAROX2      43.      VAROX3        5.     VARSO         4.     VAROO        4.      VARSR1       63.
VARSR2      65.      VARSR3       37.     VAROR1       43.     VAROR2      46.      VAROR3       46.
VARA        53.      VARM         11.     GC1           1.     GC2          1.      GC3           1.
GC4          0       GC5           1.     GC6           1.     GC7          0       GC8           0
GC9          0       VARO          8.     VARP          5.     VARE        16.

CONTENTS OF CASE NUMBER   24
VARID       13.      VARSX1      125.     VARSX2       64.     VARSX3      23.      VAROX1      589.
VAROX2      78.      VAROX3       24.     VARSO         3.     VAROO        4.      VARSR1       56.
VARSR2      55.      VARSR3       58.     VAROR1       65.     VAROR2      67.      VAROR3       56.
VARA        54.      VARM          6.     GC1           1.     GC2          1.      GC3           1.
GC4          0       GC5           0      GC6           1.     GC7          0       GC8           0
GC9          0       VARO          5.     VARP          4.     VARE        15.

CONTENTS OF CASE NUMBER   25
VARID       12.      VARSX1      459.     VARSX2      154.     VARSX3     126.      VAROX1       81.
VAROX2      43.      VAROX3      131.     VARSO         4.     VAROO        4.      VARSR1       69.
VARSR2      73.      VARSR3       55.     VAROR1       49.     VAROR2      66.      VAROR3       56.
VARA        56.      VARM         16.     GC1           1.     GC2          1.      GC3           1.
GC4          1.      GC5           1.     GC6           1.     GC7          0       GC8           0
GC9          0       VARO          8.     VARP          6.     VARE        18.

CONTENTS OF CASE NUMBER   26
VARID       11.      VARSX1        5.     VARSX2       14.     VARSX3       1.      VAROX1      326.
VAROX2      43.      VAROX3        6.     VARSO         3.     VAROO        3.      VARSR1       67.
VARSR2      56.      VARSR3       55.     VAROR1       62.     VAROR2      52.      VAROR3       61.
VARA        50.      VARM          8.     GC1           1.     GC2          1.      GC3           1.
GC4          0       GC5           1.     GC6           1.     GC7          0       GC8           0
GC9          0       VARO          5.     VARP          5.     VARE        18.

CONTENTS OF CASE NUMBER   27
VARID       10.      VARSX1     1150.     VARSX2       73.     VARSX3      65.      VAROX1       59.
VAROX2      18.      VAROX3        4.     VARSO         4.     VAROO        4.      VARSR1       69.
VARSR2      64.      VARSR3       57.     VAROR1       46.     VAROR2      49.      VAROR3       56.
VARA        35.      VARM          9.     GC1           1.     GC2          1.      GC3           1.
GC4          1.      GC5           1.     GC6           1.     GC7          1.      GC8           1.
GC9          0       VARO          1.     VARP          8.     VARE        12.

CONTENTS OF CASE NUMBER   28
VARID        9.      VARSX1      134.     VARSX2       45.     VARSX3      57.      VAROX1      109.
VAROX2      10.      VAROX3        1.     VARSO         3.     VAROO        3.      VARSR1       57.
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VARSR2        65.    VARSR3        60.    VARSQ1        56.    VAROR2        59.    VAROR3        58.
VARA          50.    VARM           5.    GC1            1.    GC2            1.    GC3            1.
GC4            0     GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO           5.    VARP           5.    VARE          14.

CONTENTS OF CASE NUMBER     29
VARID          6.    VARSX1       832.    VARSX2       125.    VARSX3       442.    VAROX1        67.
VAROX2        32.    VAROX3        43.    VARSQ          4.    VAROQ          4.    VARSR1        81.
VARSR2        53.    VARSR3        59.    VAROR1        52.    VAROR2        57.    VAROR3        55.
VARA          49.    VARM          13.    GC1            1.    GC2            1.    GC3            1.
GC4            0     GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO           9.    VARP           5.    VARE          12.

CONTENTS OF CASE NUMBER     30
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VARID          7.    VARSX1        12.    VARSX2         1.    VARSX3         1.    VAROX1       406.
VAROX2        77.    VAROX3        67.    VARSQ          3.    VAROQ          4.    VARSR1        58.
VARSR2        53.    VARSR3        52.    VAROR1        65.    VAROR2        61.    VAROR3        58.
VARA          58.    VARM           3.    GC1            1.    GC2            1.    GC3            1.
GC4            0     GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO          10.    VARP           5.    VARE          19.

CONTENTS OF CASE NUMBER     31
VARID          6.    VARSX1       775.    VARSX2        67.    VARSX3       656.    VAROX1        55.
VAROX2        21.    VAROX3        21.    VARSQ          4.    VAROQ          4.    VARSR1        67.
VARSR2        63.    VARSR3        57.    VAROR1        60.    VAROR2        56.    VAROR3        59.
VARA          57.    VARM          13.    GC1            1.    GC2            1.    GC3            1.
GC4            0     GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO           9.    VARP           5.    VARE          14.

CONTENTS OF CASE NUMBER     32
VARID          5.    VARSX1        26.    VARSX2        20.    VARSX3       135.    VAROX1       140.
VAROX2        61.    VAROX3        55.    VARSQ          4.    VAROQ          4.    VARSR1        55.
VARSR2        65.    VARSR3        64.    VAROR1        39.    VAROR2        55.    VAROR3        51.
VARA          51.    VARM           6.    GC1            1.    GC2            1.    GC3            1.
GC4            1     GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO          10.    VARP           5.    VARE          16.

CONTENTS OF CASE NUMBER     33
VARID          4.    VARSX1       289.    VARSX2        92.    VARSX3         2.    VAROX1        11.
VAROX2         1.    VAROX3         1.    VARSQ          3.    VAROQ          3.    VARSR1        68.
VARSR2        63.    VARSR3        72.    VAROR1        59.    VAROR2        58.    VAROR3        60.
VARA          60.    VARM           9.    GC1            1.    GC2            1.    GC3            1.
GC4            1.    GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO           9.    VARP           6.    VARE          14.

CONTENTS OF CASE NUMBER     34
VARID          3.    VARSX1       366.    VARSX2       151.    VARSX3       425.    VAROX1       123.
VAROX2        34.    VAROX3        60.    VARSQ          4.    VAROQ          4.    VARSR1        47.
VARSR2        47.    VARSR3        62.    VAROR1        56.    VAROR2        64.    VAROR3        50.
VARA          56.    VARM          12.    GC1            1.    GC2            1.    GC3            1.
GC4            1.    GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO          10.    VARP           6.    VARE          18.

CONTENTS OF CASE NUMBER     35
VARID          2.    VARSX1       547.    VARSX2        92.    VARSX3        31.    VAROX1       137.
VAROX2        23.    VAROX3        11.    VARSQ          3.    VAROQ          3.    VARSR1        55.
VARSR2        61.    VARSR3        57.    VAROR1        52.    VAROR2        56.    VAROR3        51.
VARA          55.    VARM          10.    GC1            1.    GC2            1.    GC3            1.
GC4            1.    GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            1     VARO           5.    VARP           6.    VARE          14.

CONTENTS OF CASE NUMBER     36
VARID          1.    VARSX1        64.    VARSX2        35.    VARSX3        56.    VAROX1        48.
VAROX2        41.    VAROX3        10.    VARSQ          3.    VAROQ          3.    VARSR1        40.
VARSR2        48.    VARSR3        61.    VAROR1        66.    VAROR2        63.    VAROR3        61.
VARA          59.    VARM          10.    GC1            1.    GC2            1.    GC3            1.
GC4            0     GC5            1.    GC6            1.    GC7            0     GC8            0
GC9            0     VARO           5.    VARP           5.    VARE          14.
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APPENDIX F

ADDITIONAL TABLES

TABLE 34 -- Summary of Correlation Between Observation of Quantity of Sensori-Stimulation Multiplicative Product (Auditory x Visual x Tactile) and the Multiplicative Product of the Parent Report of Sensori-Stimulation for the Total Stimulation By Same-sex and Opposite-sex dyads, for subsamples of Female and Male Subjects.

Variable	Total		Female		Male	
	r	p	r	p	r	p
Same-sex Total Quantity Stimulation:						
Observed						
Reported	.1048	.271	-.0117	.482	-.2264	.183
Opposite-sex Total Quantity Stimulation						
Observed						
Reported	.2659	.045.	.4290	.038	.1350	.297
Total Subjects	N = 36		n = 18		n = 18	

TABLE 35 --Mean Minutes of Parental Sensori-Stimulation according to Gender Relationship to the Subject as Same or Opposite Sex During One Hour Observation Time for Subsamples of Female Subjects and Male Subjects

Variable	Female		Male	
	Mean	S.D.	Mean	S.D.
Same Sex:				
Tactile	2.3	2.8	.9	1.7
Visual	1.9	1.2	.7	.7
Auditory	10.0	4.4	2.1	1.9
Opposite Sex:				
Tactile	1.4	2.5	.9	2.9
Visual	.7	.6	1.0	.6
Auditory	2.4	2.0	5.7	5.2
Total Subjects	n = 36		n = 36	

TABLE 36 --- Z values and Probability of Obtaining a Unit Normal Deviate of Value (GE. for Abs of Z), for Examination of Residuals, Examining Runs for Total Sample and Subsample Female and Subsample Male

Dependent Variable	Z Score	Probability
Total Sample n = 36		
Mental Image of Self	.3482	.3638
Psychosexual Identity	.0952	.4621
Female Subsample n = 18		
Mental Image of Self	1.7800	.0375
Psychosexual Identity	1.7000	.0446
Male Subsample n = 18		
Mental Image of Self	.2460	.4016
Psychosexual Identity	.2754	.3897

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