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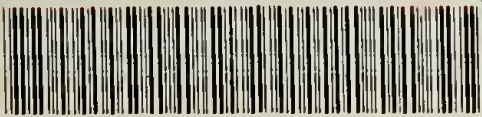
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SOCIAL SCHEMAS IN NORMAL CHILDREN

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B. A., BRANDEIS UNIVERSITY

Thesis submitted to the Graduate
Faculty in partial fulfillment
of the requirements for the
degree of Master of Science

University of Massachusetts

August 3, 1970

SOCIAL SCHEMAS IN NORMAL CHILDREN

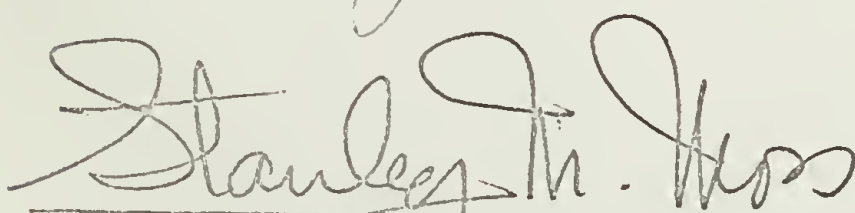
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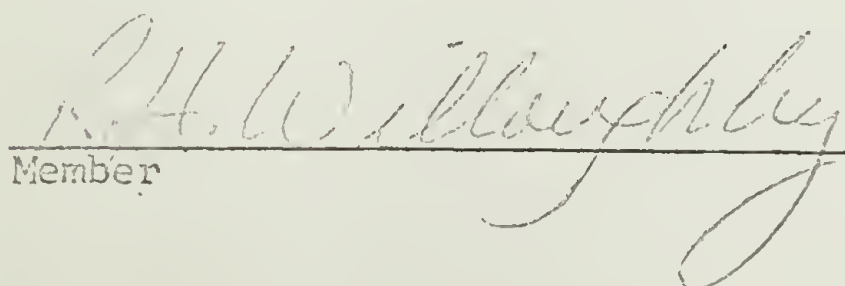
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CONTENTS

Acknowledgments.....	i
Contents.....	ii
List of Tables.....	iii
List of Figures.....	iv
I. Introduction.....	1
Statement of the Problem.....	4
II. Method.....	6
Subjects.....	6
Apparatus.....	6
Procedure.....	7
III. Results.....	10
Reliability of Figure Placements.....	10
Developmental Factors.....	15
Free-Choice Placements.....	18
IV. Discussion.....	25
V. Summary.....	32
Appendix A - Analysis of Variance Tables.....	33
References.....	36

LIST OF TABLES

I.	Reliability of Two-Figure Placements at Each Age Level.....	11
II.	Trend Analysis for the Linear Source of Variability for the Three Kinds of Figure Placements.....	14
III.	Reliability of Two-Figure Placements Averaging Over Age Levels....	14
IV.	Age X Sex X Placement Interaction for Man-Child and Woman-Child Placements.....	16
V.	How Children Place Adult Figures in Reference to Themselves Over Different Age Groups.....	17
VI.	Age X Sex X Placement Interaction for Child-Child Placements.....	19
VII.	Percentage of Categories of Figures Children Choose in Free-Choice Placements on Days 1 and 2.....	21
VIII.	Percentage of Categories of Figures Children Choose in Free-Choice Placements on Days 1 and 2 at Each Age Level.....	22
IX.	Percentage of Exact Duplicate Choices of Free-Choice Placements at Each Age Level.....	23

CHAPTER I

INTRODUCTION

The purpose of this study is to investigate the reliability of social schemas in children of different ages. There has been little work on reliability of schemas with adults (Levinger, 1967 is one exception) and none known with children.

Kuethé, in a number of investigations (1962, 1964), has studied schemas, which he describes as unit forming principles of social perception:

"When a person indicates that two objects 'belong together' he has employed some schema or plan. If these objects are people or people symbols, the schemas employed may be considered, by definition, social schemas." (Kuothe, 1962a).

He found that people used these social schemas, or response sets when they were required to structure an ambiguous situation involving human objects (felt figures). Included among the commonly held social schemas were, for example, 'man and woman belong together' and 'non-human objects tend not to be allowed to separate human figures'.

A major consideration of the present study stems from Kuethé's implication that these schemas are socially learned. He says:

"Social schemata are aroused by the need to cope with social stimuli and the content of the social stimuli determines which social schemata is elicited. Thus, judgements or predictions about a mother-child situation will be determined by the schemata the individual has formed over a lifetime of observing and participating in mother-child relationships." (1964).

Thus, if these schemas are learned and they represent the individual's internalization of conventional ways of organizing social stimuli, then the degree of stability or entrenchment of these schemas should vary as a function of age (or developmental level). There should be greater variability of social schemas in very young children since they seem to structure their experience in more spontaneous, individualistic ways than do older, more socialized adults, or even than older children.

The second purpose of this study is related to the work of Carlson and Price (1966), who also reasoned that a one-trial kind of learning was not involved here and thus social schemas should be better established and more preemptive at successive age levels. The authors then proceeded to group their subjects under three main headings: preadolescents (ages 7-11); adolescents (13-16); and adults (25-50). This very broad pooling over ages seems to be an ineffectual way of answering the kind of questions they pose: do the special characteristics of sex and different developmental levels influence the utilization of various social schemas? The second aim, then, of the present study is to investigate the problem posed by Carlson and Price, that is, the influence of age and sex variables on social schemas, using a more appropriate design.

Social schemas vary in commonality with the nature of the human figures in a set. Thus, Kuethé (1963), using the felt board figure placement technique, found that male Ss grouped man and woman figures

more often than they grouped two women figures. Yet, he found that a group of homosexual Ss grouped men with men and women with women (the first schema being the stronger). Non-homosexual Ss did not permit men and women figures to be separated by rectangles, whereas the homosexual group often failed to make man-woman pairings (1963).

The final purpose of the present study is to obtain a sample of normative data of figure placements using a population of normal children. It should be noted that the "generality" and "pervasiveness" of these social schemas has been established, for the most part, with a subject population consisting of only male undergraduates at Johns Hopkins. Before one can meaningfully talk about "normal" social schemata or departures therefrom, it is a prerequisite that one have normative data of the schemas that have high commonality in many different populations, for example, different ethnic groups, etc. The population relevant to the present study is children. Two studies (Weinstein, 1965 and Fisher, 1967) have investigated social schemas of normal children, but both studies used normal children simply as a comparison to a group of "disturbed" children, and the methodological consistency of the Weinstein study is questionable since the "disturbed" children were living in residential treatment centers and thus might well have perceived parental figures as being "more distant".

The figure placement technique was used originally by Kuethe (1962) as an operational technique for measuring social schemas and related concepts, for example, personal space. Weinstein (1965), Carlson and Price (1966) and others have subsequently used this technique. It

involves having Ss place pairs of felt figures on a large felt board and then comparing relative horizontal distances between various pairs of figures and between different groups of Ss. The present study employs Levinger's modification of the felt technique (1967) for studying social schemas. The modifications which give this technique advantages over the technique used by Kuethe and others are: 1) a transparent two-dimensional grid glued to the back of the felt board enables E to measure the S's vertical as well as horizontal placements; 2) readings can be made more precisely and without the delay found in Kuethe's (1962) technique.

Statement of the Problem

The approach of this study is, in general, exploratory. The aim is: 1) to test the reliability of felt board placements by children of different ages, using Levinger's modified felt technique. One can ask is the anticipated greater variability in placements by young children due to the fact that child A has a different schema from child B, or is it because child A makes a certain arrangement of figures on Day 1 and then a completely different arrangement on another day? Specifically, one hypothesis is that reliability should increase over both sexes as a function of age. That is, there should be less variability for older children than for younger children on re-test placements. Thus, the felt technique may prove not to be a reliable tool for use with very young children; 2) to determine how the variables of age and sex influence social schemas, similar to the aim of

Carlson and Price (1966) but using a more refined age breakdown. The placement of felt figures should change as a function of age and sex. Thus, for example, young boys may place boy-woman figures closer together than boy-man and this trend may be reversed at older ages (Placement X Age X Sex interaction).

CHAPTER II

METHOD

Subjects: A total of 60 children were divided into 5 age groups: 4, 5, 6, 7 and 8 year olds. This age range was chosen, in part, in an effort to span a number of different developmental stages. In Piagetian terms, these stages theoretically reflect major shifts of differentiation of schemas. Thus, 4 year olds may be thought to represent early pre-operational thought; 6 year olds, late pre-operational thought; and 8 year olds, concrete operational thought. Each age group of 12 Ss consisted of 6 boys and 6 girls. The average ages of the 5 age groups are as follows, in years and months:

4 year olds: 4-5
5 year olds: 5-7
6 year olds: 6-7
7 year olds: 7-7
8 year olds: 8-6

These 60 children were chosen randomly from a population of children who a) were living with their mother and father and b) were not only children. The 4 year olds were chosen from the Unitarian Preschool in Amherst while the rest of the children came from the Marks Meadow School, also in Amherst. Teachers were asked to choose children in the average IQ range (90-110). For the youngest age levels, where IQ measures were not available, teacher judgements were used. The children were all living in Amherst, a middle- upper middle class community.

Apparatus: Levinger's Interpersonal Grid (1967) employing the felt technique version was used. This consisted of a board 30" x 20" co-

vered with white felt, and dark blue felt figures ranging in height from 8" to 4": Man- 8"; Woman- $7\frac{1}{2}$ "; Child- 4"; and the rectangle controls matched the height of the human figures. A matched control consisted of a rectangle with the same height and width dimensions as a corresponding human figure. The felt figures consisted of 1 man with its matched control; 1 woman with its matched control; 2 boys with 1 matched control; and 2 girls with one matched control- 10 felt figures in all. The white felt on the board covered a see-through plastic with a superimposed grid so that S's placements could be read off as soon as they were made. The height of the board was adjustable so that each S could easily reach all parts of the board.

Procedure: All testing was done in a small room provided in each school. Each child made 12 placements on each of two days, the re-test placements occurring one week later. Of the twelve placements, 10 were structured dyads and 2 were 'free-choice' placements where the children could choose any of the 10 figures they wished to put up on the board. The 10 dyadic placements were as follows:

Control	Boy-Man	Girl-Man
"	Boy-Woman	Girl-Woman
"	Boy-Boy	Boy-Girl
		Girl-Girl

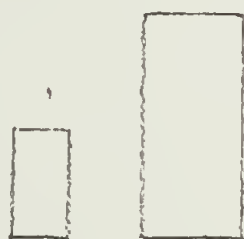
Also, 2 'free-choice' placements were made on each of two days. Thus, there were 1440 placements in all (12 placements for each of 60 children done on 2 days.) The actual distance between felt figures placed

on the board was measured for each dyadic placement.

The rectangle controls were used to determine if the human figures were being placed in a certain way because of some psychological significance attached to them or because of some physical characteristics, for example, size. The control placements were randomly interspersed with test placements instead of presenting controls first as was done in the pilot study (Berenson, 1969). This was done in an effort to insure the absence of a set on the part of the S. Each control placement consisted of rectangles only. The rectangles corresponded in size to the test placements as seen below:



Thus, a control placement corresponding to boy-man (or girl-man) would be:



In addition to making 10 dyadic placements, all the children made 2 'free-choice' placements on Day 1 then repeated this procedure on Day 2. Tabulations were made according to preferences of the different age groups for certain categories of figures: those that chose 1) only rectangles; 2) only humans; 3) some combination of humans and rectangles; 4) all the figures; 5) just child figures; and 6) just man-woman figures.

The children were run one at a time. Each child did all of the test placements and controls on one day and then one week later repeated this procedure. Directions were simply: "We're going to play a game. I have some figures cut out of cloth. I want you to put these anywhere on the board for me.... Now do these.... etc., etc."

CHAPTER III

RESULTS

Reliability of Figure Placements. Pearson Product-Moment Correlations were computed for each of the three kinds of two-figure placements (man-child, woman-child, child-child) at each of the five age levels. It was apparent from Table I that for each kind of placement there was a general trend for reliability of figure placements to increase as age increases. Tending to obfuscate this trend, however, within each kind of placement there were several instances of what might appear to be decreases in reliability moving from a younger to an older age level. For example, reliability for 5 year old placements of woman-child (w-c) figures went from .57 to .52 at age 6; 6 year old placements of man-child (m-c) figures went from a reliability of .40 to .38 at age 7; and reliability of 5 year old placements of child-child (c-c) figures went from .26 to .18 at age 6. In other words, reliability of figure placements did not increase each year as age level increased. It can be asked, then, whether this general trend of reliability of placements to increase over age levels is significant. From the pilot study and from Kuethe's implications (1964), it was found that the w-c schema was earlier entrenched, that is, more reliable than the m-c schema which in turn was earlier established than the c-c schema. The best-fitting straight line, then, for the graph of the three kinds of placements (w-c, m-c, c-c) should have a positive slope and further, the slope should be steepest for w-c, next steepest for m-c and least steep for c-c.

TABLE I

RELIABILITY OF TWO-FIGURE PLACEMENTS AT EACH AGE LEVEL

	woman-child	man-child	child-child	\bar{X}
4 years	.20	.18	.13	.17
5 years	.57**	.33	.26	.39
6 years	.52*	.40	.18	.37
7 years	.66***	.38	.28	.44
8 years	.60**	.42*	.26	.43
ave.	.510*	.342	.242	

* $p < .05$ ** $p < .025$ *** $p < .01$

In order to determine this, a trend analysis for qualitative variables (1 factor design, Myers, ch. 13) was performed. Figure 1 depicts the functions for the three kinds of figure placements. Two possible sources of significant variability among the treatment means are linearity and deviations from linearity. The deviations from linearity were not significant in any of the three kinds of placements which suggested that a straight line could best describe each function. The next question was whether linearity for any of the three functions was a significant source of variability, that is, whether the slopes for any of the three functions was significantly different from a slope of 0.

What was found from Table II was a significant trend ($p < .05$) for reliability to increase in a linear fashion with age for w-c placements. A tendency towards a significant trend ($p < .10$) was present for m-c placements and the same kind of trend (that is, a positive slope), although not significant, was found with c-c placements.

Also, at each age level, there was the same order of placements from most to least reliable. At all five age levels, the w-c placement was the most reliable, then the m-c placement and finally the c-c placement. (See Table I). The average reliability (summed over ages) for the three kinds of placements emphasized the point that the w-c placements for these 60 children were most reliable, m-c next and c-c least reliable. (Table III).

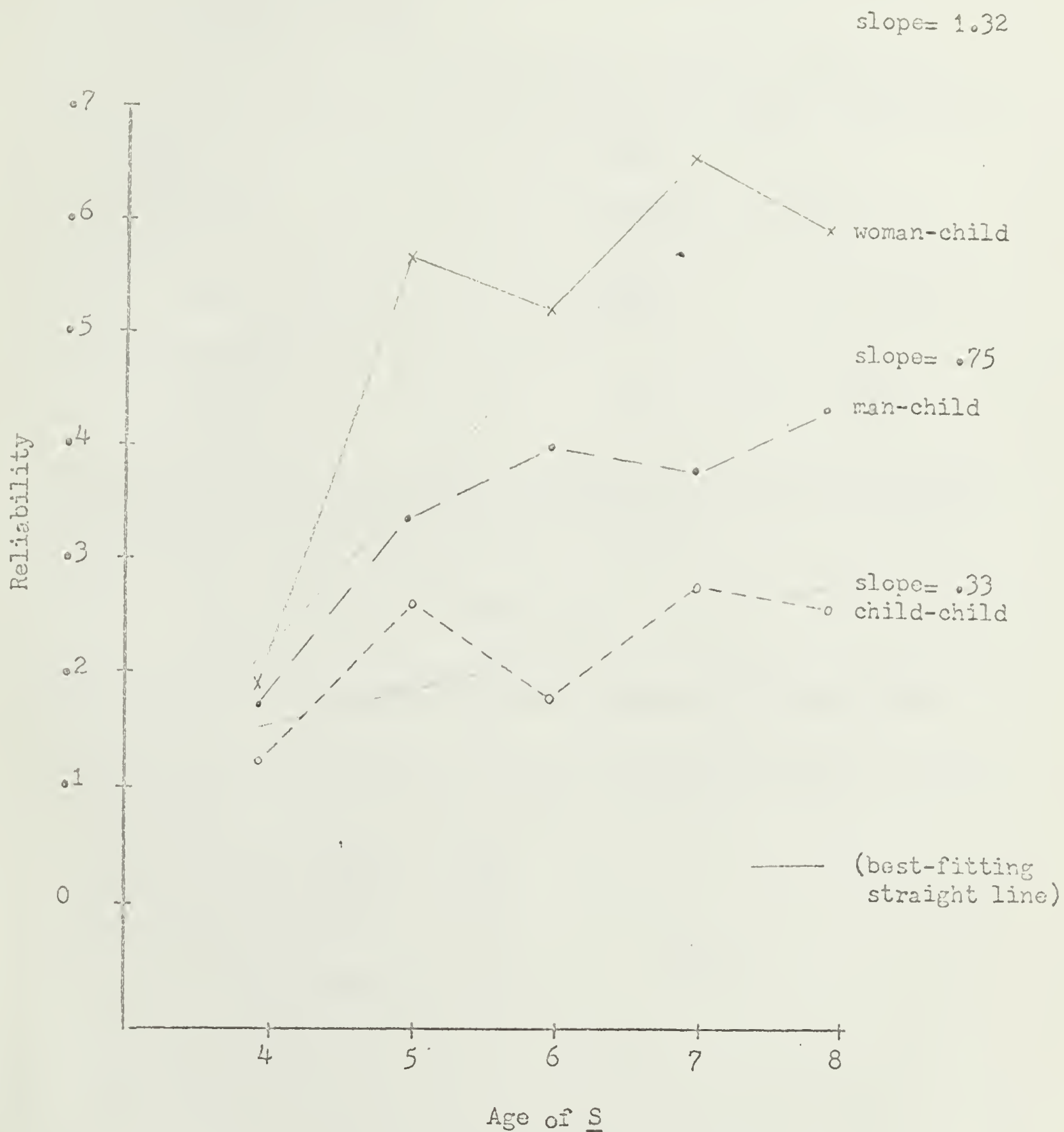


FIGURE 1. RELIABILITY OF THE THREE TWO-FIGURE PLACEMENTS OVER THE FIVE AGE LEVELS

TABLE II

TREND ANALYSIS FOR THE LINEAR SOURCE OF VARIABILITY FOR THE THREE
KINDS OF FIGURE PLACEMENTS

<u>SV</u>	<u>df</u>	<u>MS</u>	<u>F</u>
woman-child lin(A)	1	4.59	p < .05
man-child lin(A)	1	1.69	p < .10
child-child lin(A)	1	.30	NS

TABLE III

RELIABILITY OF TWO-FIGURE PLACEMENTS AVERAGING OVER AGE LEVELS

Woman-Child = .510*

Man-Child = .342

Child-Child = .242

*p < .05

Developmental Factors. A separate analysis of variance was performed for each of the three kinds of two-figure placements. (Three analyses were required because there were three noncomparable control stimuli used for each of the three placements: w-c, m-c and c-c placements). Each analysis used a mixed design with two between variables (Age and Sex) and two within variables (Days and Placements). With this many sources of variance, one would expect some of them, by chance alone, to be significant. Some of the effects which did attain significance were not of particular interest and would not have been predicted a priori. Several sources of variance of interest did not attain criterion significance but approached this level at the .10 or .20 level. Since the placements being explored are subtle and perhaps unreliable, it seemed important to investigate the effects which were predicted a priori if they showed trends in the expected direction. A source of variance which was of interest was the Age X Sex X Placement interaction for the w-c and m-c placements. Thus, for example, one would look for a difference between the way 4 year old boys placed the woman-boy figures and the way 9 year old boys placed the same figures. This interaction did approach significance ($p < .10$). Table IV illustrates this interaction for the w-c and m-c placements. When these findings were condensed, some interesting developmental trends appeared (Table V).

The Age X Sex X Placement interaction for c-c placements ($p < .20$) would seem to suggest that for both sexes there was what may be called a developmental pattern characterized by younger children placing opposite-sexed (that is, boy-girl) figures closest together; then there was

TABLE IV

AGE X SEX X PLACEMENT INTERACTION FOR MAN-CHILD AND WOMAN-CHILD PLACEMENTS

Man-Child Placement

	boys	girls
4 years	boy-man > girl-man	boy-man < girl-man
5 years	boy-man > girl-man	boy-man < girl-man
6 years	boy-man > girl-man	boy-man > girl-man
7 years	boy-man > girl-man	boy-man > girl-man
8 years	boy-man < girl-man	boy-man < girl-man

Woman-Child Placement

	boys	girls
4 years	boy-woman < girl-woman	boy-woman > girl-woman
5 years	boy-woman < girl-woman	boy-woman > girl-woman
6 years	boy-woman < girl-woman	boy-woman < girl-woman
7 years	boy-woman > girl-woman	boy-woman < girl-woman
8 years	boy-woman > girl-woman	boy-woman < girl-woman

< closer together than
 > further apart than

TABLE 7

HOW CHILDREN PLACE ADULT FIGURES IN REFERENCE TO THEMSELVES OVER DIFFERENT AGE GROUPS

	boys	girls
4 years	closer to woman than man	closer to woman than man
5 years	closer to woman than man	further from woman but <u>not</u> closer to man
6 years	closer to woman than man	further from woman <u>and</u> closer to man
7 years	further from woman but <u>not</u> closer to man	further from woman <u>and still</u> closer to man
8 years	further from woman <u>and</u> closer to man	further from woman but <u>not</u> closer to man

a change to placing same sexed figures, which are the same as the child placing them, closest together; and then for girls, a change back at older age levels to heterosexual pairing. This switch back to heterosexual pairings was not yet evident in 8 year old boys, and would seem to come at least a year earlier, therefore, in girls than in boys. (See Table VI).

The Scheffé multiple comparison test was used to compare control placements with test placements. This test was chosen since normality and homogeneity of variance with the data were assumed and because the Scheffé procedure is most powerful for complex contrasts, that is, where more than two treatment means are involved, as in this analysis. The control placements over all ages were compared with the test placements. For example, the woman-boy and woman-girl placements were compared with their control to see if children were placing the controls differently from the human test placements because of some psychological significance attached to the latter. Since the Placement main effect did not approach significance for m-c and c-c placements, it made no sense to do comparisons on them. The Placement main effect did approach significance ($p < .10$) for the w-c placement so the Scheffé test was used. It revealed, over all age groups, no significant differences between control and test placements. However, testing contrasts at each of the five age levels showed that 8 year olds did significantly place controls differently from the woman-boy, woman-girl test placements ($p < .05$).

Free Choice Placements. Each child made 4 'free-choice' placements (2 on Day 1 and 2 on Day 2) where he was allowed to choose whichever and

TABLE VI

AGE X SEX X PLACEMENT INTERACTION FOR CHILD-CHILD PLACEMENTS

Boys		Closest	Furthest
	4 years	boy-girl	girl-girl
	5 years	boy-boy	girl-girl
	6 years	boy-boy	boy-girl
	7 years	boy-boy	boy-girl
	8 years	boy-boy	girl-girl

Girls		Closest	Furthest
	4 years	boy-girl	boy-boy
	5 years	girl-girl	boy-boy
	6 years	girl-girl	boy-girl
	7 years	girl-girl	boy-boy
	8 years	boy-girl	boy-boy

as many of the 10 figures as he wanted to place on the board. Table VII records the kinds of figures children chose. It was evident that about 50% of the children picked either all the figures or some combination of humans and rectangles. It was also evident that the percentages of kinds of placements did not change greatly from Day 1 to Day 2. However, when this data was broken up and the focus was on the kinds of placements made by each age group on the two respective days, it was apparent that as age level increased, the kinds of figures chosen became more stable. (See Table VIII). The average percentage differences between Days 1 and 2 for different categories of placements consistently decreased as age level increased. A one-tailed t-test for differences between means (Hays, 1963) was performed on the average percentage difference scores at 4 and 7 years (the scores being 9 and 3.67, respectively). Since this test was not significant, other t-tests between ages 4 and 5, 5 and 6, 6 and 7 (where the difference scores were smaller) would likewise not be significant. There was a significant difference ($p < .05$) between the average percentage difference scores of 4 and 8 year olds. Thus, for example, an 8 year old who chose only human figures on Day 1 was much more likely to also choose human figures on Day 2 than a 4 year old child.

It was also evident that as age level increased, children were more likely to exactly duplicate choice of figures on Days 1 and 2 (Table IX). Thus, an 8 year old who chose the man, woman and boy figures was much more likely to choose these same figures again than was a 4 year old who made the same initial choice of figures.

TABLE VII

PERCENTAGE OF CATEGORIES OF FIGURES CHILDREN CHOOSE IN FREE-CHOICE PLACEMENTS ON DAYS 1 AND 2

	rectangles	humans	rectangles + humans	all figures	just children	man + woman
Day 1	7%	24%	25%	26%	8%	10%
Day 2	19%	21%	22%	23%	8%	9%

TABLE VIII

PERCENTAGE OF CATEGORIES OF FIGURES CHILDREN CHOOSE IN FREE CHOICE PLACEMENTS ON DAYS 1 AND 2
AT EACH AGE LEVEL

	rectangles		humans		rectangles + humans		all figures		just children		man-woman	
	day 1	day 2	day 1	day 2	day 1	day 2	day 1	day 2	day 1	day 2	day 1	day 2
4 years	0%	17%	17%	8%	33%	38%	37%	25%	0%	7%	8%	12%
5 years	4%	20%	30%	38%	8%	12%	33%	25%	8%	0%	13%	7%
6 years	8%	20%	29%	21%	17%	17%	25%	17%	12%	8%	12%	17%
7 years	8%	15%	17%	16%	33%	39%	12%	16%	12%	12%	12%	8%
8 years	15%	20%	25%	25%	20%	17%	29%	25%	7%	7%	7%	7%

average % difference score

4 years	9.00
5 years	6.67
6 years	6.50
7 years	3.67
8 years	2.00

TABLE IX

PERCENTAGE OF EXACTLY DUPLICATED FREE CHOICE PLACEMENTS AT EACH
AGE LEVEL

	<u>% of duplicate choices</u>
4 years	17%
5 years	21%
6 years	25%
7 years	30%
8 years	33%

For all of the free-choice placements it was consistently observed that children tended to place human figures together and rectangles together and not let rectangles separate human figures. It was also interesting that in each group, a greater number of children picked human figures than rectangles. (See Table VIII). The schema 'people belong together' seems to be pretty well established at an early age.

CHAPTER IV

DISCUSSION

The reliability findings of the present study indicate that there is a general trend for reliability of figure placements to increase as age increases. Insofar as felt figure placements reflect social schemas, it seems that certain social schemas are learned earlier and consequently become more stable than other successive schemas. There is a significant trend for reliability to increase linearly with age for woman-child placements. A less significant trend is present for man-child placements and the same kind of trend, although not significant, is found with child-child placements. Further, at each of the five age levels there is the same order of placements from most to least reliable: woman-child, man-child then child-child.

The developmental and sex factors relevant to emerging social schemas indicates that at ages 4, 5 and 6 boys apparently feel closer to mother than father. By age 8 there is a shift toward feeling more distant from mother while at the same time feeling closer to father. Perhaps as he becomes more involved with peers and 'masculine' types of activities, a male model becomes most important. Girls at age 4 also feel closer to mother than father. (This seems reasonable since over both sexes the woman-child schema was shown to be the first established). Age 5 for girls seems to represent the 'transition' stage when they feel more distant from mother but not closer to father. The shift toward feeling more distant from mother and closer to father is seen at ages 6 and 7. Age 8 represents an interesting shift toward feeling more distant from mother still but also more distant from father. With boys by age 8, this shift of feeling more distant from both parents is not found. A look at the child-child placements may help explain this. 8 year old girls

tended to place boy-boy furthest apart and girl-boy closest together while 8 year old boys placed girl-girl furthest apart and boy-boy closest together. What this seems to suggest is that while preadolescent boys have shifted their attention from mother to father while turning off peer relations with girls, older girls have shifted their attention from father to other peer-age boys. Thus, girls at this age seem more ready to be involved with boys while boys at this age are not yet interested in girls (as characterized by, for example, "they're sissies and can't even punt a football") and direct their attention instead to significant male models.

These developmental trends in boys and girls are in accord with Kagan's findings (1960) concerning sex-typing and sex-role identity. The sex-appropriate behaviors and attitudes he discusses that develop during sex-role identification in young children parallel the findings discussed above of the present study. Meisels and Guardo (1969) suggest that "with reference to the socialization process... the development of the cultural norm for spatial usage during intimate interactions requires changes in children's schemata toward both sexes" (p. 1176). The fact that boys, over all placements, that is, even with those figures which did not have any well-defined positive-affect element for him, tended to place figures closer together than girls, seems to support the view of Meisels and Guardo who concluded that "In spatial schemata, the greater aggressiveness of males is manifested by the use of smaller spatial distances than females, even in negative-affect situations..., and is underscored by the finding that males quickly adopt an attitude of closer physical proximity than females" (p. 1177).

It is interesting to note that with child-child placements, there seem to be roughly three stages which represent changes in children's schemata

toward peer relations. First, 4 year olds place boy-girl closest together; then, in middle ages (5-7) boys place boy-boy while girls place girl-girl closest; finally at age 8, for girls, there is a switch back to placing heterosexual figures closest. In the pilot study (Berenson, 1969), this switch back for boys came a year later at age 9. Observation in school situations reveals how 3 and 4 year olds react indiscriminately to both same and opposite sexed peers. At ages 5, 6 and 7 there seems to be an identification with same sexed peers. The switch back to heterosexual pairings at older ages would seem to be of a different kind than at earlier ages.

Observation from free-choice placements in the present study revealed that even very young children tended to consistently group human figures together rather than separating them by rectangles. This adds support to Kuethe's hypothesis that "the earliest social schemata may well consist of primal social learning- people belong together and it is unpleasant to be alone" (Kuethe, 1964). Then what has seemed to happen in this study is what Piagetian theory would predict: this general global schema becomes differentiated and articulated and comes to focus on relationships which are relevant to and consonant with the child's need and reality world. Thus, figure placements for these children, over both sexes at early ages, indicated that the mother was the primary figure in the child's life. This is substantiated from general observations about the home up to age three. In pre-school and kindergarten the child's teacher is most likely a woman and may closely resemble, in many ways the mother figure. Both Freudian and learning theory grant that the young child around age 4 or 5 probably loves and prefers his mother to his father (McCandless, p. 338-346). Kuethe (1962) suspected that "the schema that places a child

with a woman is probably one of the first specific social schemata developed by most children". The next important social schema which may be seen to be emerging (but post-potent to the woman-child schema) is the man-child schema and lastly the child-child schema, which even at age 8 does not seem well entrenched. Perhaps it is just around this age when children start "growing away" from parents and start to be more cognizant of the importance of peer relations.

It is important to keep in mind that the focus of this study is not on well established social schemas, but rather the concern is with a much more subtle phenomenon of their emergence: when do these schemas come to be established? Thus, it was found that in many cases, specific results failed to attain criterion significance levels. In the present study, the reliability of figure placements fell short in some instances of criterion significance but may still suggest important trends. What this situation would seem to dictate is that one look at different kinds of information that can be gathered from the various statistical approaches to see if they corroborate each other. Thus, one finding showed an increasing reliability of figure placements with increase in age levels for two-figure placements. This finding gains credence when 'free-choice' placements are looked at and again increasing stability of placements over ages is found. Here it is possible to say that knowing which figures a 9 year old chooses on Day 1, one is more sure of knowing the figures he will pick on Day 2 than one is for a 4 year old. Also it was found that only at older ages and with more established, that is, more reliable schemas (woman-child) that children significantly place controls differently from human

figures, thus presumably placing human figures in a certain way because of some psychological significance attached to them. Again, analyses of variance have shown reasonable developmental changes which are consonant with hypotheses made from reliability findings.

A reasonable question one may ask at this point is "Because a child places a child figure closer to the woman than the man, is it legitimate to say he 'feels closer to his mother than his father'". Although it should be remembered that the focus of this study was reliability and not validity of figure placements, there is evidence of an isomorphism between physical proximity and psychological closeness. Little (1965) studied the concept of personal space and operationally defined it in terms of the placement of human figures. He found that the distance placed between dyad figures was determined by an inverse relationship with the degree of liking attributed to them. Guardo (1969) continued this exploration of the relationship between psychological closeness and physical proximity by 11 year olds and found, as Little had, that there is a "strong and significant inverse relationship between interfigure distances and... degree of 'liking'".

Meisels and Guardo (1969) furthered research on social schemas in children by exploring the use of personal space schemata (using Hall, 1966 as a reference for the definition of personal space) by children of different ages. The main objectives of the study were to ascertain: 1) if the perception of personal space schemata evidences a developmental pattern; and 2) if there are sex differences in how distances are set to implement psychological relationships. They found that mean interfigure scores for

degree of liking compared well with Hall's (1966) conceptualized personal space zones, that is, that the specified types of interpersonal interactions suggested by Hall as taking place within the personal space zones were found to be related to the children's personal space schemata. Further, they found that this relationship between physical proximity and psychological closeness "is an already well-established social schema" in 8 year olds.

Although these studies lend credence to the validity of the figure placement technique, this validity is not yet unequivocal. Meisels and Guardo (1969) point out that the operational definitions of social schemata across studies seem to be similar but the underlying assumptions appear to be different. For example, Little (1965) assumes personal space schemata to exist in a priori structured form, and the schemata are considered to be isomorphic with the patterning of actual interpersonal interaction distances. Kuehlo, on the other hand, apparently does not assume the schemata to exist a priori and they either may or may not be isomorphic with actual interpersonal interaction distances. Sommer (1967) suggests that, for example, the concept of social distance does have some geographic reference, but he asserts that there is no simple isomorphism between psychological and geographic concepts.

The fact that there are not agreed upon underlying assumptions about the nature of social schemas, coupled with the absence of any attempt in the literature in this field to correlate or define such concepts as social distance, social schema and personal space, make conclusions from

relevant studies equivocal.

The present study suggests that the felt board figure placement technique may be more or less reliable, depending on age level and kinds of placements. Thus, for example, child-child placements by a 4 year old may be very unreliable while mother-child placements for a 9 year old may be quite reliable.

The felt technique developed by Kuethe may have potential as a diagnostic tool for the differential diagnosis of childhood behavioral disorders and the evaluation of social and interpersonal perceptions. Kuethe (1962) says: "The study of unit forming principles in social perception is required for an adequate psychology of interpersonal relations". However, before this potential can be explored, this technique must go through a validating and development process consisting of a determination of mean and variance scores for normal children and various diagnostic groups, keeping in mind which placements have been shown to be most reliable in this study.

CHAPTER V

SUMMARY

Children of different age levels placed human figures and rectangles cut from felt, on a felt board. Dependent measures used were social distance for two-figure placements and percentages of kinds of 'free choice' placements. Reliability of the placements did increase over age levels for the three kinds of two-figure placements: man-child, woman-child, child-child. Further, it was evident that certain schemas were prepotent to others, that is, they became entrenched earlier than others depending on the importance of the schema in the child's environment at any given age level. Thus, at each age level, the woman-child schema seemed most reliable, man-child next and child-child last. Although failing to reach criterion significance level, there was a trend for the children's placements of felt figures to change as a function of age and sex. Thus, for example, 4 year old boys placed boy-woman closer together than boy-man, while this trend was reversed for 8 year old boys. Information from 'free choice' placements also showed increased reliability of kinds of placements as age increased.

APPENDIX A

ANOVA for Woman-Child Placements

<u>SV</u>	<u>df</u>	<u>MS</u>	<u>F</u>
<u>Bet</u>	<u>59</u>		
A	4	3.530	.25
B	1	.689	.05
AB	4	2.723	.16
S/AB	50	12.837	
<u>Within</u>	<u>300</u>		
P	2	8.804	2.52**
PA	8	4.771	1.41
PB	2	7.889	2.26*
PAB	8	6.368	1.83**
SP/AB	100	3.483	
D	1	7.084	1.34
DA	4	9.230	1.67
DB	1	4.612	.83
DAB	4	10.399	1.82*
SD/AB	50	5.705	
DP	2	4.734	1.13
DPA	8	4.737	1.14
DPB	2	1.458	.25
DPAB	8	6.429	1.52*
SDF/AB	100	4.248	

** p < .10

* p < .20

A= Age (1, 2, 3, 4, 5)

B= Sex (1, 2)

P= Placement (1, 2, 3)

D= Day (1, 2)

APPENDIX A (cont)

ANOVA for Man-Child Placements

<u>SV</u>	<u>df</u>	<u>MS</u>	<u>F</u>
<u>Est</u>	<u>59</u>		
A	4	5.971	.52
B	1	23.383	1.98*
AB	4	2.067	.18
S/AB	50	11.717	
<u>Within</u>	<u>300</u>		
P	2	9.493	1.62
PA	8	2.317	.65
PB	2	13.157	3.42***
PAB	8	6.705	1.76**
SP/AB	100	3.810	
D	1	4.064	.67
DA	4	7.153	1.14
DB	1	1.375	.17
DAB	4	9.249	1.56*
SD/AB	50	6.226	
EP	2	5.014	1.7
DPA	8	3.796	1.4*
DPB	2	1.571	.64
DPAB	8	4.700	1.77**
SDP/AB	100	2.858	

*** p < .05

** p < .10

* p < .20

APPENDIX A (cont)

ANOVA for Child-Child Placements

<u>SV</u>	<u>df</u>	<u>MS</u>	<u>F</u>
<u>Between</u>	<u>52</u>		
A	4	10.058	.48
E	1	10.927	.50
AE	4	1.550	.05
S/AE	50	19.880	
<u>Within</u>	<u>420</u>		
P	3	13.501	2.37**
PA	12	5.187	.93
PB	3	3.866	.67
PAB	12	3.107	1.41*
SP/AE	150	5.754	
D	1	37.171	3.88**
DA	4	17.566	1.83*
LB	1	59.449	6.19****
LAE	4	7.498	.64
SD/AE	50	9.601	
DP	3	1.549	.24
DPA	12	5.874	1.44*
DPB	3	2.762	.46
DPAB	12	4.555	1.17
SDP/AE	150	4.081	

**** p < .025

** p < .10

* p < .20

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