

PHYSICAL CONTACT BETWEEN PRESCHOOL CHILDREN  
AND ADULTS IN A NATURAL SETTING

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## CHAPTER I

### INTRODUCTION

Present literature shows that more people are becoming aware of the skin as a channel of communication (Gilmer and Gregg, 1961) and the relationship of tactile stimulation to the development of a healthy human being (Montagu, 1971). Montagu (1971) reports that the skin serves as the first sense organ by which the infant communicates, and "failure to receive tactile stimulation in infancy results in a critical failure to establish contact relations with others" (p. 238). By fulfilling the basic need for tactile stimulation during infancy and throughout life, an individual increases in his reassurance of being needed, wanted, and valued (Montagu, 1971).

Gilmer and Gregg (1961) describe the skin as a unique sensory channel as compared to one's eyes and ears. The skin is unique in combining the spatial dimension of communication exhibited by the eyes and the temporal dimension of communication exhibited best by the ears.

Continuing to explore the importance of the skin as a means of communication requires additional research in this field. Past research dealing with this topic has been predominately limited to animals, infants, or human beings with abnormalities. Tactile communication is not just experienced by these individuals, but as Anderson (1973) reports from personal teaching experience in nursery school and kindergarten, many children at this age level communicate through nonverbal

channels. Some of the nonverbal channels of communication that Anderson refers to are gesturing, facial expressions, body positions, and physical contact.

Researchers are beginning to study physical contact in a variety of settings at various stages of development. Two studies dealing with physical contact and touching in preschool children have been conducted at the University of Maryland. These studies were part of a series being conducted at the Center for Young Children (Berman and Roderick, 1973) as an outgrowth of transactional curriculum. Transactional curriculum according to Berman (1968) is based on the development of eight process skills: perceiving, communicating, loving, decision making, knowing, organizing, creating, and valuing. These process skills as defined in Berman and Roderick (1973, p. 275) are:

. . . those competencies which enable a person to feel he has the power to act decisively and responsibly within the situation that he finds himself. He is aware of choices available to him and can use his sense of freedom to make himself and the situation of which he is part better.

By identifying and defining these eight process skills, a relationship can be seen between these skills and touching. As stated previously, touching is a means of communicating, and communicating has been identified as one of the eight process skills. Also, Morris (1972) writes of a strong relationship between touching and loving. Therefore, researchers at the University of Maryland began to explore the idea of touching and physical contact.

Childress, Fessler, and Greenblatt (1972) conducted one of the studies at the University of Maryland. Their study dealt with physical contact as it related to the process skill known as valuing, and was a preliminary investigation with a limited number of subjects. As an

outgrowth of this study, Anderson (1973) examined touching as related to the process skill of communicating. Anderson's (1973) study, Touching: Communication During a Quiet Activity, was conducted in a controlled setting with the researcher confined to observation of two children who were isolated from the natural preschool setting. According to Berman and Roderick (1973), research using observational systems that focus on isolated behaviors lacks the information needed to fully understand the interaction processes which contribute to the development of personal power. On the other hand, direct observation of behavior in a natural setting enables the researcher to delineate behaviors which are elements of the stream of interaction, and thus derive observation systems to be used in future research. Berman and Roderick (1973) support the need for research which takes into consideration the total ecological environment of the subject.

The previously reported studies concerning physical contact among preschool children, as mentioned above, had certain serious limitations. Therefore, there is a need to examine physical contact among preschool children on a broader scale in a more natural setting. It was for this purpose that this study was designed.

#### Purpose of the Study

The current study was part of a larger study conducted to examine physical contact of preschool children in a more natural setting. While another study dealt with physical contact which occurs between preschool children and their peers, the major purpose of this study was to examine physical contact between preschool children and adults. In the current



study the specific hypotheses to be examined were:

- I. There is no significant difference between the frequency of contact behaviors which occur between preschool children and adults in the following three settings:
  - a. self-selected indoor activity period
  - b. self-selected outdoor activity period
  - c. grouptime
- II. There is no significant difference in the frequency with which the following adult contact behaviors occur with children in three observed settings:
  - a. affectionate
  - b. accidental
  - c. assistance
  - d. control
- III. There is no significant difference in the frequency with which the following child contact behaviors with adults occur in three observed settings:
  - a. affectionate
  - b. accidental
  - c. assistance
  - d. control
- IV. There is no significant difference between the total number of contact behaviors which boy and girl preschoolers have with adults.
- V. There is no significant difference between the frequency with which boy and girl preschoolers have the following

contact behaviors with adults:

- a. affectionate
- b. accidental
- c. assistance
- d. control

- VI. There is no significant difference between the frequency with which affectionate contacts with adults are initiated by boys or by girls.
- VII. There is no significant difference between the frequency with which aggressive contacts with adults are initiated by boys or by girls.
- VIII. There is no significant difference in the manner with which boys and girls respond to affectionate contact behavior initiated by adults.

#### Definition of Terms

Natural Setting: That setting in which no restrictions or alterations have been made on the normal pattern or routine.

Physical Contact: Any direct touching of body parts or clothing. Indirect contact includes touching that takes place when an extension of one person touches another, for example, when a hat, board, tinkertoy, etc., held by one person touches another person.

Self-Selected Indoor Activity Period: That time period within the preschool setting when children are free to select and participate in activities arranged in interest centers. These activities include such things as creative art activities, blockbuilding, working with manipulative toys, etc. This period lasted approximately one hour in the

programs where subjects were observed.

Self-Selected Outdoor Activity Period: That time period within the preschool setting when children are free to select and participate in activities designed for outdoors, such as climbing, swinging, riding wheel toys, sand play, etc. This period lasted approximately one hour in the observed programs.

Group time: That time period within the preschool setting when the children participate as a group in quiet activities such as listening to a story, participating in musical activities or creative movement, etc., with a teacher leading the activities. In the observed programs this period lasted for approximately 10 to 15 minutes, and the group generally included from eight to sixteen children.

## CHAPTER II

### REVIEW OF LITERATURE

The literature concerning physical contact among preschool children and adults is quite limited. The review of literature presented here contains related literature in these areas: physical contact among preschool peers, physical contact among parents and children, and physical contact among children and professionals.

#### Physical Contact Between Preschool Peers

The topic of physical contact among preschool peers has not been examined on a wide scale, but the increased emphasis on physical contact in recent years has led some researchers to begin exploring this topic. As stated previously, researchers at the University of Maryland have conducted two studies dealing with preschoolers and physical contact. Childress, Fessler, and Greenblatt (1972) conducted the first study, which was a preliminary investigation into physical contact among preschoolers designed to relate a child's verbal statements about affectionate physical contact to his actual contact behavior in the classroom. After observing and recording physical contact of five subjects for a total of 15 minutes each, the researchers found only 40% of the subjects showed a strong correlation between their verbal and nonverbal expressions of feelings toward affectionate contact behavior. Other results showed that the primary contact behavior observed among

preschoolers was identified as "accidental."

A later study done by Anderson (1973) at the University of Maryland examined touching as a communicative behavior. Anderson observed children ages three to five during a three and one-half minute film loop showing dinosaurs. Two children were invited to watch the film in an isolated location. A modified form of Childress' et al. (1972) observational checklist was used by Anderson. Findings from Anderson's study showed that touching as a communicative behavior can be observed and categorized. The more specific findings showed that touching behavior among different age groups differed quantitatively as well as within a specific age group; that the total amount of touching behaviors did not relate to age; and that three's and four's experienced more contact categorized as "other," while five's showed more "accidental" contacts. From these findings, Anderson developed a revised category system consisting of a total of 13 categories of contact behavior.

Strain and Timm (1974) examined physical contact between a behaviorally disordered preschool child and her peers. It was found that physical contact increased as adults responded positively to this interaction. Those children who received more positive attention from the teacher were noted to initiate more appropriate contacts than the surrounding children.

According to Hallahan, Kaufman, and Mueller (1975) in a study relating motor and verbal behaviors among preschoolers, verbalization among preschoolers has a correlation with physical contact among peers.

In the area of physical contact among peers, some work has been done on specific types of physical contact. Adams and Hamm (1973) conducted a study to determine the effect of reinforced versus

nonreinforced response to initiative aggressive behavior. They found that the children who received reinforced responses for their behavior showed significantly more physical, verbal, and nonimitative aggressive behavior. Another study dealing with aggressive contact behavior was conducted by McIntyre (1975) in which she investigated sex differences in preschool children's aggression. Her findings showed that girls used physical aggression much less than boys, and both sexes used direct aggression as opposed to indirect aggression.

#### Physical Contact Between Parents and Children

The importance of physical contact among young children and their parents was realized many years ago. Brennemann (1932) introduced the idea of "mothering" in which hospital ward infants were picked up, carried, and basically mothered several times a day. The mortality rates of ward infants under these conditions fell from 30 to 35% to less than 10% in one year's time. Sokoloff, Yaffe, Weintraub, and Blase (1969) found after investigating the effects of handling on premature infants, that there was significant difference between those premature infants who were handled and stroked as compared to those who just received routine care. Their findings showed that the infants who had been handled and stroked were more active, gained weight faster, cried less, and appeared to be healthier than those infants who received routine care.

Black (1969) reported that physical contact between a mother and toddler varied with the child's feeling of security in a strange setting. Black concluded that the child felt more secure when physical contact with the mother was allowed. Another study showing the

importance of maternal contact in the developmental process of the child was conducted by Yarrow, Goodwin, Manheimer, and Milowe (1971). They found with 53 adopted children as subjects that there was a strong positive relationship between maternal variables and a child's emotional and intellectual development. One of these variables they found to be extremely important was physical contact between the child and mother.

Harlow (1958) has done much research with rhesus monkeys and their responses to substitute mothers. Some follow-up studies done by Harlow, Guck, and Suomi (1972) related to Harlow's previous studies showed that monkeys isolated from their real mothers behaved inadequately and ineptly in social situations when they reached adolescence and adulthood. They concluded that a child's love for his mother was caused by basic bodily contact which was an unlearned, nativistic force.

Other studies have dealt with physical contacts between parents and children. Enlow (1973) investigated attention seeking behavior among children toward their mothers, and found that children were in physical contact with their mothers longer when the mother ignored the child. When the mother included the child in the conversation, physical contact occurred for shorter periods of time.

In research by Ling and Ling (1974) concerning communication development during the first three years of life, results showed that mothers were in bodily contact more with male infants and more attentive to the first-born child.

Belking and Routh (1975) again report how the child depends on actual contact with the mother for security. By observing three- and four-year-olds in four different play situations, the researchers discovered that less crying and whimpering occurred, more singing and

talking was apparent, and actual touching of the mother took place 2% of the time when the mother was in the room. If the child was left with a stranger, no touching occurred, and crying and whimpering took the place of singing and talking.

#### Physical Contact Between Children and Professionals

Clapp (1969) states that physical touching between a teacher and young student makes for more positive interaction between the two. In research done by Clapp to determine if touching helped kindergarten children work longer at a specific task, results showed no significant difference when touching was employed. Therefore, Clapp suggests a need for more research in the area of personal touching.

Roderick and Vawter (1972) investigated the nonverbal behaviors of teachers and students in order that their results might aid in curriculum planning and teacher education. They made use of a category system describing 12 nonverbal behaviors, some of which included physical contact. Those categories which specifically identify physical contact were categorized as initiating positive, initiating negative, responding positive, or responding negative. On the preschool level it was found that teachers exhibited more initiating positive and responding positive as opposed to the initiating negative or responding negative behavior. Pupils showed more initiating positive and negative behavior as compared to responding positive or negative.

Brandt (1972) observed instruction and behavior in a British Infant School and found that children were in contact with adults 29.3% of the total school time; in contact with other children 20.4% of the time; and



the remainder of the time was categorized as appropriate tasks or distractions. Over one-half of the contacts between children were cooperative in nature, and older children were found to be in contact more with adults as compared to the younger children.

A recent study done by Anderson (1974) dealt with physical contact between the therapist and child. Anderson compared the results of traditional play therapy sessions with "theraplay: sessions in which physical interaction between the child and therapist is employed." The findings showed an increase in I. Q. score of ten points using therapy as compared to a four or five point increase when using play therapy.

#### Summary

Although literature on the topic of physical contact among preschool children and adults is limited, there have been some studies done and findings reported in related areas.

Studies concerning physical contact among preschool children and their peers have reported such findings as the following: touching behaviors differ with respect to the age of the child, while age has nothing to do with the total amount of physical contact which a child has with another child; an increase in physical contact can be seen as adult reinforcement increases, especially in the area of aggressive physical contact; and more aggression occurs among males than females.

In the area of physical contact between young children and their parents' studies have reported the following: an increase in an infant's activity, weight gain, and disposition due to handling and stroking; a stronger feeling of security due to maternal contact as well

as a positive relationship between maternal contact and a child's emotional, intellectual, and social development; and more attentiveness shown to the first born child by mothers as well as more physical contact occurring between male infants and mothers as compared to female infants.

Some researchers have examined physical contact among young children and nonrelated adults in the child's life. Such studies have shown that physical contact between teachers and students results in a more positive relationship between the two, and that older children were found to be in contact more with adults as compared to young children. Another related study in this area showed more of an increase in I. Q. score due to physical contact which occurred between the therapist and child during therapy sessions as compared to sessions when physical contact was not involved.

## CHAPTER III

### PROCEDURE

#### Selection of Subjects

The 40 subjects for this study consisted of 22 females and 18 males ranging in age from three years, six months to five years, eight months. All of the children attended the Oklahoma State University Child Development Laboratory Schools. It should be noted that the primary purpose of these laboratory schools is training college students in preschool education, therefore the ratio of children to adults is usually four children to every adult. The adults in the study consisted of a head teacher, graduate assistant, and student teachers in early childhood education. Other adults involved in the study were observers and parents of the children. Therefore the majority of adults in the study had been trained in early childhood education or were in the process of getting a degree in the field. The socioeconomic status of the families whose children were included in this study was judged to be middle class since most of the parents were associated with the university as faculty or graduate students or were business and or professional members of the community in which the university is located.

#### The Instrument

As stated previously, this study was part of a larger study designed for the purpose of examining physical contact among preschoolers

in a natural setting. The other researcher involved in the study examined physical contact among preschool peers, while the present researcher examined physical contact between preschool children and adults. Each researcher observed 20 different subjects as they interacted with both peers and adults using an observational category system which describes and defines 12 categories of physical contact, first developed by Childress et al. (1972), and later revised by Anderson (1973). For the purpose of increasing sample size, the data of the two researchers were combined, but each researcher analyzed and reported only the data relevant to her study, i.e., contact with peers or with adults.

As the current researchers used Anderson's (1973) category system in their preliminary observations, certain difficulties became apparent. The complexity of the natural setting as compared to the observation of two isolated children required additions and revisions of Anderson's category system. The current researchers also had difficulty in interpreting certain portions of Anderson's category system, again emphasizing the need for revisions.

Anderson's category system contains 13 categories. In defining several categories, Anderson used the motive of the subject as the determining factor. An example of this criterion occurs in her definitions of the categories exploratory-tactile and cognitive contact. She defines exploratory-tactile as "any contact in which the dominant behavior is exploration by means of the sense of touch" while cognitive contact is defined as "any contact, utilizing the sense of touch, in which the primary motive appears to be learning by touch" (Anderson, 1973, p. 32). Anderson also uses the primary and secondary focus as

the discriminating factor in the categories of companionship, expressive, and affectionate. The current researchers found it extremely difficult to distinguish on the basis of observation between motives and primary or secondary focus. They therefore, combined exploratory-tactile and cognitive into the single category of "exploratory-tactile," and expressive, affectionate, and companionship into the single category of "affectionate."

After preliminary observations, the researchers discovered that the complex setting used in this study required two new categories in addition to the revisions discussed previously. These categories were "assistance" and "other nonphysical." With additions and revisions the present category system consists of 12 categories. Eight of the following categories are quoted from Anderson (1973, pp. 31-34). These eight are designated by a single asterisk. Two of the other categories were combined and adapted from her original definitions. These are designated by two asterisks. The two remaining categories were defined by the current researchers. The categories are:

- \*1. Fear-motivated contact: "Any contact that is motivated by fear of something or someone other than the person whom one is in contact."  
Examples: grasping and hugging in response to fear or such things as sirens, bugs, fantasy monsters, etc.
- \*2. Aggressive contact: "Any contact which appears to be motivated by negative feelings or appears to be a deliberate hostile act."  
Examples: hitting, kicking, biting, and pinching.
- \*3. Control-by contact: "Any contact which attempts to restrain another person, or to keep him from an action, or physically to move or guide another person."  
Examples: an adult removing a child from a stressful situation, a subject grabbing an aggressor's hand to prevent a hostile act, or a child moving or pushing someone out of their line of vision.

- \*4. Attention-getting contact: "Any contact which appears to be motivated by getting the attention of someone else."  
Examples: tugging or tapping at another's appendage or clothing.
- \*5. Accidental contact: "Contact that appears to be unintentional."  
Examples: bumping into another person, rubbing against another person when in close contact and similar actions.
- \*\*6. Exploratory-tactile contact: Any contact involving learning or exploration by the sense of touch.  
Examples: hair stroking, sensory experimentation with clothing, lifting another child to determine one's weight, comparing hand size, etc.
- \*7. Extension of verbal communication by contact: "This contact follows or accompanies some form of verbal communication and emphasizes it. The contact would not have an affective component such as a hug or a slap."  
Examples: a teacher touching a child while giving guidance, etc.
- \*8. Required contact: "Contact required by rules or an authority figure. It would include the following: contact during games which require contact or holding hands when a teacher requests that students hold hands."
- \*\*9. Affectionate contact: Any contact which demonstrates positive feeling toward another person or occurs while expressing pleasurable feelings.  
Examples: sitting close to someone while reading a story, two children jumping up and down, hand in hand, as they watch a race, hugging, etc.
- 10. Assistance: Any contact which occurs while persons are giving or receiving aid.  
Examples: a teacher giving a push to a child in the swing, a child pushing another child on a wheel toy such as a scooter, tying shoes, etc.
- \*11. Other physical contact: "Any contact which cannot be included in the previous categories."
- 12. Other nonphysical: The behaviors included in this category are all those behaviors which occur in response to or which provoke physical contact, but the actions do not themselves involve direct physical contact.  
Examples: withdrawing from an initiated contact, verbal attempts to initiate or respond to physical contact, gesturing in response to direct contact, etc.

### Observing and Recording

Observations took place in four Oklahoma State University Child Development Laboratory groups. One researcher observed two morning groups, and the other researcher observed two afternoon groups. The groups each consisted of 16 children, a head teacher, a graduate assistant, a varied number of student teachers, and observers. Originally, 11 subjects were randomly selected from the 16 children in each laboratory group, but due to absenteeism only 10 subjects from each laboratory were used in the final analysis. Each subject was observed in 3-minute intervals for a total of 36 minutes. Each 3-minute interval was further divided into 60-second blocks and was so designated on the observation forms. During the observations, in addition to categorizing the subject's behavior, the behavior of those who came in contact with the subject was categorized.

The observations were made in three different settings: self-selected indoor activity period, self-selected outdoor activity period, and group time. To insure that every subject was observed four times in each setting, the researcher had three envelopes labeled according to settings. Each envelope contained the subjects' names. As the researcher observed in a specific setting, she randomly selected a name for the upcoming 3-minute interval. After this subject was observed, his name was put aside in another envelope and the next subject was chosen. This procedure was repeated until every subject had been observed four times in each of the three settings.

In recording the observations, the researchers chose specific symbols to designate varied situations and behaviors. (For more

specific information, see Appendix A.)

1. In the categories of aggressive, control, attention-getting and affectionate, the person who initiated the contact and the person who responded to the contact were designated in all of the situations when the researcher could actually determine the initiator and respondent.
2. Any contacts that involved the same two persons and was sustained for the entire 60-second block were marked with an arrow. This arrow was extended if the action continued into any following 60-second blocks.
3. In recording any physical contact, the researchers specified the sex of the persons involved.
4. When an adult was involved in the recorded situations, designations were made to identify the adult as head teacher, graduate assistant, student teacher, parent, or other adult.

#### Observer Reliability

In order to establish observer reliability, the two researchers participated in practice observations for a period of two hours. On the following day the observers independently observed the same nine children for 5-minute intervals. From these observations it became apparent that recording for a 5-minute interval was not appropriate for the situation and the category system being used. A decision to reduce the time period to 3-minute intervals was made on the basis of experience in the first trial observation period. In order to test and practice the new procedure, an additional ten subjects were observed in 3-minute intervals. From these nineteen observations an observer



reliability of 91% was established.

#### Analysis of Data

For the purpose of analyzing the data, the present researcher used a frequency count of contact behaviors obtained from the observation forms used to collect the data. For Hypotheses I-III, each contact by an adult or a child was counted separately as these contacts were independent of each other. A specific contact behavior by a child did not always receive the same response by an adult. Therefore, each time a contact occurred between an adult and child there were two behaviors to be counted.

In totaling the contact behaviors for Hypotheses IV and V, a contact which occurred between an adult and a boy or an adult and a girl was counted once depending on the sex of the child. This hypothesis was concerned only with the overall total number of contacts between adult and children dependent on the sex of the child, not on the adult's reaction to the contact.

For the remainder of the hypotheses, the researcher counted contact behaviors independently of the other person involved in the contact. For example, if a male initiated affectionate behavior, then this contact was counted once and the adult's response was not considered.

For statistical analysis of the data, the researcher used Chi square, except in the situations in which the sample number made the Chi square inappropriate. In these situations, the binomial test was used.

For more specific information concerning the frequency count used to test the hypotheses, see Appendix B.

## CHAPTER IV

### EXAMINATION OF HYPOTHESES

Hypothesis I. There is no significant difference between the frequency of contact behaviors which occur between preschool children and adults in the following three settings: self-selected indoor activity period, self-selected outdoor period, and grouptime.

Analysis of the data allows for rejection of this hypothesis. Table I reveals that there is a significant difference ( $p < .001$ ) in the frequency with which physical contact occurs between preschoolers and adults depending on the preschool setting. Observations revealed that most physical contact between adults and preschool children occurs during the indoor activity period, while grouptime has the least amount of physical contact between adults and preschool children.

TABLE I

CHI SQUARE VALUE REFLECTING DIFFERENCES IN FREQUENCY  
OF PHYSICAL CONTACT OCCURRING BETWEEN PRESCHOOLERS  
AND ADULTS IN THREE SETTINGS

Settings	$\chi^2$	Level of Significance
Indoor Activity Period	42.379	$p < .001$
Outdoor Activity Period		
Grouptime		

Hypothesis II. There is no significant difference in the frequency with which the following adult contact behaviors occur with children in three observed settings: affectionate, accidental, assistance, and control.

As Table II indicates in the occurrence of adult affectionate contact behavior with children, there is no significant difference in regard to setting. Therefore, this portion of the hypothesis is held tenable. In the categories of accidental, assistance, and control, analysis shows that there is a significant difference in the frequency of contact behaviors and setting. In the area of accidental contact, the greatest number of adult accidental contacts were recorded during the indoor activity period, while the number of contacts in the outdoor activity period were almost equal. Adult control contacts were recorded over twice as many times in group times as compared to indoor or outdoor activity periods. Contact behavior categorized as assistance occurred most during the outdoor activity period with the number of contacts occurring indoors being almost identical. Assistance recorded during group times was approximately one eighth of the total number recorded in both the indoor and outdoor activity period.

Hypothesis III. There is no significant difference in the frequency with which the following child contact behaviors with adults occur in three observed settings: affectionate, accidental, assistance, and control.

Table III reveals that there is no significant difference in the frequency of affectionate child contact behavior with adults in regard to setting. However, the table does reveal a significant difference in frequency of accidental ( $p < .01$ ) and assistance ( $p < .001$ ) contact

TABLE II

CHI SQUARE VALUES REFLECTING DIFFERENCES IN FREQUENCIES  
OF ADULT CONTACT BEHAVIORS WITH PRESCHOOLERS  
IN THREE SETTINGS

Contact Behaviors	$\chi^2$	Level of Significance
Affectionate	.533	N.S.
Accidental	9.934	$p < .01$
Assistance	48.065	$p < .001$
Control	9.8	$p < .05$

TABLE III

CHI SQUARE VALUES REFLECTING DIFFERENCES IN FREQUENCIES  
OF CHILD CONTACT BEHAVIORS WITH ADULTS  
IN THREE SETTINGS

Contact Behaviors	$\chi^2$	Level of Significance
Affectionate	4.039	N.S.
Accidental	9.934	$p < .01$
Assistance	48.065	$p < .001$
Control	Insufficient data	N.S.

behaviors in regard to setting. The control contact behavior could not be tested due to insufficient data.

Observations recorded most accidental contacts between children and adults occurred during the indoor activity period, while the number of accidental contacts during the outdoor activity period and group time were almost accidental. In the category of assistance, observations showed more assistance between children and adults occurred during the outdoor activity period, while assistance occurred almost as much during the indoor activity period and only one-eighth as much during group time.

Hypothesis IV. There is no significant difference between the total number of contact behaviors which boy and girl preschoolers have with adults.

Results reported in Table IV reveal that there is no significant difference in the total number of contacts which occur between adults and boy preschoolers or adults and girl preschoolers. On the basis of this finding this hypothesis is held tenable.

TABLE IV

CHI SQUARE VALUE REFLECTING DIFFERENCES  
IN TOTAL CONTACTS WHICH BOY AND GIRL  
PRESCHOOLERS HAVE WITH ADULTS

Total Contact Behavior	$X^2$	Level of Significance
Boy-Adult Contacts Girl-Adult Contacts	3.934	N.S.

Hypothesis V. There is no significant difference between the frequency with which boy and girl preschoolers have the following contact behaviors with adults: affectionate, accidental, assistance, and control.

Table V reveals that there is no significant difference between the frequency with which boy and girl preschoolers have affectionate, accidental, and controlling contact behaviors with adults. The table shows there is a significant difference with which the contact behavior of assistance occurs between boy-adult as opposed to girl-adult contact. Observations revealed that more assistance occurred between females and adults as compared to males and adults.

TABLE V  
CHI SQUARE AND BINOMIAL TEST VALUES REFLECTING  
DIFFERENCES IN BOY-ADULT VERSUS  
GIRL-ADULT CONTACT BEHAVIORS

Contact Behaviors	$\chi^2$	Level of Significance
Affectionate	1.882	N.S.
Accidental	.082	N.S.
Assistance	8.258	p<.01
Control	Binomial test	N.S.

Hypothesis VI. There is no significant difference between the frequency with which affectionate contacts with adults are initiated by boys or by girls.

Hypothesis VII. There is no significant difference between the frequency with which aggressive contacts with adults are initiated by boys or by girls.

Table VI reveals that there is a significant difference in the frequency with which affectionate contacts with adults are initiated by boys or by girls. Girls were recorded as initiating affectionate contact with adults more often than boys. The difference is significant at the .05 level.

Due to the small sample size concerning Hypothesis VII, the binomial test was used for analysis of the data. Table VI supports the hypothesis that there is no significant difference in the frequency with which aggressive contact behavior with adults is initiated by boys or by girls.

TABLE VI

CHI SQUARE AND BINOMIAL TEST VALUES REFLECTING  
DIFFERENCES IN INITIATED BEHAVIOR CONTACTS  
BY BOYS OR BY GIRLS WITH ADULTS

Contact Behavior	Test and Value	Level of Significance
Initiated Affectionate	$X^2 = 6.00$	$p < .05$
Initiated Aggressive	Binomial	N.S.

Hypothesis VIII. There is no significant difference in the manner with which boys or girls respond to affectionate contact behavior



initiated by adults.

Again due to small sample size concerning Hypothesis VIII, the binomial test was used for analysis of the data. Responses generally given to adult-initiated affectionate contact were categorized as affectionate or other nonphysical. Males demonstrated other nonphysical responses three times more than affectionate responses to adult-initiated affectionate contact, while females responded with other nonphysical responses twice as many times as affectionate responses when affectionate contact was initiated by an adult. The binomial test shows that there is no significant difference in responses given by boys or girls to affectionate contact initiated by an adult. On the basis of this finding, this hypothesis is held tenable.

## CHAPTER V

### SUMMARY AND RECOMMENDATIONS

The purpose of this study was to examine physical contact between preschool children and adults in a natural setting. The hypotheses examined compared the frequency of total physical contacts made in three different preschool settings, the frequency of specified adult contacts [affectionate, accidental, assistance, and control] and specified child contacts [affectionate, accidental, assistance, and control] in three settings, the frequency of child initiated affectionate and aggressive contacts [boy versus girl], and responses given by boys and girls to initiated adult affectionate contact.

An observational method was used to gather data for testing the hypotheses. After observer reliability was established, each subject was observed for a total of 36 minutes. This total time was divided into four 3-minute observations in each of the three preschool settings, totaling 12 observations for each subject.

Observations were made using a revision of a category system first developed by Anderson (1973) for her research on touching in a controlled setting. The revised category system was developed after preliminary observations made by the researcher and contains 12 categories.

#### Subjects

The subjects for this study were 40 preschoolers, 22 girls and 18

boys, enrolled in the Oklahoma State University Child Development Laboratory Schools. These children ranged in age from three years, six months to five years, eight months. The adults in the study were teachers or student teachers in the laboratory schools, parents of the children, or observers.

### Findings

Chi square analyses were utilized to determine the significance of differences in frequencies and kinds of contact behaviors when sample size permitted. In those instances where the sample size was too small for Chi square analysis, a binomial test was used.

From the results of the Chi square analysis, setting did make a significant difference ( $p < .001$ ) in the frequency with which total physical contacts occurred between adults and preschoolers. The greatest amount of physical contact occurred between preschoolers and adults in the indoor activity period with the least amount of contact occurring during group time. These results show that spatial confinement has a direct influence on physical contact as the working area per person indoors is less than the working area per person outdoors.

Also by Chi square analysis some significant differences were found in the frequency with which certain adult-contact and child-contact behaviors occurred in the three settings. These differences were seen in the adult contact behaviors categorized as accidental ( $p < .01$ ), assistance ( $p < .001$ ), and control ( $p < .05$ ), while differences in child contact behaviors were seen in the two categories of accidental ( $p < .01$ ) and assistance ( $p < .001$ ). A consistent finding in both adult affectionate and child affectionate contact shows that affectionate

contact is not dependent on setting. In both child and adult accidental contact behaviors a greater total was recorded during the indoor activity period. The smaller working area per person indoors as compared to outdoors can again help explain the difference in the total number of accidental contacts per preschool setting. In the area of physical contact categorized as assistance, both children and adults exhibited more assistance during the outdoor activity periods as compared to indoor activity periods and group times. One explanation for the occurrence of more physical contact categorized as assistance during outdoor activity periods is due to the nature of outdoor activities. Outdoor activities often require more reassurance and assistance for completion such as climbing, swinging, and woodworking. In the category categorized as control, more adult control was recorded during group times as compared to the indoor and outdoor activity periods. The fact that group times consist of more structured activities than both the indoor and outdoor activity periods helps to explain why more adult contact categorized as control was recorded during this preschool setting.

The findings also showed that there is no significant difference in the frequency with which boys and girls have contact with adults, except in the case of assistance ( $p < .01$ ). Results showed that girls have more physical contact categorized as assistance than boys. As reported, there is evidence of a significant difference ( $p < .05$ ) in which affectionate contact is initiated by boys or by girls, with girls initiating affectionate contact with adults more often than boys, but no significant difference in the case of initiated aggressive contact by boys or by girls. The fact that girls have more physical contact categorized as assistance and initiate more affectionate contact with adults

demonstrates the influence that society has on sex-role stereo typing at an early age. Many behavioral characteristics such as these become a part of an individual's personality depending on the person's sex as a result of parental and environmental expectations and feedback. As the new sex roles become more established, results such as these may be obsolete.

Analysis by the binomial test shows that there is no significant difference in the responses given by boys or by girls to initiated adult affectionate contact. Although there was no significant difference shown in the responses related to this hypothesis due to the small sample size involved in this hypothesis, a comparison of percentages shows that girls respond affectionately 50% of the time to adult initiated affection while boys respond affectionately only 33% of the time. This comparison of percentages again points to the difference in cultural expectations concerning male and female sex roles.

#### Recommendations for Further Research

This investigator makes the following recommendations:

1. That the study be done with a larger sample size.
2. That the study be done with subjects of more varied ethnic and social groups.
3. That the study be done in other child care settings not designed specifically for the purpose of training teachers in early childhood education and having a larger pupil-teacher ratio than this study possessed.
4. That the study be done using a video taping process of the

observations made in order to allow for complete descriptions of all contacts made during the observation intervals.

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APPENDIX A

Date \_\_\_\_\_  
 Subject \_\_\_\_\_  
 Setting \_\_\_\_\_

1-Subject  
 2-Interactor

I-Initiator  
 R-Responder  
 Q-Continuous

M-Male child  
 F-Female Child  
 P-Parent

H-Head teacher  
 G-Graduate assistant  
 S-Student teacher

Fear F		Aggression Ag		Control C		Attention Getting At		Accidental Ac		Exploratory Tactile Et		Extension of Verbal Ev		Required R		Affectionate Af		Assistance As		Other Physical O		Other Nonphysical On	
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
																						First Minute	
																						Second Minute	
																						Third Minute	

**APPENDIX B**



VITA<sup>2</sup>

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