

TOUCHING BEHAVIOR AMONG YOUNG CHILDREN

By

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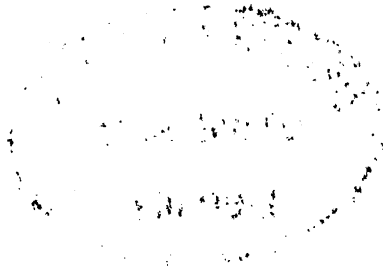
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CHAPTER I

INTRODUCTION

The sense of touch performs an array of functions for every individual. According to Montagu (1971), touch is the earliest sense to develop in the human embryo. Infants use touch as a reliable source of information and depend on touch as their primary form of communication and interaction. As noted by Anderson (1973), during the preschool stage of development, young children often supplement their growing ability at verbal communication with nonverbal, tactile communication. Piaget (1954) states that concrete, tactile manipulation is the method most relied upon for gaining information during early and middle childhood. The sense of touch continues to be important throughout an individual's life (taking on added dimensions as a person attains functioning sexuality), but it is during these first years that patterns for physical contact are developed (Montagu, 1971).

Research in the area of physical contact has primarily been confined to the developmental stages of infancy and adulthood. Little research has been done on the normal preschool aged child. However, Berman (1968) and her co-researchers at the University of Maryland realized the significance of touch in the young child's life. Using Berman's theoretical framework, two exploratory studies (Childress, Fessler, & Greenblatt, 1972; Anderson, 1973) were undertaken to investigate physical contact in young children. The theoretical framework

developed by Berman (1968) emphasizes the importance of eight process skills. Berman (1973) defined process skills as:

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.
(p. 275)

The eight skills identified are (a) perceiving, (b) communicating, (c) loving, (d) decision making, (e) knowing, (f) patterning, (g) creating, and (h) valuing. The sense of touch can be an important factor in the process of working toward competency in all of these areas.

Because the initial studies were exploratory in nature, the researchers limited the range of their investigation. The first study made only a tentative step toward investigating physical contact in young children. The second study limited its scope of investigation to physical contact in a restricted setting. According to Berman and Roderick (1973), rather than investigate an isolated behavior, the behavior should be observed in the context of the total environment.

Observational systems which focus on isolated behaviors do not provide information about the flow of interaction. . . . Direct observation of behavior as it occurs in the natural setting provides data which enable the researcher to achieve specificity in delineating behaviors that are elements of the stream of interaction and in deriving observational systems from these data. (p. 9)

There is a recognized need for a study of the physical contacts of young children in the natural setting of the classroom.

Purpose

This study is part of a larger, more comprehensive study of physical contact between children and adults and between children and their peers. The general purpose was to observe and categorize touching behaviors among preschool aged peers in the natural setting of the early childhood classroom.

The more specific purposes of this study were:

1. To further refine the instrument, "Observation of Physical Contact," developed by Childress et al. (1972) and later modified by Anderson (1973).
2. To record, categorize, and compare the various physical contacts engaged in by preschool aged peers.
3. To observe and compare physical contact in the settings of (a) indoor self-selected time, (b) outdoor self-selected time, and (c) group time, to determine the relationship between physical contact and environmental setting.
4. To determine the relationship between the various categories of contact and the sex of the children.
5. To determine the relationship between initiated physical contact and the responses to that contact.
6. To determine the relationship between the various categories of contact and the age of the children.

Hypotheses

The following hypotheses were examined:

1. There are no differences in the frequencies of occurrence among the various categories of physical contact.

2. There are no significant differences in the frequencies of contacts in the various categories in the following settings: (a) indoor self-selected time, (b) outdoor self-selected time, and (c) group time.

3. There are no significant differences in the frequencies of contacts in the various observational categories exhibited by preschool males and females.

4. There are no significant differences between male and female children in the frequencies of physical contact in the various categories when interacting with members of the same sex and members of the opposite sex.

5. There are no significant differences between male and female children's frequencies of initiated affectionate or aggressive contacts and their responses to affectionate or aggressive contacts.

6. There are no significant differences between four years olds' frequency of physical contact in each of the observational categories as compared to the frequency of contact exhibited by three- and five-year olds.

Definition of Terms

* Physical Contact: Any direct or indirect 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.

* Natural Setting: A normal environment where no attempt has been made to manipulate events or other variables.

* Indoor Self-Selected Time: The child is free to move throughout the room selecting from a variety of materials and activities that are

presented in an interest center arrangement. This period usually lasts about an hour.

Outdoor Self-Selected Time: The children move freely throughout the yard. They may choose from certain basic activities and materials that are available every day (i.e. tricycles, carpentry, sandbox, etc.) or from changing activities (i.e. blowing bubbles, flying kites, painting murals). This period usually lasts about an hour.

Group Time: The children are gathered in groups of from eight to sixteen children to participate in a teacher-led activity, such as story telling, creative movement, music, etc. This period usually occurs twice a day and lasts about 10 to 15 minutes at each gathering.

CHAPTER II

REVIEW OF LITERATURE

There is a scarcity of literature dealing directly with the physical contact behaviors of young children. Therefore, related literature will be reviewed in the areas of infancy and early childhood.

Infancy

Much of the available literature on physical contact has focussed on the importance of touch during infancy. The importance of tactile stimulation, or "tender loving care" for infants was first recognized in the late 19th century by doctors in institutions for infants. Chapin (1915) and Brennemann (1932) published their observations of the statistical chances of survival for a "handled" infant vs. the chances of survival of a tactually deprived infant. The tactually deprived infants' chances for survival in their first year was less than 5%. More recently the focus on maternal deprivation has shifted to premature infants. Sokoloff, Yaffe, Weintraub, and Blase (1969) reported that premature infants who were stroked regularly gained weight more quickly, were more active, and were more healthy than premature infants who received only routine care.

Maternal behavior during physical contact has also been studied. Heinsteins (1963) found that mothers who behaved in a cold, stiff, or unsure manner had much less influence over their children's behavior

in later years than did mothers who were warm and sure in their contact. Yarrow, Goodwin, Manheimer, and Milowe (1971) further indicated that a positive maternal-infant relationship that included warm, frequent physical contact had a favorable effect on later emotional and intellectual development of the child. Ling and Ling (1974) reported that, in terms of quantity of contact, mothers made more body contact with male infants and were most attentive to first born children. However, Brooks and Lewis (1974) found indications that female infants initiate more touching contact with their mothers than do males.

Early Childhood

Past infancy, into the toddler and early childhood years, research has indicated a continuance of reliance on maternal physical contact. Enlow (1973) found that five- and six-year-old children engaged in more physical contact with their mothers when they felt they were being ignored. Belkin and Routh (1975) reported that three- to four-year-old children exhibited more comfortable behavior in a strange situation when their mother was in physical contact range than when she was only visible or totally absent. Black (1969) reported similar findings.

The aggressive contact that is a part of the young child's attempt to interact with his/her peers is another aspect of physical contact which has been researched. McIntyre (1975) reported that boys engaged in predominantly physical aggression while the aggression of girls was predominantly verbal. Whittings and Edwards (1973) found indications in a variety of cultures that aggressive contact is more characteristic of male children. Smith and Connolly (1973) and Arnote (1969) conducted research on the effect of spatial density on aggressive contact. Both

studies indicated that as the amount of space per child decreased, aggressive physical contact increased.

Recently, several studies have been conducted to assess the effect of certain types of reinforcement or therapies on the incidence of aggressive physical contact. Rohen (1969) reported that the viewing of films which showed various types of reinforcements for aggressive physical contact had no significant effect on the actual aggressive contact exhibited by young children. However, Adams and Hamm (1973) reported that viewing a film of a child acting aggressively significantly increased instances of physical aggression in young children. Prestwich (1969) indicated that play therapy techniques for young Indian children and group therapy techniques with their mothers brought about no significant decrease in the amount of aggressive behavior displayed by the children.

The use of physical contact as a method of reinforcement and therapy for young children is another area where there has been some research activity. Strain and Timm (1974) found indications that the combination of verbal praise and physical contact rapidly increased appropriate social behaviors of a behaviorally disordered child and her classroom peers. Clapp (1969) reported physical touching as an appropriate reinforcement to be employed by teachers of young children. Anderson (1974) reported that a method of play therapy which employed physical interaction between the therapist and child increased the child's self-concept, reduced his/her anxiety, and raised the child's IQ an average of 10 points.

A few studies have investigated the frequencies or types of physical contact exhibited by young children. Brandt (1972) observed

instances of contact, both verbal and physical, in the British Infant Schools. He reported that children were found to be in contact with adults 29.3% of the time, with peers 20.4% of the time, and the remainder of the time was spent alone. He also reported that over one half of the peer contacts were cooperative in nature. Hallahan, Kaufman, and Mueller (1975) reported that young children's frequency of verbalization was significantly correlated with their frequency of physical contacts with peers.

The two studies which served as the basis for this study yielded some interesting findings. Childress, et al. (1972) reported a tentative correlation between their subjects' expressed attitudes toward physical contact and their actual body contact behavior. The authors also reported that the most frequent type of physical contact observed was accidental in nature. In a study of physical contact among three-, four-, and five-year-olds, Anderson (1973) reported that accidental contact was the most frequently observed categorized behavior. She also found indications that children choose to interact with members of their own sex much more frequently than with members of the opposite sex. The same study found indications that the frequency of total touching contacts was not related to age, but that the frequencies for contacts in the different categories of contact varied with age. For example, there was more affectionate contact between the three-year-olds than in the other age categories.

CHAPTER III

PROCEDURE

Subjects

The subjects for this study were 40 boys and girls ranging in age from three years and six months to five years and eight months. All of the children attended the Oklahoma State University Child Development Laboratory Schools. The socioeconomic status of their families was judged to be primarily middle class.

Instrument

As previously stated, Anderson's (1973) modified category system, "Observation of Physical Contact," was used as a basis for the instrument employed in this study. Anderson's system contains 13 categories. In defining several of these categories, Anderson used the motive of the subject as the determining factor. Examples of this occur in her definition 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 of the child as the discriminating factor in the categories of "companionship," "expressive," and "affectionate" contact.

Anderson's instrument was revised through the collaboration of the two principal investigators, the investigator of this study and the investigator of the related research project on physical contacts between children and adults. Because the investigators found it difficult to distinguish between secondary and primary motives, exploratory tactile and cognitive were combined into the single category, exploratory tactile. Also, companionship, expressive, and affectionate were combined to form the category, affectionate. In addition to these revisions, two additional categories were developed, assistance and other nonphysical contact.

The final instrument used in the study consisted of 12 categories. Eight are quoted from Anderson (1973, pp. 31-34). These eight are designated by one asterisk. Two are combined and adapted from the original definitions. These are designated by two asterisks. The two remaining categories are defined by the current investigators. 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 with. Examples: Grasping and hugging in response to fear of 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 moving a child from a stressful situation, a subject grabbing an aggressor's hand, or a child moving or pushing someone out of his line of vision.
- *4. Attention getting: 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 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 holding hands as they watch a race, etc.

10. Assistance: Any contact which occurs while persons are giving or receiving aid. Examples: A teacher pushing a child on a swing, a child pushing another child on a tricycle, a child helping another child with his/her coat, 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 which do not themselves involve physical contact. Examples: Withdrawing from an initiated contact, verbal attempts to initiate or respond to physical contact, gesturing in response to physical contact, etc.

Data Collection

Observer Reliability

Data were collected by the two principal investigators after establishing inter-observer reliability by the following procedure. The observers participated in practice observations for a period of two hours. On the following day the observers independently observed the same nine children for five minute intervals. From these observations it became apparent that recording for a five minute interval was too long a period to maintain accuracy. It was decided to reduce the time period to three minute intervals. In order to test and practice this new procedure an additional ten subjects were observed in three minute intervals. From these nineteen observations an observer reliability of 91% was established.

Observing and Recording

Observations took place at four Oklahoma State Laboratory Schools. One investigator observed two morning groups and the other investigator observed two afternoon groups. The groups each consisted of 16 children, a head teacher, a graduate assistant, and a varied number of student teachers and observers. Ten subjects were randomly selected from the sixteen children in each class. Each subject was observed in three minute intervals for a total of 36 minutes. Each three minute interval was further divided into 60 second blocks and was so designated on the observation schedule. 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: indoor self-selected time, outdoor self-selected time, and group time. To insure that every subject was observed four times in each setting, the researchers had three envelopes labeled according to settings. Each envelope contained the 10 subjects' names. As the investigators observed in a specific setting they randomly selected a name for the upcoming three minute interval. After this subject was observed that name was set aside 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 observers used specific symbols to designate varied situations and behaviors. The following situations require special explanation:

1. In the categories of aggressive, control, attention getting, and affectionate contact the person who initiates the contact and the person who responds to the contact were designated.
2. Any contact that involved the same two persons and was sustained for the entire 60 second block was 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 observers specified the sex of the persons involved.
4. When an adult was involved in the recorded situations, designations were made as to head teacher, graduate assistant, student teacher, parent or observer.

The observation schedule is included in the Appendix.

Analysis of Data

Percentages and frequencies for each behavioral category were computed. The major hypotheses of the study were tested by chi square analysis.

CHAPTER IV

RESULTS AND DISCUSSION

Examination of Hypotheses

Hypothesis 1: There are no differences in the frequencies or occurrence among the various categories of physical contact. As indicated in Table I, there are differences in the frequencies of contacts among the various categories. The most frequent type of contact observed was accidental, accounting for 55.2% of the total contacts. The next most frequent type of contact, affectionate, was exhibited 19.9% of the time. Assistance, aggressive, and other nonphysical contacts each accounted for approximately 7% of the total (6.5%, 6.7%, and 7.2%, respectively). A chi square analysis of the contacts in the categories of assistance, aggressive, and other nonphysical contact revealed no significant difference in their frequencies of occurrence (Table II).

With four categories having as many as or more contacts than the aggressive category, the data indicate that aggression may be overemphasized in the literature and in the minds of many teachers. Accidental and affectionate contacts occurred much more frequently than aggressive contact. Assistance and other nonphysical contact occurred with equal frequency. Those planning programs for young children can capitalize on these more positive contacts.

Because the number of contacts in the categories of fear, attention getting, extension of verbal, required and other physical contact did

not account for 1% of the total occurrences, these categories will not be included in future discussion.

TABLE I
FREQUENCY AND PERCENTAGE ANALYSIS OF
PHYSICAL CONTACTS BY CATEGORY

Categories	Number of Contacts	Percent of Total
Fear	1	.03
Aggressive	248	6.65
Control	61	1.62
Attention getting	13	.35
Extension of verbal	22	.59
Accidental	2058	55.22
Required	18	.48
Exploratory tactile	45	1.21
Affectionate	742	19.90
Assistance	242	6.49
Other physical	10	.27
Other nonphysical	268	7.19
TOTAL	3728	100.00

TABLE II
CHI SQUARE ANALYSIS OF THREE
PHYSICAL CONTACT CATEGORIES

Category	Frequency	χ^2	p
Aggressive	248		
Assistance	242	1.466	n.s.
Other nonphysical	268		

Hypothesis 2: There are no significant differences in the frequencies of contacts in the various categories in the following settings: (a) indoor self-selected time, (b) outdoor self-selected time, and (c) group time. As indicated in Table III, significantly more of the total physical contacts occurred during group time than during indoor and outdoor self-selected times. ($p < .001$). This finding may be explained by the physical proximity associated with the different settings. Group time is usually conducted with all of the children gathered together in one area of a room. During indoor self-selected time the children are confined to several rooms, but they are free to move and regroup within these confines, while outdoors much more space is naturally available.

★ The amount of space available is inversely related to the number of contacts occurring in each setting.

TABLE III
CHI SQUARE ANALYSIS OF PHYSICAL CONTACTS
IN THREE SETTINGS

Category	Outdoor Self-Selected Time	Indoor Self-Selected Time	Group Time	χ^2	p
Aggressive	79	98	71	4.65	n.s.
Control	24	25	12	6.21	.05
Accidental	498	714	846	89.98	.001
Exploratory Tactile	16	17	12	.94	n.s.
Affectionate	199	152	391	129.64	.001
Assistance	137	80	25	77.76	.001
Other non- physical	98	95	75	3.50	n.s.
TOTALS	1069	1198	1461	64.24	.001

When the total number of contacts is broken down into categories, chi square analysis indicates that accidental contacts occur with significantly greater frequency ($p < .001$) in group time. This may also be explained by the physical proximity associated with the group setting. There were more bodies in close proximity to brush against. Also, some of the activities engaged in during group time encouraged accidental contact, i.e., creative dramatics, creative movement, finger plays, etc.

Group time also seemed to encourage affectionate behavior ($p < .001$), as defined in the category system. The children, while listening to stories, watching films, and listening to the teacher, often grouped together in close bunches in order to see or hear better. By definition, any contacts that occur in this situation are affectionate. It often seemed to the observers that these contacts were more a form of coexistence and fell somewhere between affectionate and accidental contact, instead of demonstrating a "positive feeling toward another person."

Aggressive contact occurred somewhat more frequently ($p < .10$) during indoor self-selected time, although not at a statistically significant level. This finding may be due to two factors. The indoor situation is more crowded than outdoors, but it is less structured than the group setting.

Assistance contact occurred with significantly greater frequency ($p < .001$) during the outdoor self-selected time. The observers' general impression was that much more of the helping behavior was directed in assistance with large motor types of behavior, for example, pushing a friend's trike or swing, or giving a hand to a companion climber. These large motor behaviors occurred outdoors, and this helping was generally accepted. However, when help was offered indoors, it was more frequently

rejected. Indoor assistance involved small motor or cognitive types of activities. There were very few opportunities for assistance contacts during group time.

Two explanations of more frequent and more accepted assistance contact in the outdoor setting are possible. First, outdoors there is plenty of space in which to pursue individual activities. There is less need to establish a territory and stand up for it. Inside, if a child reached over to help, quite often the other child would appear to interpret this move as a threat and reject the offer of assistance. Because ~~☆~~ aggressive contact does occur more frequently indoors and because space is at a premium, it seems possible that the child rejects assistance because of a need to be more protective of personal territory in the more crowded setting.

The second possible explanation for the greater frequency of assistance contacts in the outdoor setting is that young children are more confident of their skills in the large motor areas. They know that they can be of real help to their peers and are less threatened by their peers' abilities. However, in small muscle activities, they are less expert, and therefore less confident of their ability to be of real assistance or to benefit by an offer of help.

The numbers in each of the columns in Table III do not add up to the total figures because the contacts in the categories of fear, attention getting, extension of verbal, required, and other physical were included in the total but were not covered individually in the Table.

Hypothesis 3: There are no significant differences in the frequencies of contacts in the various observational categories exhibited by preschool males and females. As shown in Table IV, females made a

greater number of total contacts, although not to a statistically significant degree ($p < .20$). However, in two categories, there were significant differences in frequency of contacts between the sexes. Males~~*~~ exhibited significantly more aggressive contact ($p < .001$), while females exhibited significantly more affectionate contact. These findings are in agreement with research cited in Chapter II (p. 8), which found aggressive contacts more characteristic of preschool-aged male children.

TABLE IV
CHI SQUARE ANALYSIS OF PHYSICAL CONTACTS EXHIBITED
BY PRESCHOOL MALES AND FEMALES

Category	Male N=18	Female N=22	χ^2	p
Aggressive	90	41	18.32	.001
Control	20	11	2.62	n.s.
Accidental	487	542	2.94	n.s.
Exploratory Tactile	12	12	0.00	n.s.
Affectionate	163	213	6.64	.05
Assistance	52	69	2.38	n.s.
Other Nonphysical	63	59	0.13	n.s.
TOTAL NUMBER OF CONTACTS	898	966	2.48	n.s.

Hypothesis 4:- There are no significant differences between male and female children in the frequencies of physical contact in the various categories when interacting with members of the same sex and members of the opposite sex. The data indicate that young children engage in physical contact primarily with members of their own sex. According to Table V, of the total number of contacts made by males, significantly more contacts involved another male rather than a female. The data indicate that males interacted most often with other males in the categories aggressive, affectionate, assistance, and other non-physical contacts. It may be noted that these categories are generally those which may be characterized as affective, whereas the categories where males tended to interact more frequently with females were cognitive in nature.

TABLE V

CHI SQUARE ANALYSIS OF PHYSICAL CONTACTS EXHIBITED BY
MALES TOWARD MEMBERS OF THE SAME AND OPPOSITE SEX

Category	Interacting With Male	Interacting With Female	χ^2	p
Aggressive	62	28	12.84	.001
Control	11	9	0.20	n.s.
Accidental	257	230	1.50	n.s.
Exploratory Tactile	8	4	1.32	n.s.
Affectionate	116	47	29.20	.001
Assistance	37	15	9.30	.01
Other Nonphysical	44	19	9.92	.01
TOTAL IN ALL CATEGORIES	544	354	40.10	.001

As indicated in Table VI, females also engage in physical contact much more frequently with members of their own sex. Statistically significant differences indicate that in accidental ($p < .001$), affectionate ($p < .001$), and assistance ($p < .05$) contacts, females interacted primarily with females. In only one category, exploratory tactile, did females interact significantly more frequently with males ($p < .05$). The investigator's impression was that most of the interactions in the exploratory tactile category involved "demonstrations of strength." A child flexed his/her muscles for another child to feel, or one child would attempt to lift another child. Possibly, these interactions took place among members of the opposite sex in efforts to clarify sex roles or social relationships.

TABLE VI
CHI SQUARE ANALYSIS OF PHYSICAL CONTACTS EXHIBITED BY
FEMALES TOWARD MEMBERS OF THE SAME AND OPPOSITE SEX

Category	Interacting With Female	Interacting With Male	χ^2	p
Aggressive	19	22	.22	n.s.
Control	5	5	0.00	n.s.
Accidental	319	223	17.00	.001
Exploratory Tactile	1	11	8.32	.05
Affectionate	141	72	22.36	.001
Assistance	44	25	5.24	.05
Other Nonphysical	27	32	.42	n.s.
TOTAL IN ALL CATEGORIES	582	384	40.58	.001

Hypothesis 5: There are no significant differences between male and female children's frequencies of initiated affectionate or aggressive contacts and their responses to affectionate or aggressive contacts.

The data indicate differences in responses by the sexes to initiated aggressive and affectionate behavior (Tables VII and VIII). As may be seen in Table VII, the most frequent response to aggressive contact, regardless of the sex of the initiator, was other nonphysical. These responses were generally verbal and included such things as "Go away," "Teacher," and "You aren't my friend any more." On some occasions the verbal reaction was accompanied by a physical withdrawal.

The second most frequent response to male initiated aggressive contacts was with reciprocal aggressive contacts. Males responded in this manner significantly more frequently than females ($p < .05$). This pattern of response may indicate more willingness and confidence on the part of males to stand up for themselves physically when confronted by another male. When females initiated aggressive contacts, both males and females generally responded in a nonphysical rather than an aggressive manner.

Other nonphysical and aggressive contacts were the most frequent responses to initiated aggressive contact. Controlling contact occurred as a response to physical aggression eight times. There were a few instances of other responses, such as control by contact and affectionate. These categories were not included in the analysis because of the small frequencies of occurrence.

As indicated in Table VIII, the most frequent response to affectionate contact was with reciprocal affectionate contact. Males did show some tendency to respond to female initiated affection, with other

TABLE VII
CHI SQUARE ANALYSIS OF RESPONSES TO INITIATED
AGGRESSIVE PHYSICAL CONTACT BY SEX

Sex of Initiator	Sex of Respondent	Responses		χ^2	p
		Aggressive	Other Nonphysical		
M	M	31	42	4.619	.05
	F	9	35		
F	M	10	16	.002	n.s.
	F	11	21		

nonphysical contact more frequently than females, but this difference was not statistically significant ($p < .10$). Generally, when initiated affectionate contact was responded to by other nonphysical behavior, the affectionate contact was ignored. It often seemed that the child was unaware of the attempted positive interaction.

TABLE VIII
CHI SQUARE ANALYSIS OF RESPONSES TO INITIATED
AFFECTIONATE PHYSICAL CONTACT BY SEX

Sex of Initiator	Sex of Respondent	Responses		χ^2	p
		Affectionate	Other Nonphysical		
M	M	30	20	.002	n.s.
	F	15	11		
F	M	21	11	3.794	n.s.
	F	41	9		

In many instances of affectionate contact, it was not obvious which child was the initiator and which was the responder. Both children were engaged in reciprocal affectionate contact. These encounters were not included in Table VIII.

Hypothesis 6: There are no significant differences between four-year-olds' frequency of physical contact in each of the observational categories as compared to the frequency of contact exhibited by three- and five-year-olds. The three- and five-year-old age groups were combined for two reasons: (1) a greater number of four-year-olds were subjects in the study; and (2) literature (Gesell & Ilg, 1943; and Hurlock, 1972) indicates that the four-year-old is beginning to take steps toward meaningful social interactions with his/her peers. It is generally at this age that the child moves out of solitary or parallel play and into associative or truly cooperative play.

Analysis of the data indicated that four-year-olds do engage in significantly more physical contacts than do three- and five-year-olds. Four-year-olds displayed significantly more frequent aggressive, accidental, and affectionate contacts than did three- and five-year-olds (Table IX).

These findings also support Gesell's belief (1943) that the four-year-old is a truly social being who is striving toward competency in social skills. According to Gesell, three-year-olds are less social and make fewer social contacts than four-year-olds. Five-year-olds may be more sophisticated and socially adept than four-year-olds, and may engage in more verbal than physical interaction. When planning educational programs for four-year-olds, it would be desirable for teachers to

recognize their need for physical interaction when communicating with others.

TABLE IX
CHI SQUARE ANALYSIS OF PHYSICAL CONTACTS BY
AGE OF SUBJECTS

Category	Four-Year Olds N=23	Three- and Five- Year-Olds N=17	χ^2	p
Aggressive	90	41	18.32	.001
Control	15	16	.03	n.s.
Accidental	621	408	44.10	.001
Exploratory Tactile	13	11	.16	n.s.
Affectionate	227	149	16.18	.001
Assistance	69	52	2.38	n.s.
Other Nonphysical	68	54	1.60	n.s.
TOTAL NUMBER OF CONTACTS	1125	739	79.94	.001

CHAPTER V

SUMMARY AND IMPLICATIONS

Summary

The purpose of this research was to examine physical contact as a form of communication among young children. Observation of touching behavior took place in the normal environmental setting of the classroom. The setting was free of any interference or manipulation by the researchers. The interactions among 40 subjects and their peers were categorized according to an observational system first developed by Fessler, et al. (1972) and later revised by Anderson (1973). After slight revision to tailor the system to the needs of this study, the observational system consisted of the following categories: (a) fear motivated contact; (b) aggressive contact; (c) control by contact; (d) attention getting contact; (e) accidental contact; (f) exploratory tactile contact; (g) extension of verbal contact; (h) required contact; (i) affectionate contact; (j) assistance contact; (k) other physical contact; and (l) other nonphysical contact. The subjects were each observed in three minute intervals for a total of 36 minutes each. The data was then analyzed by frequency counts, percentages, and chi square in order to determine if there were any relationships between the types of contacts exhibited and the following variables: (a) environmental setting, i.e. indoor self-selected time, outdoor self-selected time and group time; (b) age; (c) sex; and (d) responses to initiated contacts.

The major findings of the study were:

1. Accidental contacts accounted for 55% of the total contacts, affectionate for 20%, other nonphysical and aggressive for 7% each, and assistance for 6%. The other categories each accounted for less than 2% of the total contacts.

2. When analyzed according to setting, significantly more affectionate and accidental contacts took place during group time ($p < .001$), while significantly more assistance contacts took place in the outdoor self-selected time ($p < .001$). Group time had significantly more total physical contacts than the other two settings ($p < .001$).

3. Males exhibited significantly more aggressive contacts than females ($p < .001$).

4. Females exhibited significantly more affectionate contacts than did males ($p < .05$).

5. Males engaged in physical contact significantly more frequently with males than with females ($p < .001$), while females interacted significantly more frequently with females ($p < .001$).

6. Four-year-olds made significantly more physical contacts than three- and five-year-olds ($p < .001$). They were more physically aggressive ($p < .001$), and more affectionate ($p < .001$).

7. When male initiated aggressive physical contact, males responded significantly more frequently with aggressive contact than did females ($p < .05$).

8. When females initiated aggression, both males and females responded most frequently with nonphysical action.

9. The sexes showed no significant difference in their responses

to initiated affectionate behavior. The most frequent response was reciprocal affection.

Implications for Future Research

There is a need for further research into the physical contact behaviors of young children. This study was limited by the homogeneous backgrounds of the subjects and by the rather unrealistic pupil-teacher ratio (4 children to 1 adult) of the laboratory school. The generalizations made in the discussion may be valid only in similar settings with a similar group of children. Future research of the physical contact patterns in a variety of different settings with more diverse groupings of children would produce more generalizable results.

Future research will have to deal with the following problems encountered in this study:

1. The category of affectionate contact needs to be revised, as indicated in the discussion of the second hypothesis (p. 20).
2. When selecting subjects, it would be advisable to have the same number of children in each age and sex category.
3. The researchers felt that the large number of categories and the complexity of the observational system was sometimes beyond their observational powers and senses. There were too many decisions to make and too much recording for the split seconds available. Video-taping the children's behavior would improve the system immeasurably. Perhaps the categories can be recombined or simplified in some way, or the method of recording the data simplified.

Implications for Programs for Young Children

Children use physical contact as a major source of communication. Teachers need to become more aware of this form of communication, its qualities, ranging from subtle to direct, and its prominence in the child's repertoire of communication skills. If a teacher is more aware of physical contact, she/he can in turn facilitate the children's understanding of this form of communication. Also, the teacher can make the program better suit the needs of the children by providing an environment where physical communication can flourish.

Some specific ideas to encourage physical contact as an effective means of communication are:

1. Provide plenty of small, cozy spaces where children can pair or form small groups. These spaces should have easy access to books, puzzles, manipulatives, and other quiet activities. Affectionate, exploratory tactile, and assisting contacts will hopefully be the form of touching communication elicited by this setting.

2. Have available many alternatives to unacceptable aggressive contacts. Provide an area where wrestling matches can take place. The teacher should be available to serve as referee. A time period (two minutes is usually long enough) can serve as a closure. There need be no winner or loser. Encourage the girls to participate.

3. Help the children help each other. Introduce games that require mutual assistance contact such as three-legged races, pantomimes, puppet shows, playing catch, drawing or painting murals, or any other type of group project.

4. Read Talking Without Words by Marie Hall Ets (1968). Children can act out the story, think of additional examples, etc.

5. Take snapshots of children communicating physically and display them.

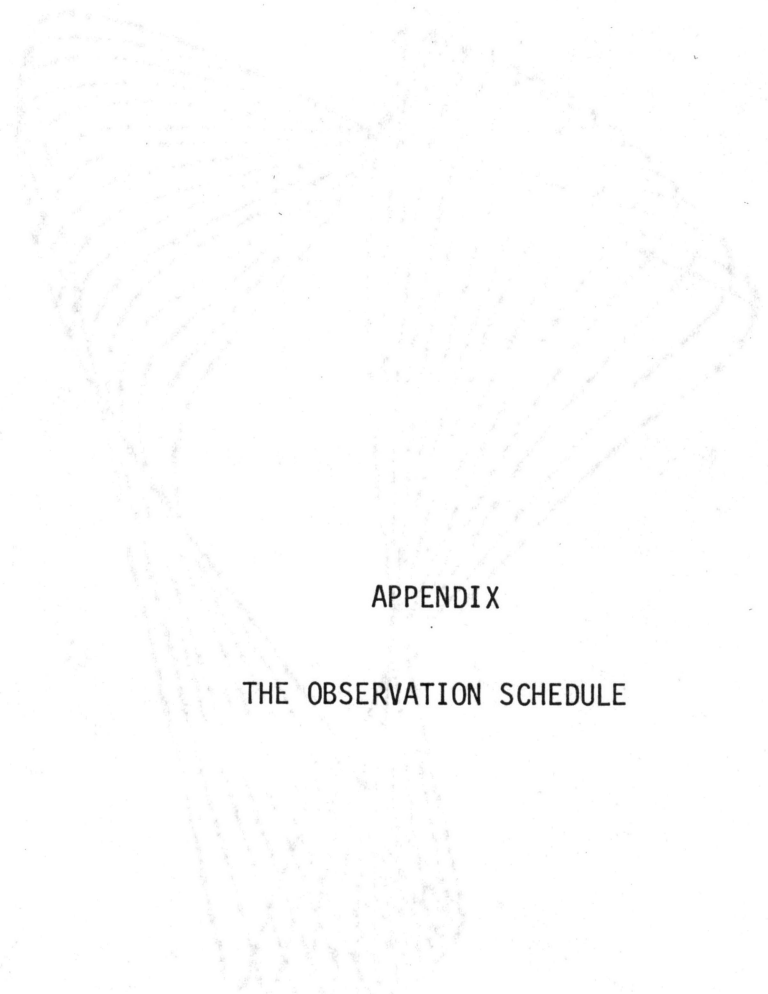
A learning environment providing for maximal opportunity for positive physical contact may enhance communication between children and their peers. The results of this study seem to indicate that there may be a relationship between kinds and frequencies of physical contacts and the school setting. Small groups seem to encourage physical interaction, while assistance contacts occurred most frequently in the outdoor setting. Certainly these relationships merit further investigation.

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APPENDIX

THE OBSERVATION SCHEDULE

OKLAHOMA STATE UNIVERSITY

1931

100% COTTON FIBRE

Date _____ 1-Subject I-Initiator M-Male child H-Head teacher
 Subject _____ 2-Interactor R-Responder F-Female Child G-Graduate assistant
 Setting _____ Q-Continuous P-Parent 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																							

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