TACTILE DEFENSIVENESS IN CHILDREN WHO DISPLAY OVERT AGGRESSIVE BEHAVIOR IN THE CLASSROOM

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF ARTS

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

SCHOOL OF

OCCUPATIONAL THERAPY

BY

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We hereby recommend that the thesis prepared under our supervision by Eve Rundell Raden

entitled Tactile Defensiveness in Children Who Display Overt Aggressive Behavior in the Classroom

be accepted as fulfilling this part of the requirements for the Degree of Master of Arts.

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CHAPTER I

INTRODUCTION

Background of the Study

Aggressive behavior has been one of the least acceptable and least understood characteristics of some children today. According to Hamblin (1971) in a recent survey in England, primary teachers were asked to name the types of student behavior they felt disrupted the classroom most. In response 74% of the teachers ranked aggressive behavior first. Oualline (1978) has stated that aggressive behavior by children often occurred on the bus going to or from school, in the lunch room, on the playground, when a group of children were clustered around a table or in the auditorium where seats shared a common armrest--in short, where some sort of haptic contact was probable. According to Ayres (1973) if primitive reflexes were present, the sense of touch was apt to be diffuse rather than well differentiated, and some children were overly ready with a fight or flight reaction in response to some unseen or unexpected tactile stimuli. However, little research had been reported in this area.

Statement of the Problem

It was the purpose of this study to investigate the incidence of tactile defensiveness or hyper-sensitivity in children rated as displaying aggressive behavior in the classroom. This study also compared the tactile behavioral responses in aggressive children with the diagnosis of developmental learning disabilities with the tactile behavioral responses in aggressive children with no known developmental learning disabilities of any kind.

Hypotheses

1. There would be no significant difference between the individual aggressive behavior rating check-list scores and the individual frequency of tactile sensitivity behavior scores of the combined group.

2. There would be no significant difference between the individual aggressive behavior rating check-list scores and the individual scores of the Southern California Kinesthesia and Tactile Perception Test battery.

3. There would be no significant difference in the frequency of tactile sensitivity behavior scores between the group diagnosed as having developmental learning disabilities and the group having no known developmental learning disabilities of any kind.

Importance of the Study

In evaluating and understanding a child's behavior, the educator or therapist could better plan a remedial program and behavioral management of a child if the relationship between tactile sensitivity and overt aggressive behavior were clarified.

Definition of Terms

Affective Response--having to do with emotions, an emotional response (Head 1920).

Afferent System--nerves that bring impulses to the brain (Head 1920).

Haptic--having to do with the sense of touch (Bauer 1977).

Hyperactive Syndrome--a controversial term that denoted different meaning for those within the medical field and for parents and lay persons. Wender (1973) listed the following behaviors: excessive activity, easy distractibility, impulsiveness, poor judgement, low frustration tolerance, swift mood changes, irritability, unpredictability, and explosivity. Most hyperactive children have learning disabilities (Wender 1973).

Sensory Integration--the process by which the brain organizes past and present experiences and sensory

information for the purpose of determining an appropriate response for a present situation (Farber 1974).

Southern California Kinesthesia and Tactile Perception Tests--six tests constructed by Ayres (1973).

1. Kinesthesia--the test required the subject, with vision occluded, to place his finger on a point at which his finger had previously been placed by examiner.
2. Manual Form Perception--the test was based on classical methods of testing stereognosis (tactile discrimination). The test involved identifying the visual counterpart of a plastic geometric form held in the hand. Vision was occluded while the form was held in the hand.
3. Finger Identification--the test required the subject to point to the finger previously touched by the examiner. Vision was occluded during application of stimulus but not during response.
4. Graphesthesia--the test required the subject to draw designs on the back of the subject's hand similar to designs drawn by the examiner. Vision was occluded during application of stimulus but not during response.

5. Localization of Tactile Stimuli--the subject was required to place a finger on a spot on the hand or arm previously touched by the examiner. Vision of the subject was occluded.

6. Double Tactile Stimuli--the subject was required to point to place or places previously touched by the examiner, who applied two tactile stimuli simultaneously to either or both the hand and cheek.

Tactile--pertaining to touch. Sometimes differentiated as:

Touch--referring to a gross sense.

Tactile--referring to a fine, discriminatory sense (Bauer 1977).

Limitations of the Study

The study was limited to a total group sampling of twenty-four students who met the following qualifications:

1. Twelve children had a diagnosis of developmental learning disabilities and all came from the Preston Hollow Presbyterian Church Week Day School for Learning Disabilities.

2. Twelve children with no known learning disabilities of any kind came from the regular classrooms in the Mesquite Independent School District.

3. All children were between the ages of six and nine years of age.

4. All children were selected by their teachers as displaying aggressive behavior in the classroom and were rated by their own classroom teachers and two others on an aggressive behavior checklist.

5. All children had WISC-R scores within normal intelligence range.

6. All children had scores below ten on subtest coding, arithmetic, and digit span on the WISC-R denoting distractibility.

CHAPTER II

RELATED LITERATURE

Various theories have been proposed as to the cause of aggressive behavior. Jones (1946) stated that in the frustration theory of aggression, Freud thought of aggression as a basic drive similar to other physiological drives, such as those of eating, drinking, and sleeping. In this theory there is an energy build-up of the aggressive drive to the point of bursting the defenses erected by the ego and superego.

Ardery (1966) suggested aggressive behavior is the instinct or reflex aggression theory. The author thought aggression was instinctive, that it was an automatic response to specific stimuli. He further suggested that animals fight instinctively, reflexively when another of their species invades their territory.

A third biological theory, this time of aggression in children, held that hyperaggression in children was simply part of a more general hyperactive syndrome. The hyperactive syndrome was first described by Still (1902). Searching for the cause of hyperactivity, Ebaugh (1923)

reported the syndrome in a group of children who had contracted sleeping sickness and, as a result, suffered brain damage. This led to the conclusion that the hyperactive syndrome was simply the result of brain damage. However, Chess (1960) found through subsequent research that while some kinds of brain damage did result in hyperactivity, only about 10% of all children who were diagnosed as being hyperactive were, in fact, brain damaged.

A number of researchers then turned to testing the hypothesis that a specific chemical imbalance in the brain produced the hyperactive syndrome. Signor (1967) described how these researchers tried various barbituates, i.e. sedatives, to tranquilize hyperactive children, but early in the 1930s, child psychiatrists realized that these drugs tended to aggravate the children instead of helping them. Next, Charles Bradley, a director of a home for disturbed children in East Providence, Rhode Island, tried amphetamines, i.e. stimulants, on hyperactive children and oddly enough these drugs had a calming effect. Amphetamines have been successfully used since Bradley's first report in 1937 (Signor 1967). In recent years methylphenidate has replaced amphetamines as the preferred stimulant drug used with hyperactive children according to Solomons (1971).

As Stewart, Pitts, Craig, and Dieruf (1966) observed, "We do know that there is not another condition in psychiatry that responds so dramatically to drugs. It happens in about half of the children but it is an obvious change. The children simply turn into different beings" (p. 249).

Stewart, Pitts, Craig, and Dieruf (1966) compared a group of hyperactive children (their patients) with a control group using the major characteristics of the hyperactive syndrome. Hyperactive children tended to be overactive, fidgety, unable to complete projects, unable to sustain games, unable to sit still, and they talked too much. About 50-60% of the patients showed the symptoms of hyperaggression--destructiveness, fighting, teasing, having temper tantrums, being irritable, unresponsive to discipline, and being defiant. These symptoms, with the exception of teasing, almost never occurred in the control sample. According to Stewart et al., the 50% or so of hyperactive children who respond so favorably to the stimulant family of drugs are not the hyperaggressive hyperactives. The hyperaggressives tended to be robust, well developed in stature. The ones who respond best to stimulants tended to be puny, underdeveloped physically. Thus, there appeared to be two hyperactive syndromes. The

first syndrome, the one that involved underdeveloped children, which according to the evidence, appeared to be righted to a large extent by drugs. The second syndrome however, the one that involved hyperaggressive children, seemed to be unresponsive, to date, to any specific biochemical therapy although anti-depressant medication (imipramine or amitriptyline) and lithium are being used with some success on these children according to Weinberg, Rutman, Sullivan, Penick, and Dietz (1973).

A third theory concerning the cause of hyperactivity, according to Signor (1967), was that the syndrome occurred because of a delay in the development or maturation of the brain. In other words, the brain was not functioning at the level which might be expected by the hyperactive child's chronological age.

Based on the theories of immature development of the brain and the theory of the reflex action as causes for aggression, a new theory emerged by Ayres (1964). She described a condition called tactile defensiveness in which many children with sensory-integration disorders showed adverse responses to certain types of stimuli. The concept of tactile defensiveness started in the early work of Henry Head. Head (1920) observed that there were dual

functional afferent systems. A primitive or protopathic system was designed to protect, warn, and defend the organism against harm. The epicritic system was newer and concerned with higher discriminatory function. The protopathic system was capable of eliciting affective responses either painful or pleasurable, and thus resulted in actions of repulsion or attraction. The epicritic system was believed to exert a checking and controlling effect over the protopathic. If there was some deficit in the inhibiting effect of the epicritic system, the nervous system would interpret stimuli in terms of danger, attend these stimuli, and prepare for fight or flight. Ayres (1964) described this phenomenon as feelings of discomfort and a desire to escape the situation. Unseen stimuli were especially threatening. Ayres (1965) in a factor analytic study found the factor of tactile defensiveness was characterized by deficits in tactile perception, defensive responses to certain types of tactile stimuli, and hyperactive behavior.

Ayres constructed a group of tests called the Southern California Kinesthesia and Tactile Perception Tests. Six separate tests comprised this battery of tests. According to Ayres (1973), these tests were used

to evaluate dysfunction in somatosensory perception in children. While these tests were being given, the examiner watched for two factors, tactile defensiveness and hyperactivity. Each of the factors was rated on a three point scale. Recently Bauer (1977) devised a Tactile Sensitivity Behavioral Responses Checklist to be used to rate behavior responses that demonstrated tactile defensiveness by children being administered the Southern California Kinesthesia and Tactile Perception Test battery. In a subsequent research paper, Bauer (1977) described the response "aggression" on the Tactile Sensitivity Behavioral Checklist as "physical responses showing aggressive impulses toward the tester, test object or self." The category was expected to show an extreme degree of tactile defensiveness. Using forty children as a population sample, this behavior was only observed in six children. Bauer recommended that because of the strong reaction demonstrated, this response should be further investigated.

CHAPTER III

PROCEDURE

Method of Gathering Data

All children were rated by three teachers on an Aggressive Behavior Checklist. The mean of the scores was taken as the individual score.

Each child was given the Southern California Kinesthesia and Tactile Perception Test battery while being video-taped. The same examiner tested all children using the standardized instructions as described in the test manual (Ayres 1973). A mean was taken of the six standardized scores for the Southern California Kinesthesia and Tactile Perception Tests and used as an individual score.

Three raters, consisting of a psychologist and two teachers, viewed the video-tapes. Each time they observed a tactile sensitive response they placed a mark on the Frequency of Tactile Sensitivity Behavior Chart using the Bauer instruction sheet as a reference. A mean was taken of the raters' scores and used as an individual score.

The names of the children were unknown to the raters, and each child was identified by a code letter only. The children from Mesquite Independent School District were lettered A through L. The children from Preston Hollow Presbyterian Church Week Day School were lettered M-L through X-L.

Method of Treating Data

Fisher's t test was used to test the significance of difference between the means obtained for the group diagnosed as having developmental learning disabilities and the group having no known developmental learning disabilities of any kind.

Pearson Product-Moment correlation coefficient was used to compare Individual Aggressive Behavior Rating Checklist scores and individual scores of the Southern California Kinesthesia and Tactile Perception Test battery. Pearson Product-Moment was also used to compare the Individual Aggressive Behavior Rating Checklist scores and the Individual Frequency of Tactile Sensitivity Behavior scores. The hypotheses were tested at the 5% level of significance.

CHAPTER IV

PRESENTATION OF DATA

Research Setting and Program

During the remainder of this study the group diagnosed as having developmental learning disabilities will be referred to as the L group, and the group having no known developmental learning disabilities of any kind will be referred to as the N group.

The children were selected by their teachers as displaying aggressive behavior in the classroom. Their WISC-R scores and their birthdates were validated to meet stated limitations of the study. The parents of the children were contacted by telephone and the author of this study explained the research program to them. Thirty-two permission slips were sent home with the children (appendix A). However, only twenty-four permission slips were returned.

Three teachers including the child's own teacher, familiar with the same individual child, scored each child on an Aggressive Behavior Checklist (appendix B). Each teacher placed a check in one of five spaces, never (one

point), seldom (two points), sometimes (three points), usually (four points), and always (five points). The score was derived by adding the total value of the checks. A mean was taken of the teachers' ratings and used as an individual score.

All the children were given the Southern California Kinesthesia and Tactile Perception Tests (appendix B) in a testing room with only the child and the examiner present. The testing of each child was video-taped and the camera was in the room.

Three raters, consisting of a psychologist and two teachers, viewed the video-tapes. Each time they observed a tactile sensitive response, they placed a check on the Frequency of Tactile Sensitivity Behavior Chart using the Bauer instruction sheet as a reference. The responses were: negative reaction, stimulus reduction, withdrawal, aggression, complaints, anxiety, increased movement, and test incompletion (appendix B).

The overall behavior of both groups was similar: cooperative and pleasant. All children were allowed to watch themselves on video-tape for a few minutes after testing. One incident of note occurred while testing the L group. One child O-L was very serious during the testing period. He was the only child who did not want to see

himself on video-tape. Immediately upon his return to the classroom, he began to hit other children and threw books and other learning materials. When this was reported to the examiner the next morning, the video-tapes were reviewed and it was noted that he had given evidence of anxiety and controlled behavior during testing. Because the affect of the tests were cumulative it might be presumed that the child's threshold for sensitivity had been reached and that he could no longer control himself.

Of additional note of interest was the age distribution of the groups. Although no age group other than "between the ages of six and nine years of age" was specified, there were no children younger than seven years in the combined group. In the N group the ages varied from seven years to eight years eleven months, while in the L group all twelve children were between the ages of eight years and eight years eleven months, although they were taken from six different classes.

It was also interesting that the N group was evenly divided into six males and six females, while the L group contained eleven males and one female (table 1) although Preston Hollow Presbyterian Church Week Day School had an approximate male-female ratio of 2:1.

TABLE 1

DISTRIBUTION OF THE TWO GROUPS
IN TERMS OF AGE AND SEX

Ages	N Group n=12		L Group n=12	
	Male	Female	Male	Female
6	0	0	0	0
6.5	0	0	0	0
7	3	1	0	0
7.5	0	0	0	0
8	0	1	5	0
8.5	3	4	6	1
Total	6	6	11	1

Findings of the Study

The Pearson Product-Moment correlation indicated there was a significant difference between the Individual Aggressive Behavior Rating Checklist scores and the Individual Frequency of Tactile Sensitivity Behavior scores of the combined group (table 2) at less than 1% (.001).

The Pearson Product-Moment correlation indicated that there was no significant difference between the

Individual scores of the Southern California Kinesthesia and Tactile Perception Test battery. However, there was a significant difference between the Individual Frequency of Tactile Sensitivity Behavior scores and the Individual scores of the Southern California Kinesthesia and Tactile Perception Test battery (table 2) at the .03 level (.034).

TABLE 2

COEFFICIENTS OF CORRELATION FOR THREE SCORES
(N=24)

	TTB	Behavior	Aggression
Aggression[1]			
Behavior[2]			.7549**
TTB[3]		-.3797*	-9.2439

* 0.5 level ** .001 level

[1]Aggression=Aggressive Behavior Rating Checklist scores

[2]Behavior=Frequency of Tactile Sensitivity Behavior scores

[3]TTB=Southern California Kinesthesia and Tactile Perception Test battery scores

Fisher's t test showed that there was no significant difference between the N group and the L group in the scores of the Aggressive Behavior Rating Checklist (table 3).

TABLE 3

t TEST OF AGGRESSIVE BEHAVIOR CHECKLIST

Group	Number of Cases	Mean	Standard Deviation	t Value
Group N	12	29.4167	4.833	-0.49*
Group L	12	30.4167	5.160	

*Greater than 5% level of significance

Fisher's t test showed that there was no significant difference between the N group and the L group in the scores of Behavior Responses of Tactile Defensiveness (table 4).

TABLE 4

t TEST OF BEHAVIOR RESPONSES OF TACTILE DEFENSIVENESS

Group	Number of Cases	Mean	Standard Deviation	t Value
Group N	12	4.812	1.389	0.09*
Group L	12	5.348	1.544	

*Greater than 5% level of significance

Fisher's t test showed that there was no significant difference between the N group and the L group in the scores of the Southern California Kinesthesia and Tactile Perception Test battery (table 5).

TABLE 5

t TEST OF THE SOUTHERN CALIFORNIA KINESTHESIA AND TACTILE PERCEPTION TEST SCORES

Group	Number of Cases	Mean	Standard Deviation	t Value
Group N	12	-0.5736	0.550	-1.20*
Group L	12	-0.3306	0.436	

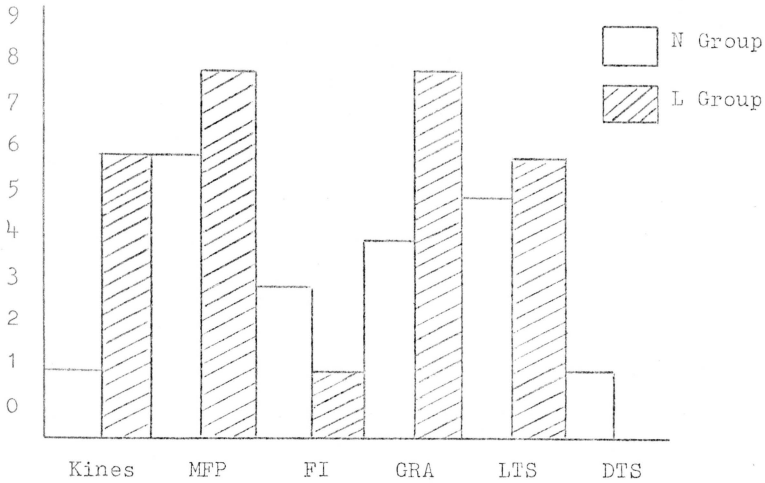
*Greater than 5% level of significance

It must be kept in mind when reviewing the test scores of the Southern California Kinesthesia and Tactile Perception Test battery that Ayres (1973) stated that the test battery was specifically designed to detect the precision of interpretation of the spatial and temporal qualities of tactile perception. Low scores on some (particularly Localization of Tactile Stimuli and Double Tactile Stimuli Perception) but not all tests could be expected. Table 6 shows the number of children who scored below one standard deviation on the Southern California Kinesthesia and Tactile Perception Test battery.

The results of the L group were not as low as might be expected by other studies. One of the reasons for this might have been the older age distribution of the children. Ayres had stated that a limitation of the Double Tactile Stimuli test was that few errors were made by children past their sixth birthdate. Also the sample of learning disabled children came from a school where a multi-sensory approach to learning is used. The children were accustomed to being tested, and all had experience with Frostig techniques and stereognosis training. Such factors might have affected their scores on the Southern California Kinesthesia and Tactile Perception Test battery.

TABLE 6

NUMBER OF SCORES BELOW ONE STANDARD DEVIATION ON TACTILE TEST BATTERY



On examining the Aggressive Behavior Checklist scores, the total scores of each characteristic (table 7) showed the characteristic "temper tantrum" present in the classroom for the L group more prevalent than for the N group. Conversely, the characteristic "bully" was the only characteristic more prevalent in the N group than the L group.

TABLE 7

TOTAL SCORES FOR EACH CHARACTERISTIC ON AGGRESSIVE BEHAVIOR CHECKLIST

Characteristic	N Group	L Group
1. Temper Tantrums	110	149
2. Irritable	123	137
3. Fights	130	140
4. Destructive	110	110
5. Unresponsive to Discipline	123	124
6. Defiant	125	143
7. Bully	130	118
8. Rebellious	137	140
9. Pushes	137	143
Total	1125	1204

Table 8 represents the Behavior Responses of Tactile Defensiveness Frequency scores, as noted there were no responses to the items "Aggression" and "Test Incompletion." The lack of responses to "Test Incompletion" may have been due to the older age group of the children. The lack of responses to "Aggression" followed Bauer's previous study on constructing the Behavior

Responses of Tactile Defensiveness Checklist. At that time, out of forty subjects, there were only six responses to this item. All of the subjects in the present study were chosen because they did exhibit overt aggression in the classroom, and since there was not one aggressive response to being tested, it might be assumed that tactile responses to the Ayres battery is not a valid test of aggression (table 8).

In table 8, it was of further interest that of the remaining seven responses (two elicited no response), the N group had more responses than the L group in four categories. The N group responses to "Stimulus Reduction" were 82% greater than the L group. To the response "Withdrawal" the N group's were 15% more than the L group. The N group's responses to the category "Complaints" were 54% more than the L group, while "Anxiety" produced 17% more responses in the N group than the L group. One of the reasons for the lower number of responses by the L group was that they were accustomed to being tested, and all had experience with Frostig techniques and stereognosis training. Such experiences may have affected their responses to tactile stimuli.

TABLE 8

TOTAL SCORES FOR EACH RESPONSE ON BEHAVIOR RESPONSES OF TACTILE DEFENSIVENESS

Response	N Group	L Group	Percentage of Difference of L Group Over N Group
1. Negative Reaction	9	63	600%
2. Stimulus Reduction	180	99	-82%
3. Withdrawal	45	39	-15%
4. Aggression	0	0	0
5. Distractions	18	61	239%
6. Complaints	60	39	-54%
7. Anxiety	168	144	-17%
8. Increased Movement	45	62	38%
9. Test Incompletion	0	0	0
Total	525	507	-4%

In reviewing table 8, it was apparent that although sensory stimulation had improved some behavior, certain other behavioral responses of the L group were still very much present. The "Negative Reaction" of the L group was 600% greater than the N group, and the "Distraction" response of the L group was 239% greater than the N group.

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary and Conclusion

This study suggested that children who exhibit aggressive behavior in the classroom may be tactually defensive or exhibit tactile sensitivity. There was a significant difference between the individual Aggressive Behavior Rating Checklist scores and the individual Frequency of Tactile Sensitivity Behavior scores of the combined group at less than 1%. Their behavior may have a neurological basis instead of, or in addition to, a psychological basis as previously thought.

To enhance learning in a less distracting environment, educators might reevaluate the seating arrangement of these children. The use of the study carrel as a means of eliminating extra tactile stimulation might be appropriate. These children should be referred to an occupational therapist, preferably within the school district, where this condition might be remediated by a specific therapy program.

Recommendations

Because of the small sample population used in this study, a similar larger study would be useful in further investigations in this area. Special care should be taken in selecting the schools which would provide a representative sample of learning disabled children, and where sensory integration techniques had not previously been used as it would affect the outcome of all test scores. Since age was an important factor in this study, it would be better to have all age sub-groups within six and nine years of age represented. An effort should also be made to maintain a ratio of boys to girls in the learning disabled group that is similar to the national ratio of boys to girls in children who have learning disabilities.

Because of the question raised about sensory stimulation affecting the Behavior Responses of Tactile Defensiveness scores, the following recommendations might be of interest. Future research might study a group of children with learning disabilities who have had additional sensory stimulation and a group of children with learning disabilities who have not had additional sensory stimulation using the Behavior Responses of Tactile Defensiveness

Checklist to see if sensory stimulation does lessen some of the symptoms. Another study of interest might be to test a group of learning disabled children who have had additional sensory stimulation using the Behavior Responses of Tactile Defensiveness Checklist and then retest them after a sensory-integration treatment program to see if the sensory-integration program affected their behavioral responses.

APPENDIX A

PERMISSION FORMS

Consent Form
TEXAS WOMAN'S UNIVERSITY
HUMAN RESEARCH REVIEW COMMITTEE

(Form A -- Written presentation to subject)

Consent to Act as a Subject for Research and Investigation:

(The following information is to be read to or read by the subject):

1. I hereby authorize Eve Raden, OTR
(Name of person(s) who will perform procedure(s) or investigation(s)

to perform the following procedure(s) or investigation(s): (Describe in detail)

To test my child for Tactile Defensiveness using the six tests that comprise the Southern California Kinesthesia and Tactile Perception Test battery. The testing will be video-taped. Three raters will rate the reaction of the child to tactile stimuli. The names of the children will be unknown to the raters and each child will be identified by a code number only.

2. The procedure or investigation listed in Paragraph 1 has been explained to me by Eve Raden, OTR.
(Name)

3. (a) I understand that the procedures or investigations described in Paragraph 1 involve the following possible risks or discomforts: (Describe in detail)

Child will be touched on hand, arm or cheek on each of the six tests. If child is tactile defensive, this stimuli may be unpleasant.

(Form A - Continuation)

3. (b) I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others:

In evaluating and understanding a child's behavior, the educator or therapist could better plan a remedial program if the relationship between tactile sensitivity and classroom behavior were clarified.

4. An offer to answer all of my questions regarding the study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in the study at any time.

_____ _____

Subject's Signature Date

(If the subject is a minor, or otherwise unable to sign, complete the following):

Subject is a minor (age ____), or is unable to sign because:

No medical service or compensation is provided to subjects by the university as a result of injury from participation in research.

Signatures (one required)

_____ _____

Father Date

_____ _____

Mother Date

_____ _____

Guardian Date

May 8, 1979

TO WHOM IT MAY CONCERN:

The Mesquite Independent School District gives permission to our consultant Occupational Therapist, Eve Raden, to conduct part of a research project, concerned with classroom behavior, using children enrolled in the Mesquite Independent School District. This permission is given on the provision that the parents of the children also give their consent and that no names will be used. It is understood that this research is done in conjunction with Mrs. Raden's graduate work at Texas Woman's University.

Ralph H. Poteet, Ph.D.
Superintendent
Mesquite Independent School District

March 3, 1979

To Whom It May Concern:

Preston Hollow Presbyterian Church Week Day School has given permission to Eve Raden, registered Occupational Therapist, to conduct part of a research project, concerned with classroom behavior, using children enrolled at the Preston Hollow Presbyterian Church Week Day School. This permission is given on the provision that the parents of the children also give their consent. It is understood that this research is done in conjunction with Mrs. Raden's graduate work at Texas Woman's University.

_____

Martha Neal, Director

Preston Hollow Presbyterian
Church Week Day School

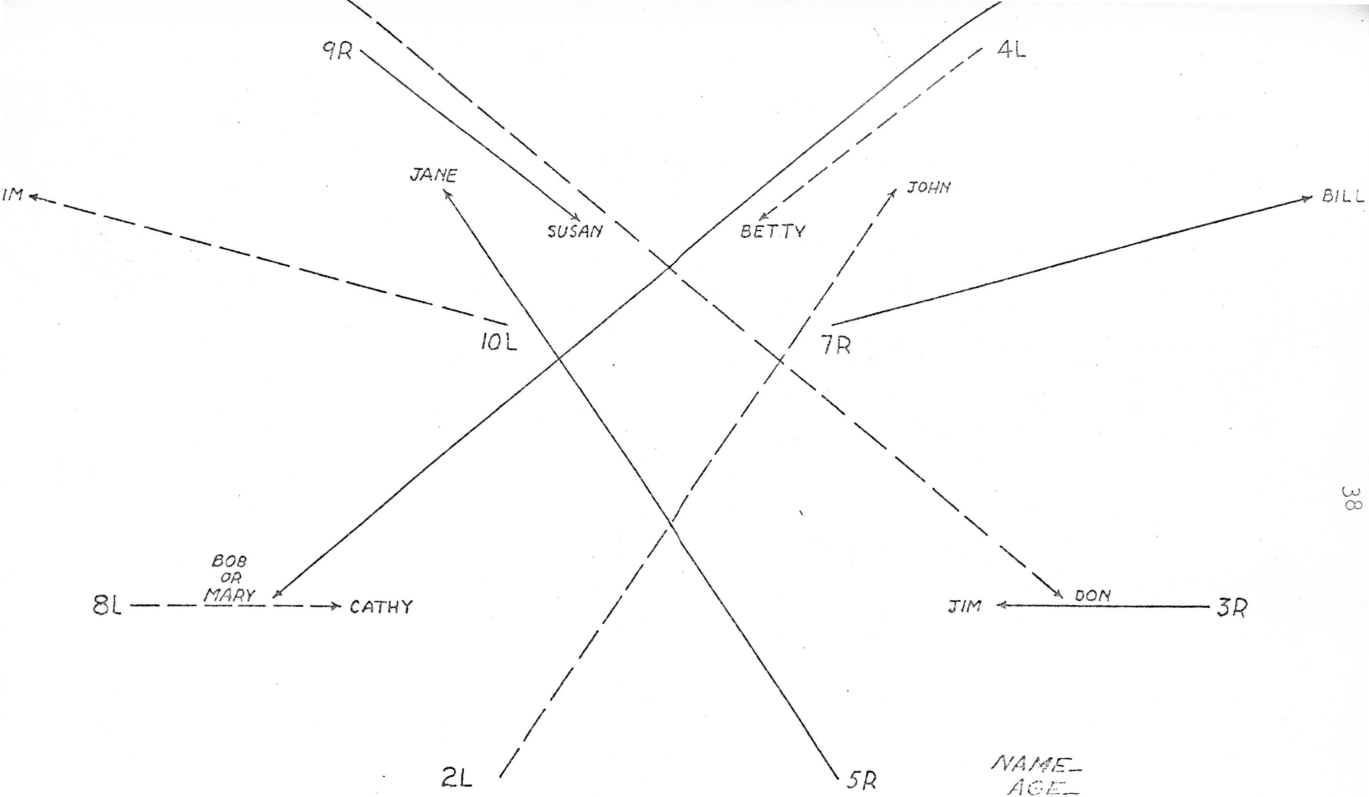
APPENDIX B

TESTING MATERIALS

FIGURE OF ALL TEST SCORES

Child	Age	Sex	K	MFP	FI	Gra	LTS	DTS	Aggres	Behavior	Arith	Code	Digit
A	8.5	M	-0.1	-1.7	-0.7	+1.3	-1.2	+0.4	24	5	7	7	5
B	8.5	F	+1.0	-2.5	+0.2	+0.2	-0.3	-0.4	27	5	8	6	5
C	8	F	-0.5	+0.1	-0.2	+1.0	+0.3	-0.6	28	6	9	7	4
D	7	M	+1.2	+0.1	-0.9	-0.8	+1.0	+0.4	29	8	7	5	4
E	8.5	M	+0.6	-1.9	+0.5	+0.7	-0.5	+0.4	29	10	9	4	6
F	7	F	-4.9	-0.8	-1.1	+1.0	-0.2	+0.5	30	14	6	7	4
G	8.5	F	-0.7	+0.5	-0.2	-1.5	+0.9	-0.4	32	14	6	5	6
H	7	M	-0.8	-2.0	+0.7	+0.1	-2.1	-0.4	31	15	6	5	4
I	8.5	F	-0.2	-1.1	-2.8	-1.7	0.0	+0.4	33	18	7	9	5
J	8.5	M	-0.5	+0.5	-0.7	-2.5	+1.4	+0.4	43	18	5	7	3
K	8.5	F	+0.2	-2.8	-0.6	-2.2	+0.4	-1.0	35	20	6	6	5
L	7	M	+0.4	-0.2	-0.2	+0.7	+1.0	-0.2	24	14	9	7	7

Child	Age	Sex	K	MFP	FI	Gra	LTS	DTS	Aggres	Behavior	Arith	Code	Digit
M-L	8.5	M	-2.2	-0.1	+0.7	-0.5	+0.2	+0.4	24	8	4	6	8
N-L	8.5	M	+0.5	-0.5	+1.1	-1.0	-1.4	-0.4	22	4	9	5	6
O-L	8	M	-0.2	-1.1	+1.1	-0.3	+0.3	+0.4	27	15	4	4	6
P-L	8.5	M	-2.0	-0.7	+1.5	-2.5	-1.3	-0.4	29	10	8	6	5
Q-L	8.5	M	+0.4	-0.1	+1.1	-2.5	+0.7	+0.4	25	7	9	4	9
R-L	8	M	-0.6	-2.3	+0.7	-2.0	-0.7	+0.4	25	10	5	4	7
S-L	8	M	-1.1	-1.1	+0.7	-2.0	0.0	+0.4	31	17	8	6	5
T-L	8.5	M	-4.2	-3.1	-0.2	-1.5	0.0	+0.4	33	20	5	5	4
U-L	8.5	F	-0.5	-1.9	-2.0	-3.8	-2.2	+0.4	30	12	3	3	6
V-L	8.5	M	+1.0	-1.5	-0.2	-2.1	-2.2	+0.4	31	12	7	5	4
W-L	8	M	-4.6	+1.2	+1.5	+1.3	-1.2	+0.4	34	15	8	6	5
X-L	8	M	-1.0	-1.3	+1.5	+1.2	-1.5	+0.4	39	18	8	4	3



NAME_
AGE_
SEX_
RACE_
BIRTHDAY_

KINESTHESIA CHART

SUBJECT'S MIDLINE → PLACE EDGE OF CHART ONE INCH FROM TABLE EDGE

GRAPHESTHESIA

(Use pencil with eraser, shield)

Trial R _____

Score 2, 1, or 0

1. L _____
2. R _____
3. L _____
4. R _____
5. L _____
6. R _____
7. L _____
8. R _____
9. L _____
10. R _____
11. L _____
12. R _____

Total Score = L + R = _____

Standard Score L _____ R _____

GRA Standard Score _____

GRA SCORING GUIDE

SCORE →

	2	1	0
I			
O			
X			
<			
~			
]			

LOCALIZATION OF TACTILE STIMULI

(Use ballpoint pen, centimeter ruler, shield)

Trial: Dorsum L Hand

PRONATED

4 _____ 1 _____

6 _____ 3 _____

2 _____ 5 _____

SUPINATED

10 _____ 7 _____

12 _____ 9 _____

8 _____ 11 _____

LEFT HAND		RIGHT HAND	
	50		50
Subtract Total L	– _____	Subtract Total R	– _____
Raw Score L	= _____	Raw Score R	= _____
Standard Score L	= _____	Standard Score R	= _____

100

Subtract Total L + Total R – _____

LTS Raw Score = _____

LTS Standard Score = _____

DOUBLE TACTILE STIMULI PERCEPTION

(Use two pencils with erasers)

Trials:

A. R face
B. L hand
C. L face. R hand

Circle Extinguished Stimulus

Score 2, 1, or 0

1. L and R hand _____
2. L face _____
3. L hand, R face _____
4. L and R face _____
5. L hand, L face _____
6. L hand _____
7. R hand, L face _____
8. R hand, R face _____
9. L and R hands _____
10. R hand _____
11. L hand, R face _____
12. L hand, L face _____
13. R face _____
14. R hand, L face _____
15. L and R face _____
16. R hand, R face

DTS Total Score _____

DTS Standard Score _____

KINESTHESIA

(Use kinesthesia chart, centimeter ruler, shield)

L. Hand	R. Hand
	1. R _____
2. L _____	
	3. R _____
4. L _____	
	5. R _____
6. L _____	
	7. R _____
8. L _____	
	9. R _____
10. L _____	

LEFT HAND	RIGHT HAND
Subtract Total L — _____ / 50	Subtract Total R — _____ / 50
Raw Score L = _____	Raw Score R = _____
Standard Score L = _____	Standard Score R = _____

Subtract Total L + Total R — _____ / 100

Total KIN Raw Score = _____

KIN Standard Score = _____

MANUAL FORM PERCEPTION

(Use ten wooden forms, printed cardboard of forms, shield, stopwatch)

Discontinue after 5th Error
Maximum time per item is 30 seconds.

	Time	Acc.	Time	Acc.
1. R circle				
2. L star				
3. R oval				
4. L triangle				
5. R star				
6. L circle				
7. R square				
8. L octagon				
9. R hexagon				
10. L trapezoid				
11. R diamond				
12. L cross				

	Time	Acc.	Time	Acc.
Total	L		R	
Standard Score	L		R	

Total Accuracy Score _____

Total Time (L + R) _____

Adjusted Total Score
= Total Accuracy Score minus one point for each 25 seconds of MFP Total Time _____

MFP Standard Score _____

FINGER IDENTIFICATION

(Use pencil with eraser, shield)

Trials: With Vision

A. L middle
B. R ring
C. R middle and R index
D. 2 stim. to L index

Occlude Vision	Score 1	or 0
1. L ring		
2. R middle		
3. L little & L index		
4. 2 stim. to R little		
5. R ring		
6. L ring		
7. L ring & L middle		
8. 2 stim. to R middle		
9. L ring		
10. R ring		
11. R index & R ring		
12. 2 stim. to L middle		
13. Radial side L ring		
14. Radial side R middle		
15. Ulnar side L middle		
16. Ulnar side R ring		

Total L _____ R _____

Standard Score L _____ R _____

FI Total Score (L + R) _____

FI Standard Score _____

OBSERVATIONS:

Hyperactivity and distractibility.

3. Normal activity.
2. Slightly more active or distractible than normal.
1. Definitely hyperactive and/or distractible.

Tactile defensiveness.

3. No apparent defensive responses.
2. One or 2 possibly defensive responses.
1. 1 or more definite or 3 or more possibly defensive responses.

AGGRESSIVE BEHAVIOR CHECKLIST

	Never 1	Seldom 2	Some-times 3	Usually 4	Always 5
1. Temper Tantrums					
2. Irritable					
3. Fights					
4. Destructive					
5. Unresponsive to Discipline					
6. Defiant					
7. Bully					
8. Rebellious					
9. Pushes					

BEHAVIOR RESPONSES OF TACTILE DEFENSIVENESS

	Frequency During Each Test					
Response	I	II	III	IV	V	VI
1. Negative Reaction						
2. Stimulus Reduction						
3. Withdrawal						
4. Aggression						
5. Distractions						
6. Complaints						
7. Anxiety						
8. Increased Movement						
9. Test Incompletion						

Birthdate

WISC-R

Arithmetic

Coding

Digit Span

Southern California Sensory Integration Tactile Test Battery

Kinesthesia

Manual Form Perception

Finger Identification

Graphesthesia

Localization of Tactile Stimili

Double Tactile Stimuli Perception

Aggressive Behavior Checklist _____

Behavior Responses of Tactile Defensiveness _____

TACTILE SENSITIVITY BEHAVIORAL RESPONSES

Behavioral responses directly related to tactile stimulation:

1. Negative reaction: A verbal response occurring after tactile stimulation and before the next stimulus or a verbal response referring specifically to being touched which implies a negative reaction.

   examples: "Ouch" or "Owe"
   "It feels like a needle." (Mosquito bite, electric shock, etc.)
   "I don't like all these poking games."
   "I don't like being poked." (or touched)
   "I don't like that." (if statement is immediately after tactile input)
   "Leave me alone."
   "It tickles."

2. Stimulus reduction: A physical response providing additional sensory input (more movement or pressure than is necessary to respond to the task) in the area touched before the next stimulus is given. The area touched is qualified as the same general area on the arm, hand, or face. If a finger is touched and the stimulus reduction is generally over the finger area, it is counted, but if the child obviously stimulates the wrong finger, wrong hand, or wrong side of face, this is rated as an increased movement and not a stimulus reduction.

   examples: rubbing or scratching over the area touched
   pulling the fingers touched back towards the hand or into an awkward position
   squeezing the area touched
   clenching the fist shut when the palm is touched
   pointing out area touched and then purposely rubbing or scratching in same area a second time

   not rated: one quick brush over the area touched
   covering area touched with the hand, but not applying pressure or movement (this should be withdrawal)

3. Withdrawal: Resisting being touched or physically withdrawing the body or body parts away from the tester.

examples: folding arms on chest or holding arms or body in a protective manner
hiding arms or hands from tester, i.e. placing them under the table or covering the hand or area touched with the other hand
physical refusal to attempts of the tester to place hands or verbal requests to place hands if certain child is attending (counted on first request only)
an abrupt movement or jerk in avoidance of being touched or immediately after being touched
moving out of reach of tester (out of chair) when tester is trying to touch child
leaving the room or going to the door in an attempt to leave

4. Aggression: Physical responses showing aggressive impulses toward tester or test objects.

examples: trying to touch or poke back at the tester
throwing objects such as blocks when placed in hand
grabbing objects maliciously from tester (not rated when child is attempting to see block he has identified)
slamming fist or other aggressive act immediately after tactile stimulation
hitting tester
hitting self

Generalized behavioral responses occurring throughout testing that are possible responses to tactile stimulation:

5. Distractions: Verbal statements that indicate an attempt to get out of the test situation, change the subject, or show that attention has been drawn to non-test related stimuli.

   examples: "I want to see Mommy."
   "I want to go to the bathroom."
   "I want to get a drink of water."
   "I want to go home."
   "Do you know what I have in my billfold?" (change of subject)
   "What's that noise?" (or reference to T.V. microphone, etc.)

   not rated: Verbal statements regarding test objects, i.e. stopwatch, folder.

6. Complaints: Verbal complaints of somatic origin or environmental factors.

   examples: c/o stomach ache
   c/o being tired
   c/o room, i.e. lights, noises

7. Anxiety: Verbal statements indicating general anxiety regarding the test situation or anticipation of discomfort prior to being touched.

   examples: "Is this the last one?"
   "When will we be done?"
   "I don't want to do this anymore." or "I don't like these games." (These statements are differentiated from a negative reaction in that they are generalized and do not specifically refer to being touched.)
   "It gets me scared."
   "Will it hurt?"
   "no" or shaking head and saying "No" in response to directions such as "I'm going to touch you with this pencil."

not rated: shaking head with no verbal accompaniment should be increased movement.

8. Increased movement: Extraneous physical activity during testing.

examples: Fine movements that are repetitive for at least two movement cycles of the limbs, head, or trunk: i.e. swinging arms, tapping hands or at least two fingers, stomping or tapping feet, swaying or shaking head or trunk, playing or fiddling with hands that involved two movement cycles, and hand to mouth and moving hands around or in mouth.

Scratching or rubbing for two movement cycles or in two distinct places sequentially (i.e. forehead and cheek) in an area other than touched.

Gross movements in the chair which disorient the child physically from the task: i.e. slouching, sitting on knees, leaning over sideways or backwards, putting head down on table and facing away from task or tester (not rated if child's focus of attention is still on task or tester and does not interfere with progress of testing), turning head at least 90 degrees away from tester or turning so back is partially toward tester.

Standing in place (rated as withdrawal if getting out of reach).

not rated: shifting weight in chair if over-all attention is still on the task.

9. Test incompletion: Incompletion of any of the six subtests because of refusal or physical non-compliance will be rated based on information from the test administrator rather than on behavior observations.

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