Similarity of Toy Preference as a Determinant

of Peer Choice in Preschoolers

Morry A. J. Schwartz

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SIMILARITY OF TOY PREFERENCE AS A DETERMINANT

OF PEER CHOICE IN PRESCHOOLERS

BY

MORRY AVRUM JOEL SCHWARTZ

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the University of Manitoba in partial fulfillment of the requirements
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This Thesis is Dedicated to the Memory of my Grandfathers

Maurice Abraham Bloom

Morris Schwartz

"To live in hearts we leave behind is not to die."

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Abstract

Sex of child appears to be an important factor in peer choice.
A detailed review of the literature, however, suggests that similarity
of play interests is also an important determinant of playmate
preference. In an attempt to assess the impact of interest similarity,
the present study related similarity of toy interests between children
to their friendship preferences. Information regarding toy preference
was obtained from a questionnaire of 25 toys rated by the children's
parents. A sociometric rating scale (Asher, Singleton, Tinsley & Hymel,
1979) and a preference rating for imaginary peers were administered to
assess peer preference for actual and imaginary peers. Children did not
rate actual same-sex peers more positively than opposite-sex peers, but
they did rate imaginary same-sex peers more positively than imaginary
opposite-sex peers. Children also failed to rate similar classmates
more favourably than dissimilar classmates. However, children rated
same-sex similar imaginary peers more favourably than opposite-sex
similar, same-sex dissimilar and opposite-sex dissimilar peers. The
data also suggest that similarity facilitates attraction but that
dissimilarity does not lead to dislike when children are of the same-sex
as the rater. Opposite-sex peers are rated more highly (compared to
a control) when any information about toy preferences is available.

Similarity of Toy Preference

As a Determinant of Peer Choice in Preschoolers

Introduction

Although many questions pertaining to the process of peer choice amongst children age 3 to 5 years remain unanswered, it is clear that children as young as three years can identify both their own and other children's sex (Thompson, 1975). Children have consistently been observed to prefer same-sex playmates to opposite-sex playmates (Charlesworth & Hartup, 1967; Fagot & Patterson, 1969; Jacklin & Maccoby, 1978; Kohlberg, 1966). For instance, Parten (1933) found that of her preschool sample, 81% of female and 62% of male subjects chose same-sex peers as their first five playmate choices. Jacklin and Maccoby (1978) found that children directed both more positive and negative social behaviour toward same-sex playmates than they did toward opposite-sex playmates, suggesting that children have a marked preference for interaction with same-sex children. In order to interpret the children's behaviour, Jacklin and Maccoby offered a behavioural compatibility hypothesis in which they suggested that some element of a child's behaviour either attracts or repels other children. Goodenough, as early as 1934, had suggested that children may sex segregate because they enjoy similar activities. Jacklin and Maccoby's hypothesis relates to Goodenough's (1934) earlier suggestions in that children may choose same-sex peers because of the enjoyment of similar activities. If activity preferences differ for the sexes, which they seem to, peer preference may appear to be based on sex rather than on sex-related activity preference.

Bianchi and Bakeman (1978) examined two different types of nursery school settings in order to see whether sex-typed behaviour was less common in nursery schools that attempted to minimize sex differences. In both open and traditional schools, preschoolers were found to spend over 80% of their time playing with other children during free-play periods, but children in open schools were found more often in mixed-sex groups than children in traditional schools. However, children still preferred same-sex groups to mixed-sex groups, even in the open schools. Factors other than the sex of the peer are obviously influencing children in peer preference. If sex were the only factor influencing peer preference, then children in both open or traditional schools should have selected same-sex peers at the same rate, and according to Bianchi and Bakeman (1978) this was not the case. In traditional schools teachers may be more likely to encourage same-sex play, while in open schools teachers may encourage more mixed-sex play. Bianchi and Bakeman's (1978) results seem to suggest, therefore, that children are not inflexible in peer preference, and that, when allowed the opportunity, they interact with opposite-sex peers.

Langlois, Gottfried and Seay (1973) investigated the effects of sex of peers and changes in the sex composition of dyads on the social behaviours of children. "Five-year-old and three-year-old females showed higher levels of social behavior in unisexual dyads. However, three-year-old males were more socially active in heterosexual pairs. Changing the sex composition of the dyad produced higher levels of social behaviour in three-year-olds of both sexes. In contrast, five-year-olds responded with higher levels of social behaviour when the new partner was the same

sex as the previous partner." (p. 93) If sex of the target child was the only factor operating in peer preference, then children of both ages should have shown higher levels of social behaviour when with same-sex children. Again these results suggest that factors other than sex of the peer influence preference.

Haskett (1971) studied a group of children in order to observe effects of interaction patterns on interpersonal attraction. Initially subjects showed strong same-sex peer preferences similar to results obtained by Parten (1933). "Of those subjects who ranked all other classmates in the pretreatment preference test, 95% chose as first best friend a child of the same—sex. Eighty-two percent chose as their first four best friends a child of the same-sex" (p. 430). Haskett concludes that "the generalization that young school children prefer same-sex peers as friends is thus supported" (p. 430). Haskett then investigated a condition in which opposite and same-sex peers had to cooperate to complete a task. Haskett noted that when cooperative interaction occurred, it significantly increased preference for opposite-sex peers but not for the same-sex peers. Perhaps children increased social behaviour with opposite-sex peers to see if they had any similarities of interest, or because of discovered, but previously unrecognized, similarities.

Barkley, Ullman, Otto and Brecht (1977) performed a study involving children's imitation of same versus opposite-sex models. A review of available literature led the authors to assess the support for what they refer to as the like-sex hypothesis which "predicts that children of the same-sex as the model will display greater imitation than children of the opposite-sex. Where both sexes of models are used an interaction

of these variables is predicted in which children imitate same-sex

models more often than opposite-sex models" (p. 721). Their study of

research demonstrated that only 18 of the 81 studies reviewed, or 22%,

supported the like-sex hypothesis. Fifty-nine of the 81 studies, or

72.8%, failed to support this hypothesis, while 4 of the 81 studies, or

4.9%, could not be assigned exclusively to either position. Barkley et

al. suggest a sex-typing hypothesis: if a child witnesses a modeled

behaviour which is sex-appropriate then, regardless of the sex of the

model, the child will show a greater imitation than will children of the

opposite sex. A child may not be attracted to another child because

he/she is of the same-sex, but rather because the peer is behaving in an

appropriate or attractive manner. I would therefore expect that a boy

would be more attracted to a girl emitting a preferred behaviour than to

another boy emitting an unpreferred behaviour.

Whitehouse (1978) attempted to see whether similarity of interests

affected older children's preference for a stimulus person. Subjects

were administered a questionnaire of activity preferences in classroom

groups, in order to compose descriptions of same- and opposite-sex

stimulus persons whose interests were 100%, 50% or 0% similar to the

subjects' interests.

> A repeated measures analysis of variance revealed that
>
> subjects preferred same-sex stimulus persons to opposite-
>
> sex stimulus persons, and stimulus persons with similar
>
> interests to stimulus persons with less similar interests.
>
> The three-way interaction was also significant, and post
>
> hoc comparisons showed that while same-sex stimulus

persons were, in general, preferred to opposite-sex

stimulus persons, opposite-sex stimulus persons with

100% similar interests were preferred to same-sex

stimulus persons with 0% similar interests. The results

were interpreted to suggest that children's bias

against opposite-sex peers may be modified by information

regarding similarity of activity preferences (p. 1).

The preceding studies all suggest that sex of the peer is clearly

not the only factor operating in children's peer preference patterns.

Another factor is similarity of play interests, which closely parallels

what Jacklin and Maccoby (1978) refer to as the behavioural compatibility

hypothesis. Since preschoolers' interactions revolve

around toys, I believe that children will interact with other peers who

show similar toy preferences. Following both this line of reasoning

and Whitehouse's (1978) findings, I predict that a boy/girl who sees a

peer playing with liked toys will be more likely to select that peer

as a companion than another peer who is playing with disliked toys. The

closer the toy preferences of the two children, the greater the

attraction between the children.

Children may show same-sex peer preferences largely because same-sex

children are more likely to enjoy similar play activities. Of course,

gender is one component of similarity, so if all other factors are equal,

the same-sex peer will be preferred; children will rate same-sex peers

with similar toy preferences higher than opposite-sex peers with highly

similar toy preferences. At the same time, however, I believe children

will rate opposite-sex peers with highly similar play preferences higher

than same-sex peers with dissimilar toy preferences.

It is vital that a measure of similarity amongst the children be obtained before the children become acquainted in order to more unambiguously attribute peers preferences to similarity. In arriving at this measure of similarity, a questionnaire was designed to assess children's preferences for 25 toys common to the daycare and home setting. The results of this questionnaire were processed and provided the experimenter with a measure of similarity independent of the children's interactions.

In order to test the concept of the similarity of interests, two measures were then utilized. In the first measure, sociometric rating scale by Asher, Singleton, Tinsley and Hymel (1979) was used by the children to rate how much they enjoyed playing with other peers at their daycare centre. In the second measure, four favourite and four least favourite toy choices were manipulated by the experimenter in four combinations:

1)   same-sex - similar toy preferences (SS)

2)   same-sex - dissimilar toy preferences (SD)

3)   opposite-sex - similar toy preferences (OS)

4)   opposite-sex - dissimilar toy preferences (OD)

Children heard four descriptions of imaginary peers whose likes and dislikes corresponded to the above four conditions. Subjects were then asked to rate how much they would like to play with each of the four imaginary peers.

It was hypothesized that: a) same-sex peers would be rated more positively than opposite-sex peers; and b) similar peers would be rated

more positively than dissimilar peers. In the second measure of the study where children rated preference for imaginary peers, an additional hypothesis was tested: c) children should prefer imaginary peers in the following order (from most to least preferred): SS, OS, SD, OD.

Method

Participants

Participants were preschoolers in two Winnipeg daycare centres at the University of Manitoba. Both centres had a morning and afternoon session with approximately an equal number of children in each session. In total, data were collected from 26 girls and 24 boys. In the classmate rating task, data were not collected from three girls and six boys due to: refusal (one girl, three boys), absence (two girls, two boys), and withdrawal from the centre (one boy). However, ratings of these children by other participants were obtained. In the similarity experimental task, data were unavailable for five boys: three refusals, one absence and one withdrawal.

Tasks

Questionnaire. A letter describing the experimental procedure was sent to the parents along with a questionnaire. The parent who spent the most time with the child was asked to evaluate the child's preference for a list of common toys. Toys were selected from three studies (Connor & Serbin, 1977; DeLucia, 1963; Masters & Wilkinson, 1976). Parents rated the toys with scores ranging from one (least favoured) to five (most favoured). Results of the questionnaire provided the information needed for the experimental manipulation on the similarity experimental task and the calculation of a similarity coefficient on the classmate rating task. Appendix A contains a copy of the letter and of the questionnaire.

Imaginary peers. For each child, short descriptions of an imaginary peer's toy preference were constructed. The imaginary peer's likes and dislikes were completely similar or completely dissimilar to the child's toy preferences. In the similarity condition the imaginary peer was described as liking to play with four toys the child most favoured, and disliking to play with four toys the child least favoured. In the dissimilarity condition the imaginary peer was described as liking to play with four toys the child least favoured and disliking to play with four toys the child most favoured.

Head drawings of imaginary male and female peers were developed (see Appendix B for examples), and differed only with respect to hairstyle. Colour of hair differed in the drawings; in one case the female and male drawings had brown hair, and in the other case female and male drawings had black hair. Sex combined with the similarity/ dissimilarity conditions created four descriptive combinations: same-sex similar (SS), same-sex dissimilar (SD), opposite-sex similar (OS) and opposite-sex dissimilar (OD).

Similarity coefficient. Questionnaire responses provided the basis for the calculation of similarity coefficients for all possible pairs of children. The similarity coefficient was the correlation between any two subjects over the set of twenty-five toys: all toys rated by child A's parent were matched to the same toys rated by child B's parent and a correlation calculated. When less than twenty-five toys were rated, the missing toys were ignored and the coefficient calculated (mean number of toys rated was 20.8 ranging from 14 to 25). The similarity coefficient was designed to provide a summary index of the

relationship between sets of parental toy ratings. A large, positive coefficient would represent similar ratings, and a large, negative coefficient would reflect dissimilar ratings.

Photographs. Head-shoulder, black-and-white photographs were taken of all children at the daycare centres. The experimenter selected the best photograph of the child and had it enlarged to 12.5 x 9 cm. These photos were then used in the classmate rating task described below.

Procedure

After spending thirty hours with the children over a period of three weeks, the experimenter, a male graduate student, conducted the experiment. The procedure consisted of two tasks: a classmate rating task and a similarity experimental task. In one daycare centre the classmate rating task was administered first; in the second centre the similarity experimental task was administered first.

For both tasks, a child was individually approached and asked to play a game. If agreeable, the child was taken to a separate room and seated beside the experimenter in front of a small table. A rating scale designed by Asher, Singleton, Tinsley and Hymel (1979) was used for ratings in both tasks. Three boxes (16.5 x 20 cm) were arranged in front of the child on the table. On each box was a drawing of a round face. One box had a happy face (big smile), one a neutral face, and one a sad face (big frown). Appendix C contains an example of the scale. After the child and experimenter were comfortably seated the experimenter said (after Asher, Singleton, Tinsley and Hymel,

1979), "Now we're going to play a game. Look at the three boxes I have over here. Each one has a different face on it, doesn't it?" The experimenter pointed to the box with the happy face on it and said, "This one has a happy face on it. That big smile means you like something a lot." Pointing to the box with the neutral face he then said, "This face in the middle means you 'kinda' like something." The experimenter then pointed to the box with the sad face on it and said, "This sad face means you don't like something very much."

The experimenter then familiarized the child in using the scale by initiating practice trials using different foods. A typical practice trial went as follows:

> "I have some pictures of some food and I would
> like to know how much you like the food in the pictures.
> If you really like the food in the picture, then put
> the picture of the food in the box with the happy
> face on it. If you 'kinda' like the food in the
> picture, then put the picture of the food in the box
> in the middle. If you don't like the food in the
> picture, then put the picture of the food in the box
> with the sad face on it."

Children were then shown different pictures of food (see Appendix D). Failure to use one of the boxes prompted the experimenter to ask the child what food would go into the unused box. Experimenter then drew that food on a piece of blank paper and asked the child to place the drawing into the designated box. When the experimenter was certain that the child had a good understanding of how the scale operated he said, "That was very good. I see that there are some

things you like a whole lot (pointing to the happy face), some

things you 'kinda' like (pointing to the neutral face), and some

things you don't like very much (pointing to the sad face)."

Classmate rating task or similarity experimental task was then

introduced to the child.

Classmate rating task. For the classmate rating task, $\underline{E}$ followed

the preceding introduction with,

"Now I have some pictures of the children in

your class, and I would like to know how much you like

to play with each of these children at school. If you

really like to play with the person then put the picture

in the box with the happy face on it. If you 'kinda'

like to play with the person then put the picture in

the box in the middle. If you don't like to play with

the person very much, then put the picture in the box

with the sad face on it."

The child was then shown pictures of the children in the class.

(Class size varied for the four groups: Home Economics - A.M., n = 9;

Home Economics - P.M., n = 12; Education - A.M., n = 10; Education - P.M.,

n = 15). The experimenter would lay the picture of one peer in front

of the child and say, "Now show me how much you would like to play

with this child." The order of pictured peers was randomized within

sex, and then sex was alternated so that children typically saw male-

female-male-female presentations.

After sorting the photographs of the children in the class the

child was thanked, complimented for cooperating, and returned to the

classroom. The experimental session lasted approximately fifteen minutes per child. Each child's rating of a classmate was scored on a dislike scale with a '3' for the sad face, '2' for the neutral face and '1' for the happy face (see Appendix E).

Similarity experimental task. Where the similarity experimental task was completed first, the experimenter used an introduction identical to classmate rating task with pictures of food to introduce the scale to the children. Where the classmate rating task had previously been run the following reintroduction of the scale was used, "Do you remember these faces?" In almost all cases children responded positively and explained the scale to the experimenter. In the cases where the child said nothing the experimenter would say, "This one has a happy face on it, doesn't it? That big smile means you like something a lot. This one in the middle means you 'kinda' like something. This one with the sad face means you don't like something very much."

When the experimenter had completed the introduction or reintroduction of the scale to the child, he initiated the test trial. A typical trial followed this pattern:

A drawing of a girl (in the following example) was put in front of the child. The experimenter then said, "This is a girl. She likes playing with dolls, footballs, playrings and balls. She doesn't like playing with airplanes, beads, puppets or toy telephones." To aid the child in remembering what the imaginary peer liked and disliked the experimenter put a picture of each stated toy in front of the imaginary peer (see Appendix F). The experimenter then repeated the imaginary peer's toy preferences while pointing to the pictured toys.

He then said, "Now show me how much you think you would like to play with this girl. If you would really like to play with this girl, then put her picture in the box with the happy face on it. If you would 'kinda' like to play with this girl, then put her picture in the box in the middle. If you would not like to play with this girl, then put her picture in the box with the sad face on it." The experimenter then repeated, "Now show me how much you think you would like to play with this girl."

When the first rating had been completed, the experimenter continued with the next rating using the identical procedure. This continued until all four conditions had been presented to the child. The order of presentation of the four conditions presented to the child had been determined randomly. A list of all possible orders of presentation were prepared, and the experimenter randomly assigned the fifty subjects to one of the possible orders. After the child responded to each condition, the experimenter marked the child's response on a prepared data sheet (see Appendix G). Experimental sessions lasted approximately ten minutes per child.

Upon completion of the four conditions the experimenter said, "That was very good. Now I have another game I would like to play with you." To assess the impact of sex without any similarity/ dissimilarity information the experimenter presented a black-and-white drawing of a male and female imaginary peer to the child. He then said, "This is a boy. We don't know what he likes to play with. Now show me how much you think you would like to play with this boy." When the child had indicated how much s/he would like to play with the

boy (using Asher, Singleton, Tinsley and Hymel (1979) rating scale),
the child was presented with a drawing of a female imaginary peer
and asked to respond to the same question. The order of presentation
of the male and female imaginary peers were determined randomly by
the experimenter before the session. As with the previous ratings,
responses made by the child were marked on the similarity/dissimilarity
data sheet.

Results

To describe sex differences for the sample of rated toys a
difference score, or d-score, was calculated for each toy; this d-score
reflects the mean sex difference in terms of pooled standard deviation
units. The sex effect for the toys: airplane, blocks, football, racing
car, tinker toys and trucks were at least 2/3 SD unit with males
exceeding female means. For crayons, dollhouse, dolls and painting
or drawing, female means exceeded male means by at least 2/3 of an SD
unit. Table 1 provides a summary of d-scores for the twenty-five toys.
As expected, the results followed previously identified sex stereotypic
patterns (Connor & Serbin, 1977; DeLucia, 1963; Masters & Wilkinson, 1976),
and support the assumption that toy preferences differ for the sexes.

Sociometric ratings.

To test the hypothesis that same-sex peers would be rated higher
than opposite-sex peers in classmate rating task, two ANOVA's were
performed. The first tested for sex differences in the rating of male
peers, and the second for sex differences in the rating of female peers.
As previously described, ratings of peers were assigned a score from 1,
"really like to play with the child", to 3, "don't like to play with the
child". A rater's mean scores for males and for females were calculated
and became the dependent variables for the first and second analyses,
respectively (see Table 2). The number of ratings contributing to the
means ranged from three to seven, and averaged 4.8. Results failed
to support the hypothesis that children would rate same-sex peers
more highly than opposite-sex peers.

Table 1

Summary of Sex Differences for Twenty-Five Rated Toys

Toy	Parent's Mean Rating[a]		d-score[b]
	Boy (n=24)	Girl (n=26)	
Airplane	3.6	2.3	1.08*
Balls	3.6	3.4	.20
Barrel of Monkeys	2.4	2.1	.27
Beads	1.9	2.4	-.41
Bells	2.2	2.3	-.09
Blackboard	3.3	3.5	-.2
Blocks	3.7	2.9	.66*
Crayons	3.7	4.3	-.73*
Dollhouse	2.3	3.4	-.78*
Dolls	2.1	3.8	-1.21*
Farm Toys	3.3	2.8	.41
Football	3.8	2.3	1.07*
Looking at Books	4.5	4.5	0
Magnifying Glass	2.2	2.5	-.27
Marbles	2.7	2.4	.25
Musical Triangle	3.4	3.1	.23
Painting or Drawing	3.9	4.6	-.70*
Playdoh	4.1	4.2	-.10
Playrings	2.2	1.9	.27
Puppets	2.7	2.9	-.18
Puzzles	3.3	3.5	-.18
Racing Cars	4.2	2.7	1.07*
Toy Telephone	3.1	3.3	-.15
Tinkertoys	3.7	2.9	.66*
Trucks	4.3	2.5	1.28*

[a]Total sample, 24 boys and 26 girls. The number of ratings averaged for each toy varies from 14 to 25 because of missing data, e.g. toys not in home.

[b]Differences between means expressed in pooled standard deviation units.

*d-scores larger than or equal to 2/3 standard deviation.

Table 2

ANOVA: Sex Differences in Rating Peers
on Classmate Rating Task

Source	df	ss	ms	f	p
Ratings of Males					
SEX	1	.04	.04	.17	.69
ERROR	44	11.96	.27		
Ratings of Females					
SEX	1	.27	.27	1.62	.21
ERROR	44	7.4	.17		

Similarity coefficients.

The parent's ratings of the set of toys were processed for similarity
coefficients between all possible pairs of children in a given class.
Each similarity coefficient was the correlation between two children
over the set of 25 items (all 25 items rated by child A's parents were
paired with the same items rated by child B's parents and a correlation
calculated). In the case where less than 25 items were rated, only
rated items were used in calculating the similarity coefficient. These
similarity coefficients ranged from -.69 to .86 for the 294 possible
pairings of children.

Sociometric attraction-similarity.

Using the sociometric ratings and the similarity coefficients, the
major analysis of interest was conducted to see if sociometric ratings
were related to toy preference similarity. Since children's sociometric
ratings were expressed on a dislike scale (with higher score indicating

dislike), and since a large positive similarity coefficient indicated similarity in toy choice, an attraction-similarity hypothesis would predict a negative relationship between disliking and similarity. Therefore, when relating the similarity coefficient to the sociometric rating of children, a low negative attraction-similarity correlation was expected. For each child, I correlated the vector of similarity coefficient over the rest of the class with the vector of that child's sociometric ratings of the rest of the class. Results failed to confirm the hypothesis, mean r = -.029, range from -.86 to .96, (n = 46). Figure 1 provides a histogram of attraction-similarity correlations for the 46 children, (3 children were omitted because they started Daycare well after testing had begun, 1 child was omitted due to withdrawal from Daycare). Mean attraction similarity correlation was calculated using Fisher's Z-transformation of r_{xy}.

To explore the possibility that attraction-similarity was an important factor within sex but not between sexes a mean attraction-similarity correlation was calculated separately for males rating males and females rating females. Figure 2 provides a histogram of attraction-similarity correlations separately for sexes. Results failed to confirm both hypotheses: for males rating male peers, mean r = -.146, range from -1.0 to .80, (n = 18), (four males were omitted from the results due to the fact that they failed to show any variability in their rating of peers). For females rating female peers, mean r = -.324, range from -1.0 to .78, (n = 24). Mean attraction-similarity correlations were calculated as before, with the exception that similarity coefficients were calculated over same-sex combinations of children

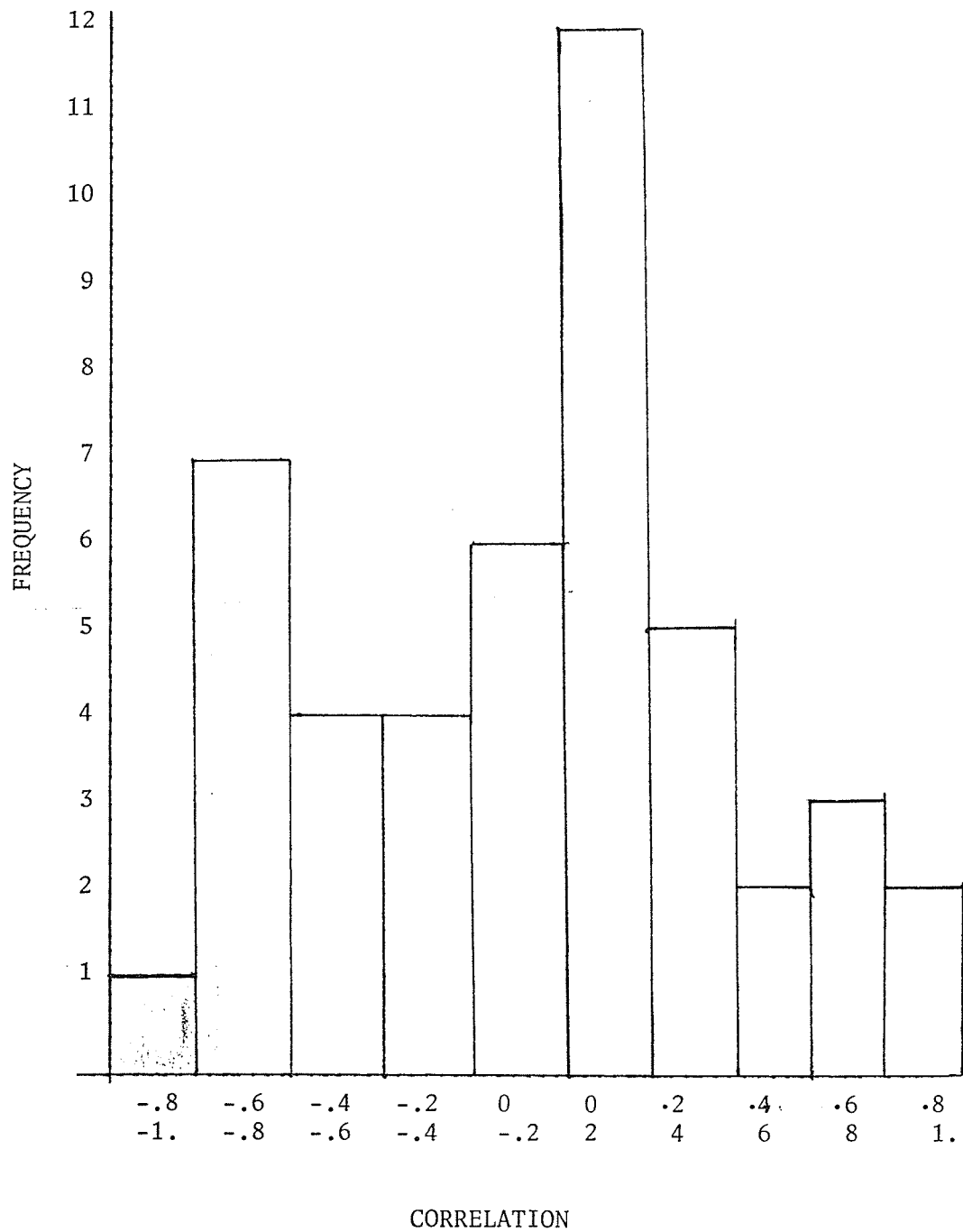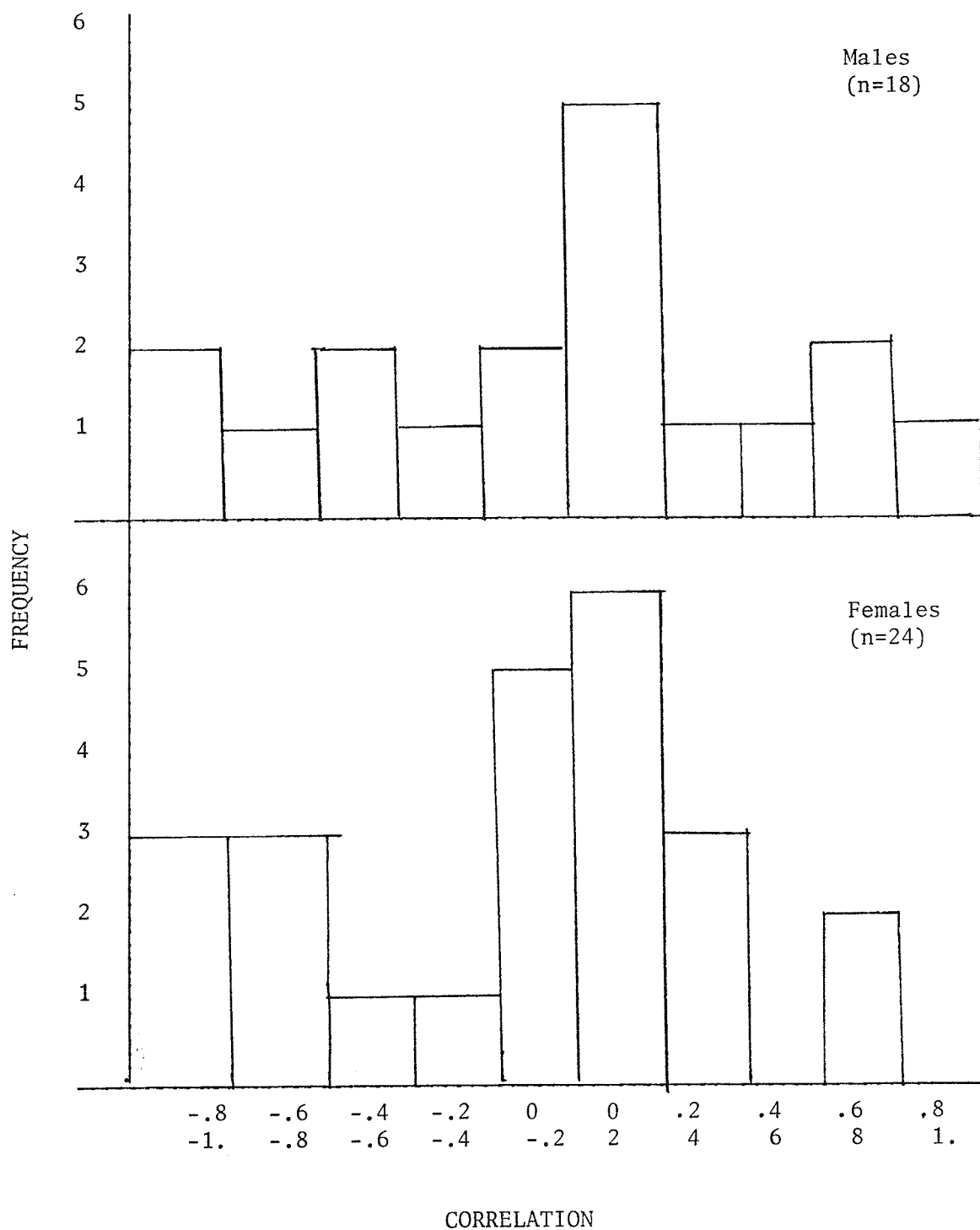Figure 1. Histogram of Attraction-Similarity Correlations for Entire Sample (n=46)

CORRELATION

Figure 2. Histogram of Attraction-Similarity Correlations
Separately for Sexes

and only same-sex peer ratings were used.

Imaginary peers.

In the similarity experimental task, children rated imaginary peers on a scale from 1 - "really like to play with the child" - to 3 - "don't like to play with the child". It was hypothesized that same-sex similar (SS) imaginary peers would be preferred overall by the children followed by opposite-sex similar (OS), same-sex dissimilar (SD), and, finally, opposite-sex dissimilar (OD) imaginary peers. This within-subject ordering of ratings was analyzed using multivariate analyses of Helmert contrasts. By applying Helmert contrasts to the four ratings, three new variables are created; these new variables express different steps in the hypothesized order. The multivariate, or overall test, provides a general index of whether the ratings differed from each other in any way. The new scores created by Helmert contrasts, as applied to the ratings of the SS, OS, SD and OD, are shown in Table 3A. It can be seen in Table 3A that the first Helmert contrast, A, indexes the difference between the SS rating and the mean of the other imaginary peers. B contrasts OS with the mean of SD and OD. Finally, the SD - OD difference is expressed in Helmert contrast C. If the multivariate test of the set of Helmert contrasts is significant, we know that the ratings differ from each other in some way. Since the three Helmert contrasts are orthogonal, univariate tests of each new variable can then tell us which aspects of the hypothesized sequence are contributing to the overall difference.

The multivariate ANOVA for peer (within subject comparisons) was not significant $\underline{F}$ (3,41) = 1.64, and only the univariate test for

Table 3

Transformation and Analysis of Ratings of Four Imaginary Peers

A. WITHIN SUBJECT CONTRASTS

New Variable	ORIGINAL VARIABLE[a]			
	SS	OS	SD	OD
Helmert A	1.0	-.33	-.33	-.33
Helmert B	0	1.0	-.50	-.50
Helmert C	0	0	1.0	-1.0

B. MANOVA RESULTS FOR NEW VARIABLES

Source	MULTIVARIATE TESTS			UNIVARIATE TESTS	
	df	F	p	F[b]	p
Within					
Peer	3,41	1.64	.19		
Helmert A				5.12	.03
Helmert B				.01	.93
Helmert C				.03	.86
Peer x Sex	3,41	2.52	.07		
Helmert A				.83	.37
Helmert B				.22	.64
Helmert C				5.84	.02
Between					
Sex	4,40	1.86	.14		
SS				.94	.34
OS				.09	.77
SD				1.46	.23
OD				1.03	.32

[a]SS = Same-Sex Similar; OS = Opposite-Sex Similar; SD = Same-Sex Dissimilar; and OD = Opposite-Sex Dissimilar

[b]Degrees of freedom were 1 and 43 for all Univariate F tests.

Helmert A, children preferring SS to the mean rating of OS, SD and OD imaginary peers, was significant F (1,43) = 5.12, p < .03. The mean ratings for the four imaginary peers are presented in Figure 3. My hypothesis predicted a linear increase in disliking from SS to OD. Only the first step in the observed sequence was supportive of this prediction. The multivariate ANOVA for Sex (between subject factor) was not significant, F (4,40) = 1.86.

The multivariate ANOVA for peer x sex interaction was not significant (see Table 3), F (3,41) = 2.52, but the sexes did differ, F (1,43) = 5.84, p < .02 on Helmert C. Males rated same-sex dissimilar peers less favourably than opposite-sex dissimilar peers, while females reversed this pattern and rated same-sex dissimilar peers more favourably than opposite-sex dissimilar peers. Put another way, both males and females rated dissimilar females more favourably than dissimilar males. Dissimilar males were more disliked, receiving mean ratings of 2.10 and 2.00 from males and females respectively, than dissimilar females who received mean ratings of 1.74 and 1.77 from males and females respectively.

As noted previously, the children were asked to rate a boy and a girl with no associated similarity information. This allowed for the inclusion of a same-sex control (SC) and an opposite-sex control (OC) peer. It was expected that control peers should be rated as neutral in similarity and should fall between similar and dissimilar peers of the same-sex, for example in same-sex stimulus conditions we expect SS>SC>SD, while in opposite-sex stimulus conditions we expect OS>OC>OD. Furthermore, it was hypothesized that control peers should fall in the middle of the overall hypothesized ordering of peers, SS>OS>SC>OC>SD>OD. As noted earlier, this ordering is based on the assumption that similarity is more important than sex as a

Figure 3. Mean Ratings for Four Imaginary Peers
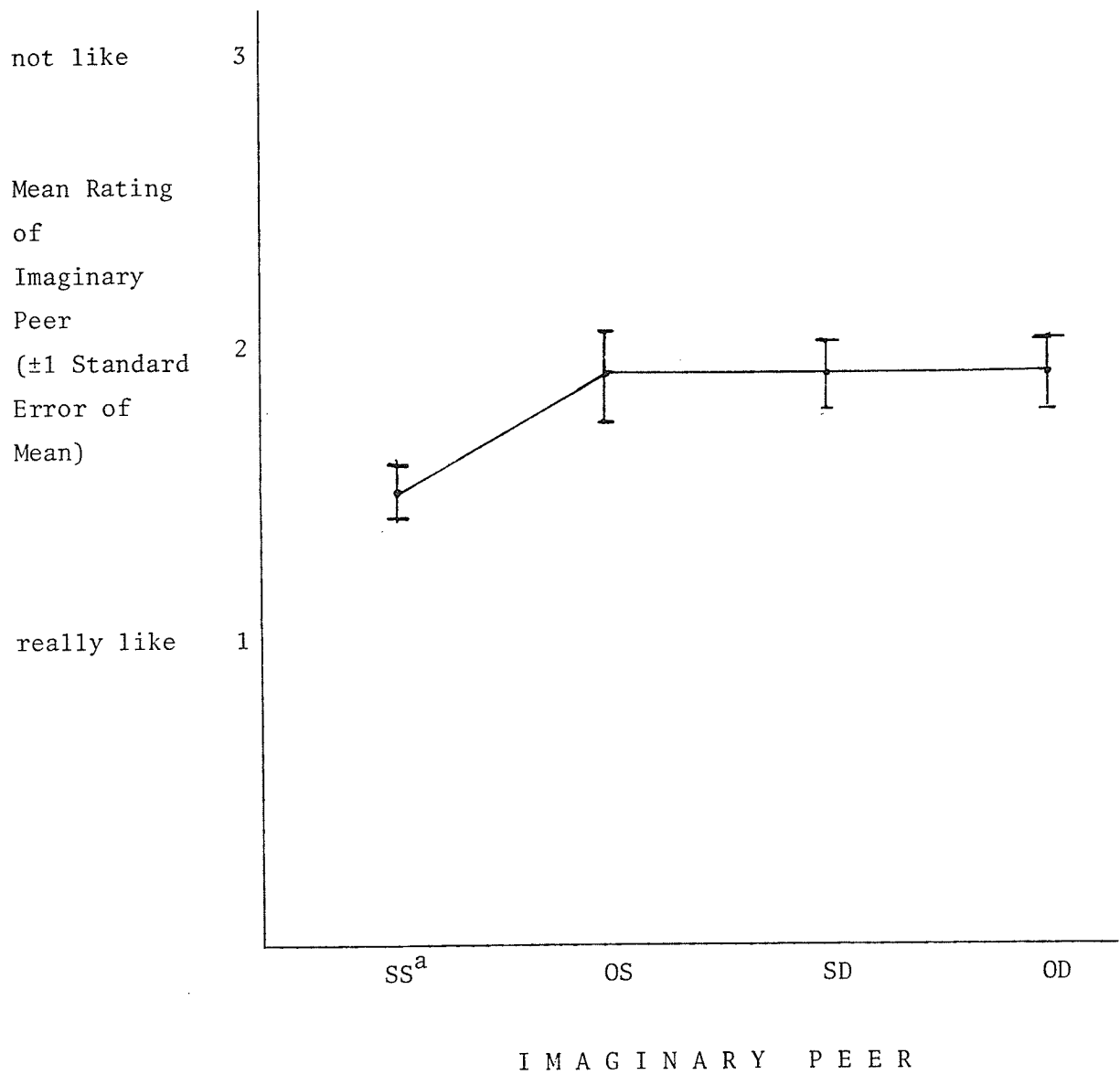
I M A G I N A R Y   P E E R

[a]SS = Same-Sex Similar

OS = Opposite-Sex Similar

SD = Same-Sex Dissimilar

OD = Opposite-Sex Dissimilar

basis for peer choice. Dependent variables for the within subject comparisons on the six imaginary peers (previous items plus the control stimuli) were transformed by the Helmert contrasts in Table 4A.

The multivariate ANOVA was significant F (5,40) = 2.64, p < .04, however, only one of the univariate tests was significant, Helmert A, where SS was preferred to the average rating of the other five peers, F (1,44) = 8.33, p < .01. This analysis corroborates previous results in that only ratings of same-sex similar peers differed from the ratings of other peers. The mean ratings for the six peers are presented in Figure 4. Figure 4 also high-lights the almost-significant Helmert D, F (1,44) = 3.62, p < .06, which reflects the difference in ratings for the OC and the mean SD and OD stimuli ratings. It seems plausible that the opposite-sex control peer would be disliked more than the same-sex dissimilar peer but implausible that it would be disliked more than the opposite-sex dissimilar peer. This would suggest that dissimilarity leads to attraction.

Since our original hypotheses about the importance of similarity across sex were not supported, supplementary analyses were designed to see if similarity had any effect within sex of rated child. Contrasts were performed to test five additional hypotheses: we expected that, within sex, similar imaginary peers should be most preferred and dissimilar imaginary peers least preferred. For same-sex stimuli, this would translate into the following order SS<SC<SD. For opposite-sex stimuli: OS<OC<OD. The same-sex hypotheses are represented in Helmert contrasts A and B in Table 5A; the opposite-sex hypotheses in contrasts C and D. Finally, we expected same-sex stimuli to be rated more positively than opposite-sex stimuli (contrast E). As with previous analyses, similarity

Table 4

Transformation and Analysis of Ratings of Six

Imaginary Peers (includes sex control stimuli)

A. WITHIN SUBJECT CONTRASTS

New Variable	ORIGINAL VARIABLE[a]					
	SS	OS	SC	OC	SD	OD
Helmert A	1.0	-.20	-.20	-.20	-.20	-.20
Helmert B	0	1.0	-.25	-.25	-.25	-.25
Helmert C	0	0	1.0	-.33	-.33	-.33
Helmert D	0	0	0	1.0	-.50	-.50
Helmert E	0	0	0	0	1.0	-1.0

B. MANOVA RESULTS FOR NEW VARIABLES

Source	MULTIVARIATE TESTS			UNIVARIATE TESTS	
	df	F	p	F[b]	p
Within					
Peer	5,40	2.64	.04		
Helmert A				8.33	.01
Helmert B				.33	.57
Helmert C				.82	.37
Helmert D				3.62	.06
Helmert E				.02	.86

[a]SS = Same-Sex Similar; OS = Opposite-Sex Similar; SC = Same-Sex Control; OC = Opposite-Sex Control; SD = Same-Sex Dissimilar; and OD = Opposite-Sex Dissimilar.

[b]Degrees of freedom were 1 and 44 for all Univariate F tests.

Figure 4. Mean Ratings for Six Imaginary Peers
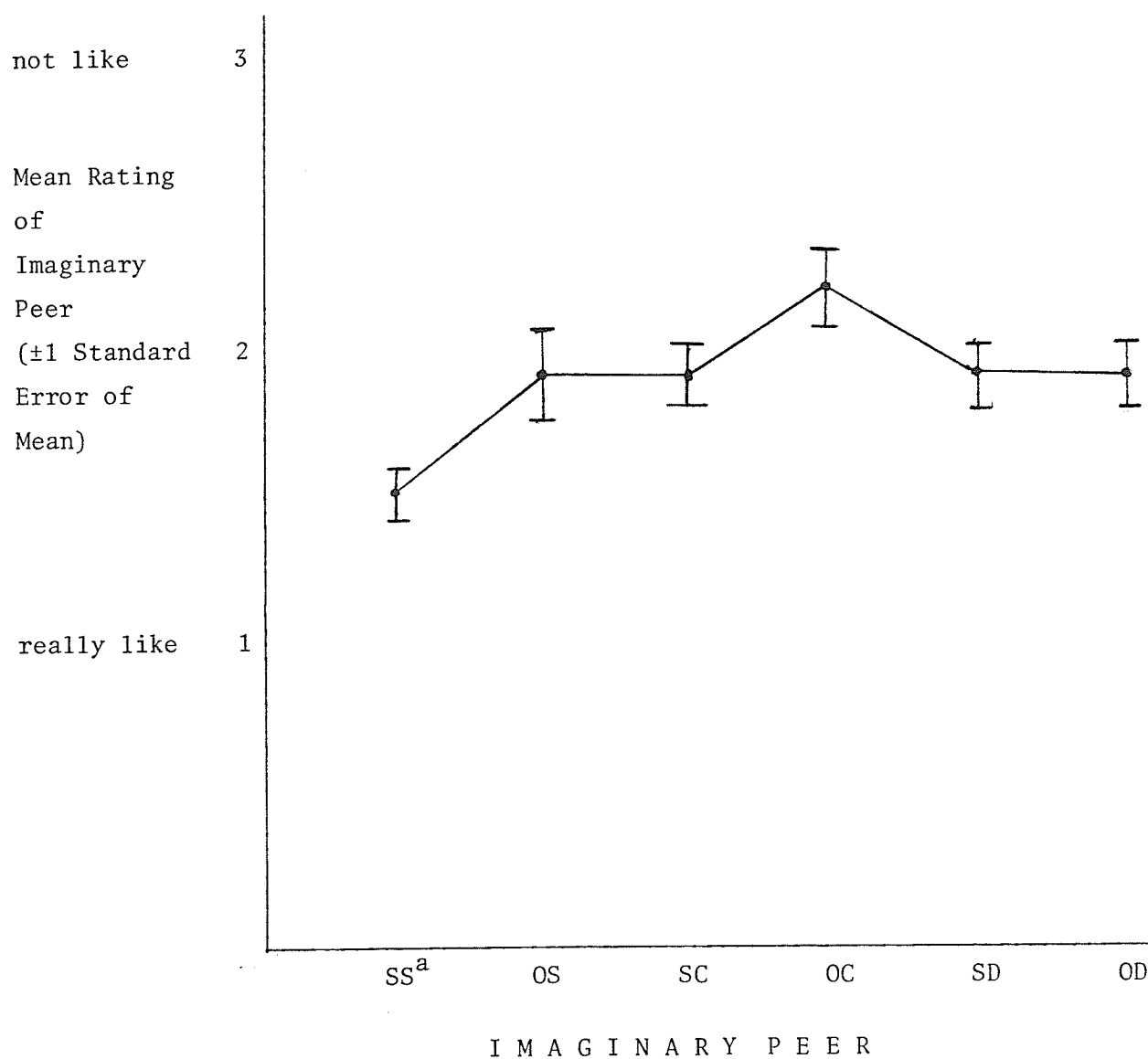
not like   3

Mean Rating
of
Imaginary
Peer
(±1 Standard   2
Error of
Mean)

really like   1

                 SS[a]   OS   SC   OC   SD   OD

            I M A G I N A R Y   P E E R

[a]SS = Same-Sex Similar
  OS = Opposite-Sex Similar
  SC = Same-Sex Control
  OC = Opposite-Sex Control
  SD = Same-Sex Dissimilar
  OD = Opposite-Sex Dissimilar

and sex of imaginary peers were within subject factors. Sex of rater

was between subject factor. Dependent variables were the ratings for

the six imaginary peers as transformed by Helmert contrasts in Table 5A.

The multivariate ANOVA for Peer, (within subject comparisons), was

significant, F (5, 39) = 2.6, p < .04. Univariate tests were significant

for contrasts A and E. For Helmert A, SS peers were preferred to the

average rating of SC and SD F (1,43) = 5.29, p < .03, and for Helmert E,

where the average rating of combined similar peers were preferred to the

average rating of combined opposite stimuli, F (1,43) = 5.79, p < .02.

Contrasts B, C and D were not significant. The multivariate ANOVA for

Peer x Sex interaction was not significant F (5,39) = 2.06, p < .10, but

the sexes did differ on Helmert E, F (1,43) = 8.24, p < .01 (see Table 5B)

on the univariate test. This finding corroborates previous results in

that males rated same-sex dissimilar peers less favourably than opposite-

sex dissimilar peers, while females reversed this pattern and rated

same-sex dissimilar peers more favourably than opposite-sex dissimilar

peers. The multivariate ANOVA for Sex (between subject factor) was not

significant, F (6,38) = 1.76. Figure 5 is a regraphing of Figure 4 to

illustrate the comparisons in this last analysis. The pattern for same-sex

peers suggests that similarity facilitates attraction and that

dissimilarity has no effect, at least compared to the no information

control. Results for the opposite-sex peers are more puzzling, because

both the similar and dissimilar peer are rated more favourably than the

no information control. If the data are reliable, the similarity

attraction notion is in some difficulty, at least for opposite-sex peers.

Table 5

Transformation and Analysis of Within-Sex Hypotheses

A. WITHIN SUBJECT CONTRASTS

	ORIGINAL VARIABLE[a]					
New Variable	SS	SC	SD	OS	OC	OD
Helmert A	1.0	-.50	-.50	0	0	0
Helmert B	0	1.0	-1.0	0	0	0
Helmert C	0	0	0	1	-.50	-.50
Helmert D	0	0	0	0	1.0	-1.0
Helmert E	.33	.33	.33	-.33	-.33	-.33

B. MANOVA RESULTS FOR NEW VARIABLES

	MULTIVARIATE TESTS			UNIVARIATE TESTS	
Source	df	F	p	F[b]	p
Within					
Peer	5,39	2.60	.04		
Helmert A				5.29	.03
Helmert B				.08	.77
Helmert C				1.09	.30
Helmert D				3.10	.09
Helmert E				5.79	.02
Peer x Sex	5,39	2.06	.10		
Helmert A				.30	.60
Helmert B				.06	.81
Helmert C				.02	.90
Helmert D				1.18	.28
Helmert E				8.24	.01
Between					
Sex	6,38	1.76	.13		
SS (Same-Sex Similar)				.94	.34
SC (Same-Sex Control)				2.74	.10
SD (Same-Sex Dissimilar)				1.46	.23
OS (Opposite-Sex Similar)				.09	.77
OC (Opposite-Sex Control)				.03	.87
OD (Opposite-Sex Dissimilar)				1.03	.32

[a]For listing of variable codes, see 5B, Source Between section
[b]Degrees of freedom were 1 and 43 for all Univariate F tests.

Figure 5. Mean Ratings for Same Imaginary Peers
vs. Opposite Imaginary Peers
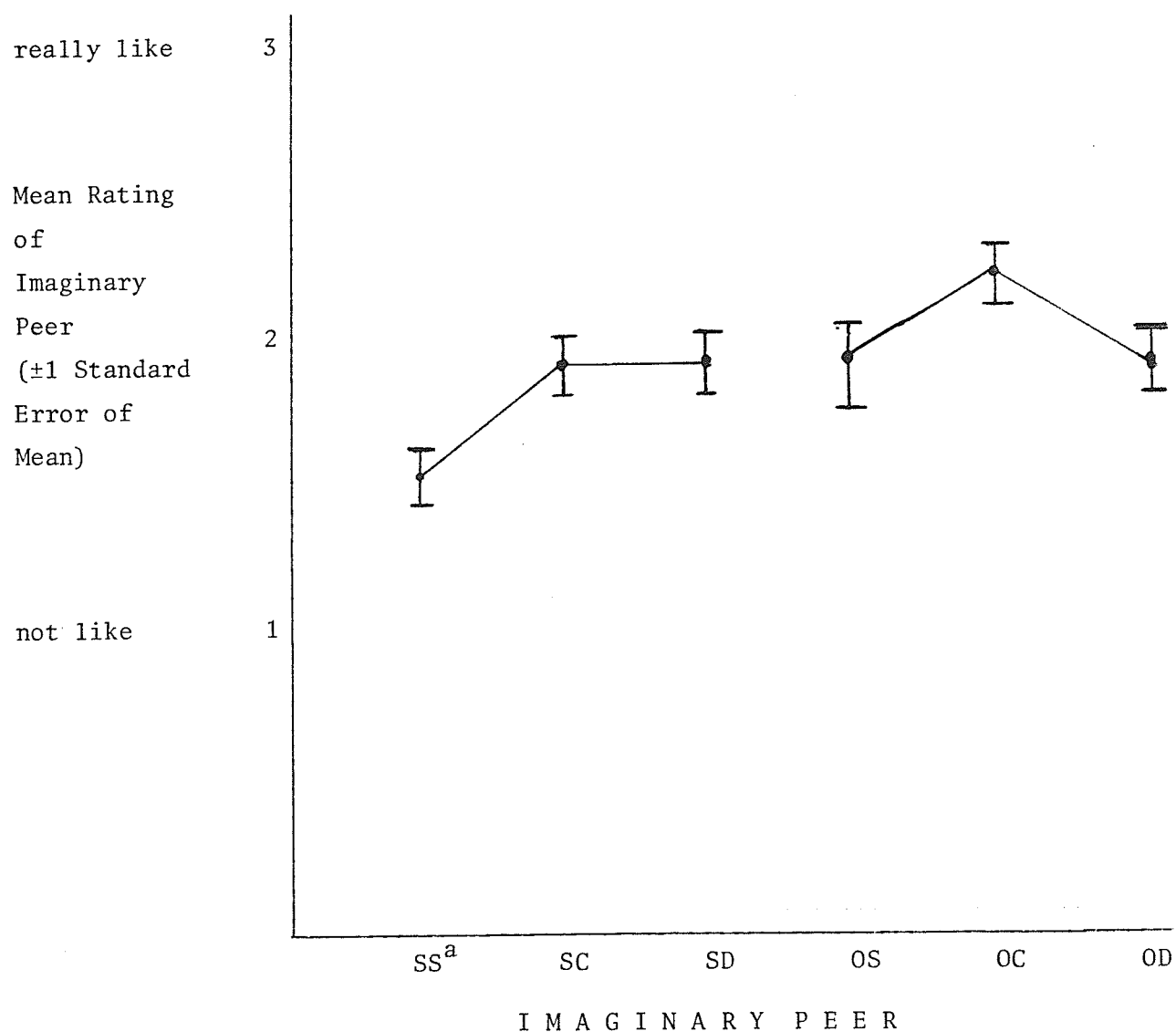
^{a}SS = Same-Sex Similar

SC = Same-Sex Control

SD = Same-Sex Dissimilar

OS = Opposite-Sex Similar

OC = Opposite-Sex Control

OD = Opposite-Sex Dissimilar

Discussion

The present study hypothesized, for a classmate rating task and a similarity experimental task, that a) same-sex peers would be rated more positively than opposite-sex peers, and b) similar peers would be rated more positively than dissimilar peers. For the similarity experimental task, children were also expected to prefer imaginary peers in the following hypothesized order (from most to least preferred): same-sex similar (SS), opposite-sex similar (OS), same-sex dissimilar (SD), opposite-sex dissimilar (OD).

Results for the classmate rating task were troublesome since same-sex peers were not rated differently than opposite-sex peers. Similarity as measured by toy preferences apparently did not influence children in selecting peers since no relationship between attraction and similarity was found. In the similarity experimental task, on the other hand, it was found that children's attraction to imaginary peers was related to the similarity of imaginary peers -- when the peer was of the same sex. Even this relationship was only partially supportive of expectations since dissimilar peers were rated as favourably as no-information controls. When the peer was of the opposite-sex, similar and dissimilar peers were both preferred to a no-information control. In general, same-sex peers were rated more favourably than opposite-sex peers. Results generally provided little support for the belief that similarity is more important as a basis for peer choice than is sex.

As expected, toy ratings followed typical sex-typed patterns,

(Connor & Serbin, 1977; DeLucia, 1963; Masters & Wilkinson, 1976).
Boys were found to prefer (as rated by parents) male stereotyped
toys and females to prefer female stereotyped toys. Parents may have
been rating their children's toy preferences with preconceived
stereotyped notions, and the results may reflect these notions rather
than an accurate assessment of children's preferences. Of course,
almost all observer-based ratings are subject to this validity problem.

In the classmate rating task same-sex peers were not preferred
to opposite-sex peers, but in the similarity experimental task they
were. This intertask inconsistency suggests either that children have
ceased to use gender as a basis for actual peer choice or that measures
were insensitive. Since previous research has repeatedly demonstrated
the existence of such differences, (Charlesworth & Hartup, 1967; Fagot &
Patterson, 1969; Jacklin & Maccoby, 1978; Kohlberg, 1966; Parten, 1933),
the latter possibility should probably be preferred. However, Bianchi
and Bakeman (1978) found that children are not inflexible in peer
preference, particularly when allowed the opportunity to interact with
opposite-sex peers. Since children in the present study had had the
opportunity to interact with each other prior to testing, it seems
possible that they were not attending primarily to sex as a basis for
their ratings. In the similarity experimental task, however, children
were faced with a hypothetical situation in which only sex and some toy
preferences of the imaginary peer was known. In this task, the children
had little other information, and it was found that sex was related to
peer choice. Taken together the results from the two tasks suggest
that when more information is received, sex no longer plays as crucial

a role in peer choice.

In the classmate rating task, similarity (as predicted from the questionnaire) failed to be a significant factor in peer choice. Before one concludes that similarity is not a factor in peer choice several factors must be examined:

Parents may have been inaccurate in their assessment of toy preferences. The resulting unreliability in the similarity coefficients would have led to a small or zero correlation with attraction.

Children's toy preferences may fluctuate over time. Parents assessed preference for toys prior to, or during, the first week their child attended Daycare. Testing of children could not be initiated until approximately three weeks after the children first met. If children's toy preferences fluctuate over time then it is possible that such a factor confounded results.

Another possibility is that these children may have been too young to differentiate between peers who play with preferred toys and those who play with nonpreferred toys. Or perhaps, the toys selected were all within an acceptable range. More extreme or atypical toys may have produced the desired effect but would that effect really apply to most children under normal circumstances? It may be that when children see others playing with toys that that in itself is enough of a factor for them to initiate interaction.

There is the likelihood that dimensions of similarity other than toy preference are operating in peer choice, and children may be focusing on these other dimensions. Sex and toy preference are but two measures of similarity in peer choice, and they may not be the most

salient dimensions for children of this age.

In the similarity experimental task children preferred same-sex similar peers to all other imaginary peers. When children are forced to focus on similarity and sex information, it appears that similarity information does indeed play some role in peer choice. I now believe that had other similarity factors (for example, activity level and personality information) been included along with toy preference information, greater differences between same-sex similar peers and other dissimilar imaginary peers would have been found.

A question arises as to why same-sex control peers were rated as favourably as same-sex dissimilar peers. Perhaps similarity is facilitating attraction but dissimilarity is not facilitating dislike. Put another way, similarity is enhancing preference for peers while dissimilarity is not detracting from preference for peers.

Another question to be considered is why opposite-sex control peers are less preferred than opposite-sex similar and opposite-sex dissimilar peers (whose ratings were virtually identical). In keeping with our hypothesis, it seems logical that opposite-sex similar peers would be more favoured than opposite-sex control peers. The problem arises as to why opposite-sex dissimilar peers are also more favoured than opposite-sex control peers. The possibility that this was a deviant data point exists, however the author has no reason to believe this the case. Perhaps children were focusing on the fact that while the imaginary peer was of the opposite-sex and dissimilar toy preference, the peer still enjoyed playing with toys. This being the case, the peer becomes more favourably rated since the child is still

receiving information about the peer. This leads the author to suspect that the children may have been taking the attitude that any information, similar or dissimilar, is better than no information.

The finding that dissimilar males were more disliked than dissimilar females - by both sexes - is intriguing and consistent with the general observation that the behaviour of deviant males is less acceptable than that of deviant females. Pants are fine for females but dresses are definitely discouraged for males - Scotland excluded.

Again the idea can be put forth that all the toys may have been acceptable to the child, and that had more extreme examples of toys been used, for example chess and bridge, the desired effect may have been produced. However the author doubts that such a finding would apply to most children under normal circumstances.

In concluding one cannot rule out the possibility of measurement problems. Perhaps a more accurate measure of similarity would have produced the desired outcome. The fact, however, that children preferred same-sex similar imaginary peers to all other stimuli leads the author to believe that similarity does play some role in peer choice. Hopefully, further research will clarify the issue of similarity and its role in peer choice of preschoolers.

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APPENDIX A

COPY OF LETTER AND QUESTIONNAIRE SENT TO PARENTS

U M

THE UNIVERSITY OF MANITOBA

DEPARTMENT OF PSYCHOLOGY

WINNIPEG, CANADA
R3T 2N2

October 1, 1979

Dear Parent:

As part of an ongoing research project on children's friendship patterns we would like to include your child in a study we are conducting. We're interested in how children's toy preferences affect their friendships, and we want to collect information both on your child's toy and peer preferences. The staff at the Education nursery school has kindly agreed to cooperate.

If you agree to participate, we will ask you to rate your child's preference for a set of 25 common toys. We suspect that children choose friends on the basis of shared toy preferences. Using your ratings of the toys, we will be able to determine how similar children are in their toys interests. We will individually ask each participating child to rate how much s/he likes to play with the other participating children at the nursery school. Head and shoulder snapshots of the children will be taken; and your child will be asked to sort the snapshots into one of three boxes. One box will be labeled with a happy face, a second with a neutral face, and a third with a sad face. Your child will be instructed to put the photo of another child into the box with the happy face if that child is a preferred playmate. If your child 'kinda' likes to play with the other child, s/he will be instructed to put the photo in the middle box. If your child does not like to play with the child in the photo, s/he will be asked to put the photo in the box with the sad face. In a second part of the project your child will be asked to rate several imaginery children in a similar procedure. The imaginary children will vary in the toys they prefer. Finally, we hope to ask your child to rate some of the toys listed on the enclosed questionnaire.

If you agree to participate, please fill out the permission slip below and the accompanying questionnaire as soon as possible. Return both to us in the stamped envelope. If you have any questions or concerns, please call me at 474-8260 or leave a message at 474-9338.

Sincerely,

WE/sw

Assistant Professor

Child's Name _____

Check one:
    I give   _____
    I refuse   _____   permission for my child's participation

Signed _____

Child's name _____

Now that you've agreed to participate, we would like you to rate the toys on a five-point scale. The scale ranges from 1 for least favored toys to 5 for most favored toys. It is important to use all of the categories in your rating. For example, be sure the least favored toy on the list gets a rating of 1 and the most favored toy gets a rating of 5. Other toys may also be rated with a 1 or a 5, but we suspect that many will fall between these extremes. If your child is unfamiliar with a particular toy, leave a blank for that row. We realize that it may be difficult to rate some of the toys; just do your best.

Thanks for your help. We'll send you a summary of the results when they are available.

Check one category for each toy:

	Least Favored 1	2	3	4	Most Favored 5
Airplane					
Balls					
Barrel of monkeys					
Beads					
Bells					
Blackboard					
Blocks					
Crayons					
Dollhouse					
Dolls					
Farm toys					
Football					
Looking at books					
Magnifying glass					
Marbles					
Musical triangle					
Painting or drawing					
Playdoh					
Play rings					
Puppets					
Puzzles					
Racing cars					
Toy telephone					
Tinker toys					
Trucks					

APPENDIX B

HEAD DRAWINGS OF IMAGINARY MALE AND FEMALE PEERS
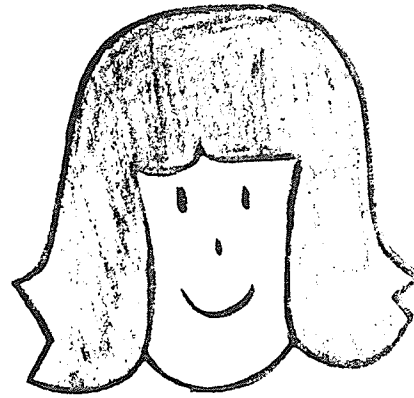
APPENDIX C

EXAMPLE OF SOCIOMETRIC RATING SCALE
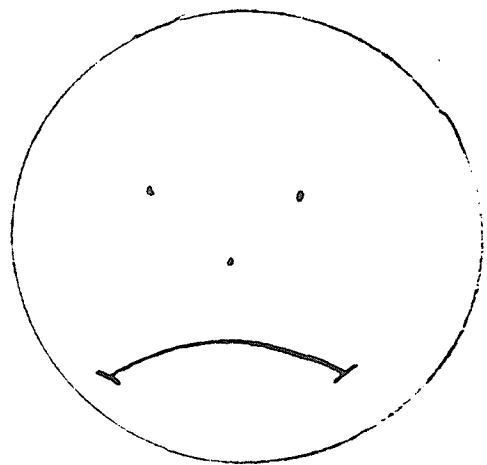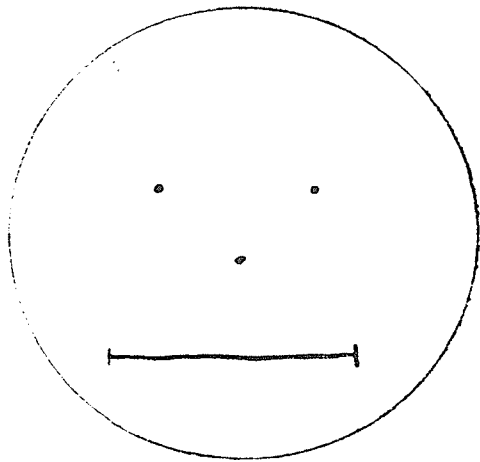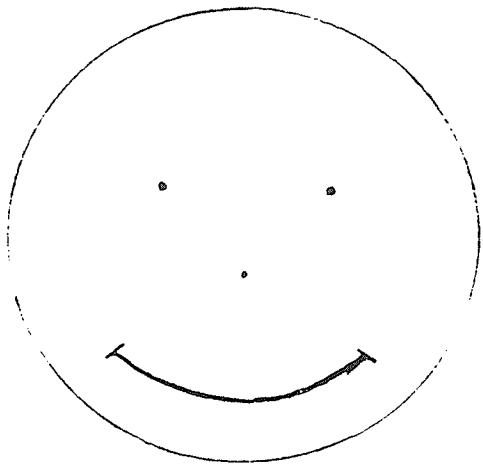
APPENDIX D

PICTURES OF FOOD
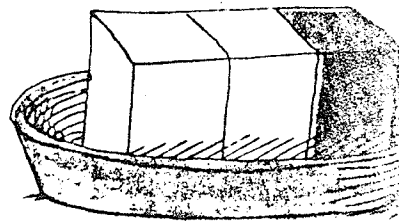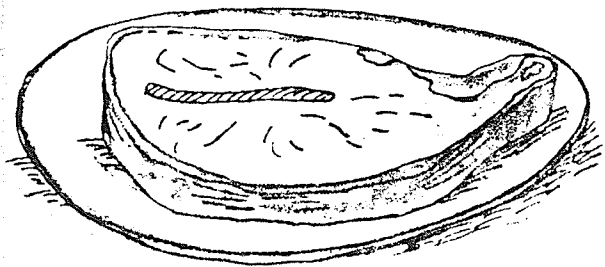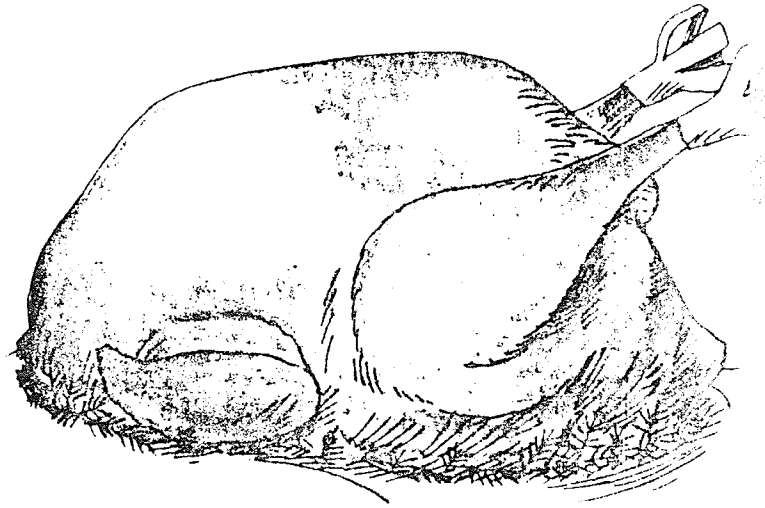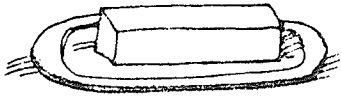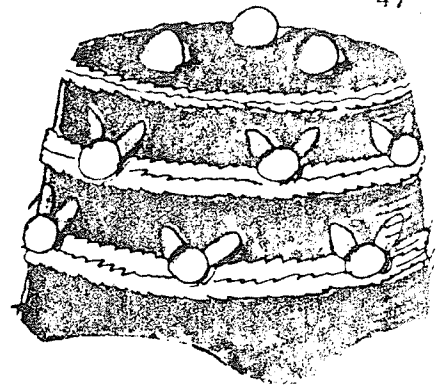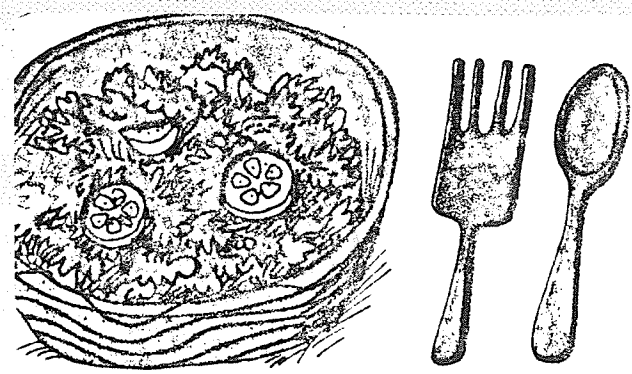
APPENDIX E

DISLIKE DATA SHEET FOR CLASSMATE RATING TASK

Preference Study
September, 1979

Subject _____

Date of Testing _____

Group_____

_____   _____   _____   _____   _____   _____

_____   _____   _____   _____   _____   _____

_____   _____   _____   _____   _____   _____

_____   _____   _____   _____   _____   _____

_____   _____   _____   _____   _____   _____

_____   _____   _____   _____   _____   _____

_____   _____   _____   _____   _____   _____
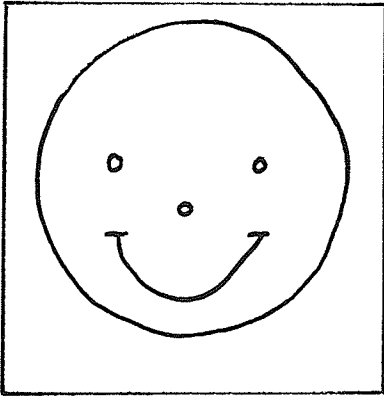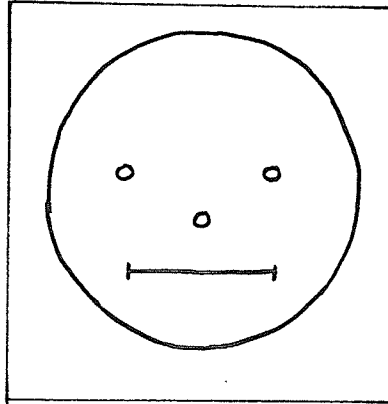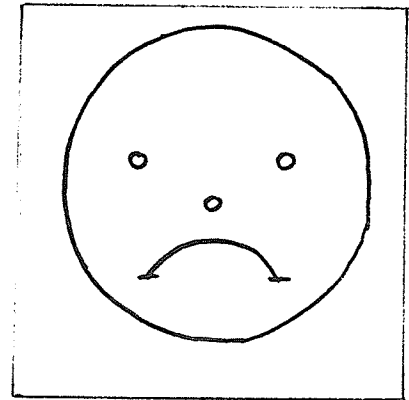
APPENDIX F

PICTURES OF TOYS FOR SIMILARITY EXPERIMENTAL TASK
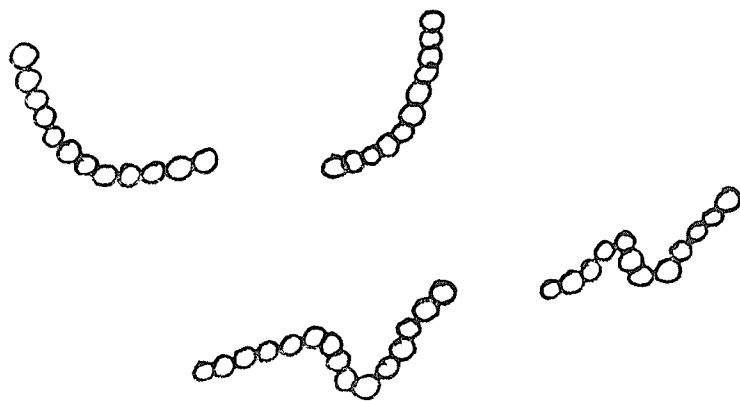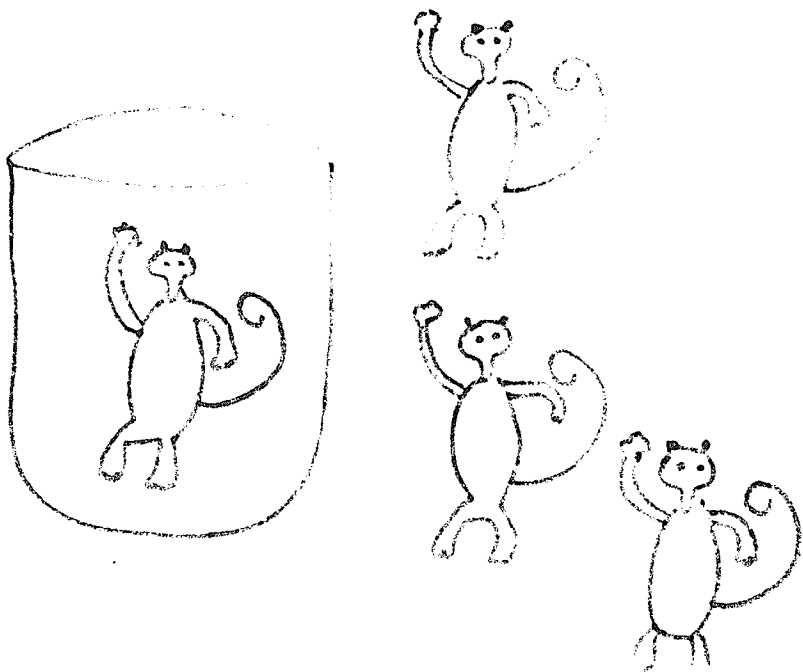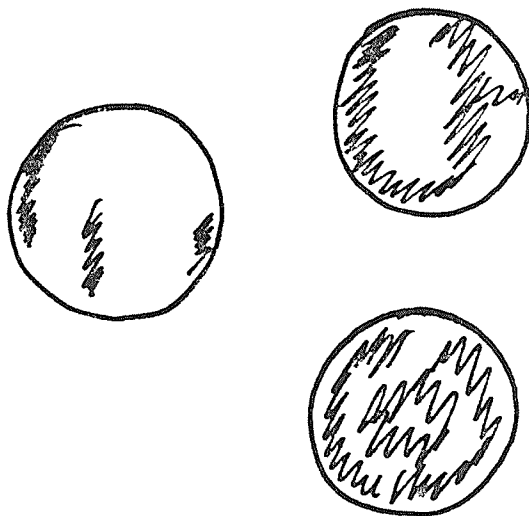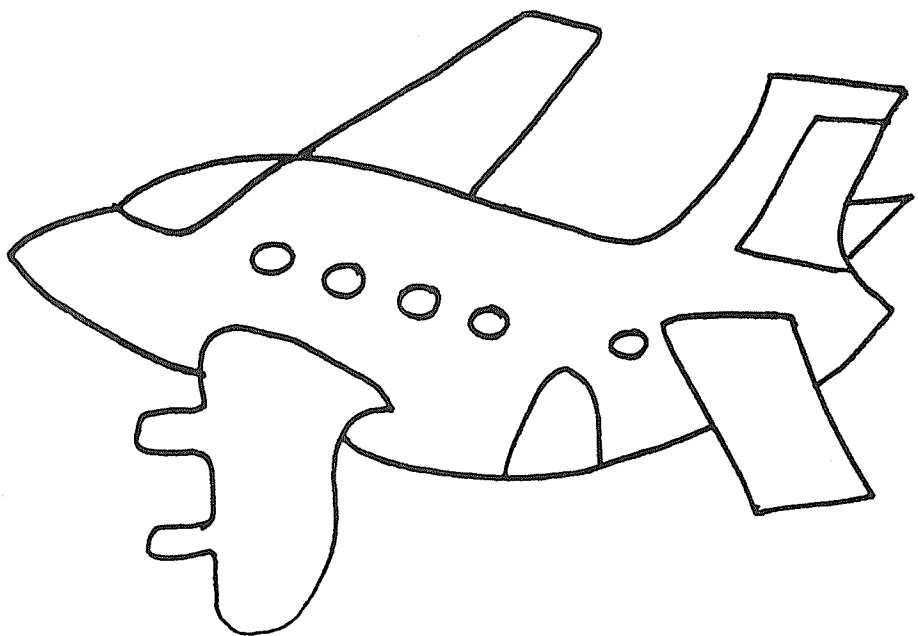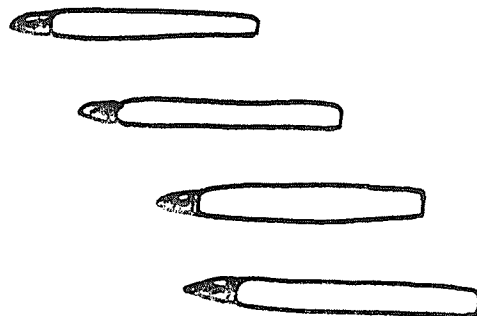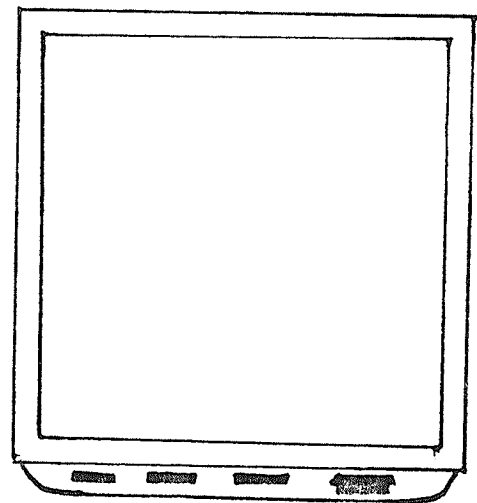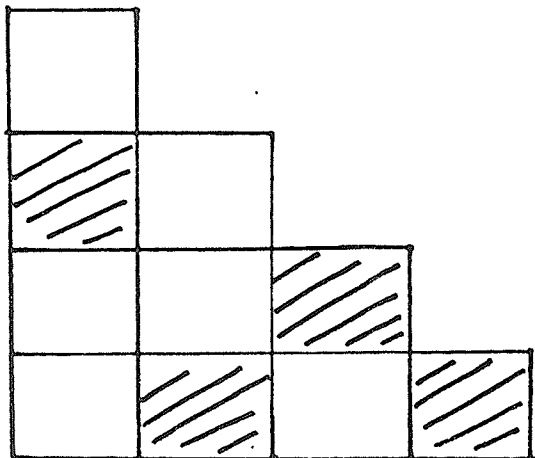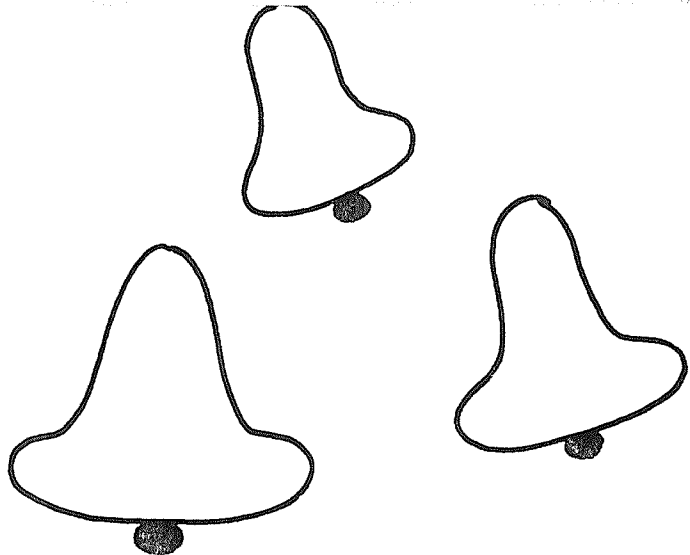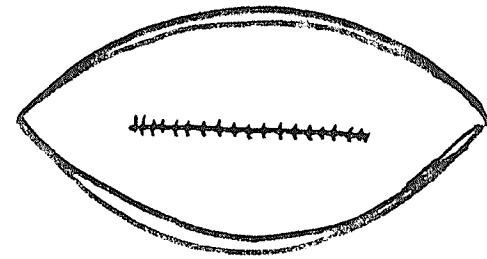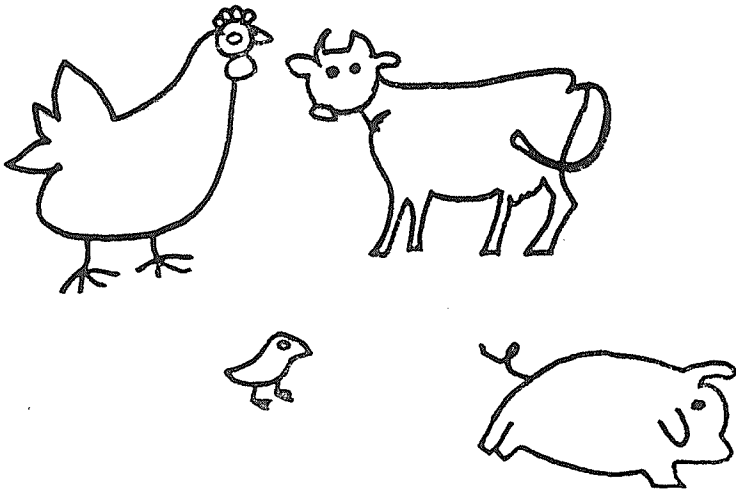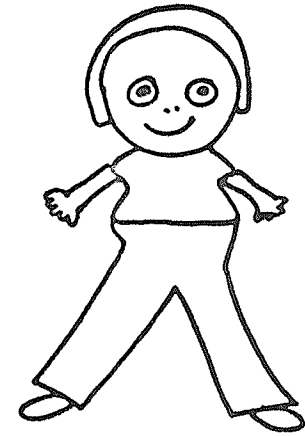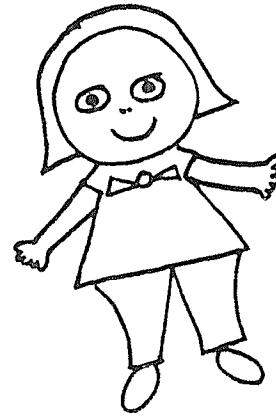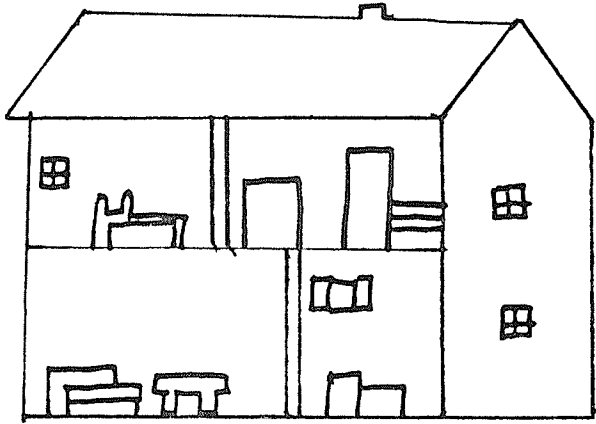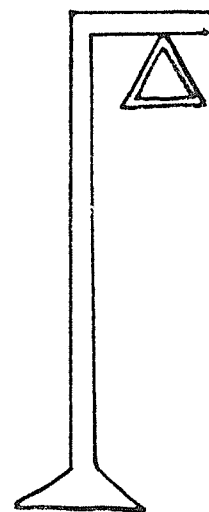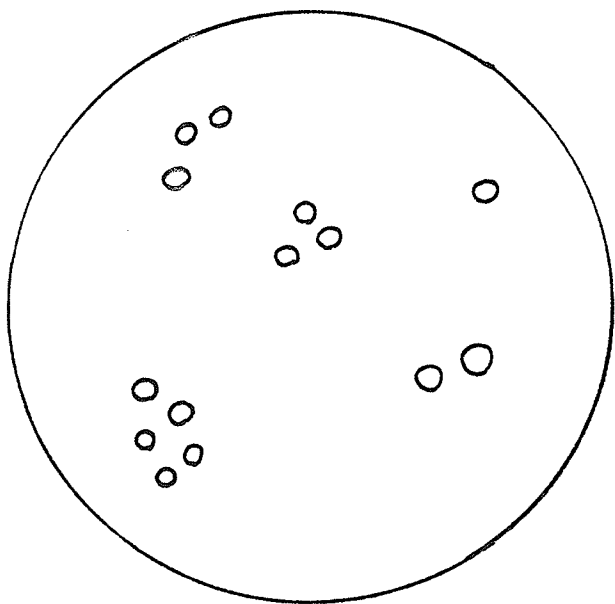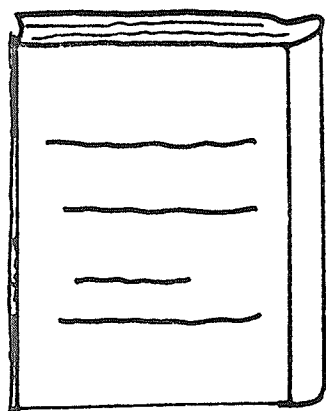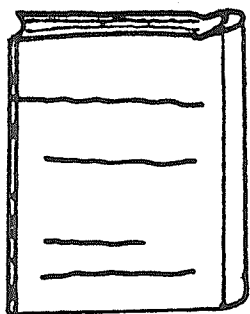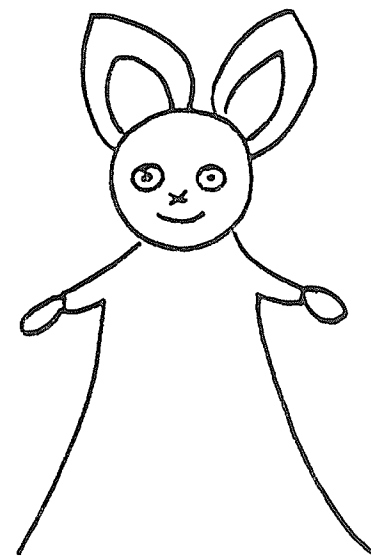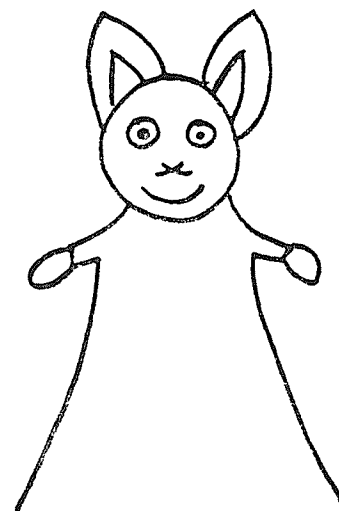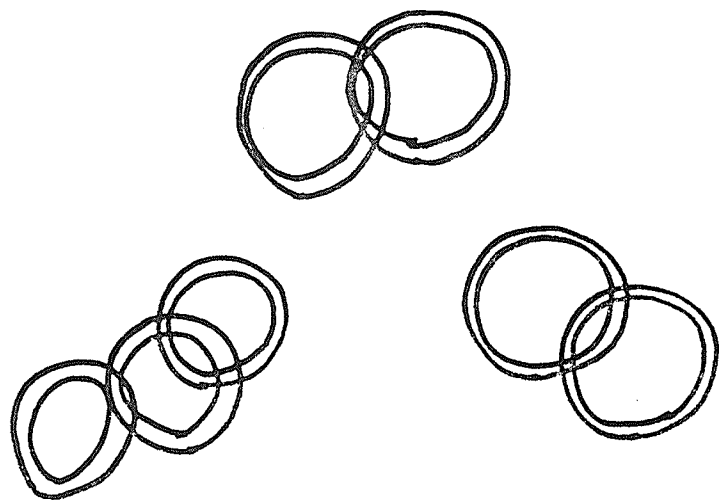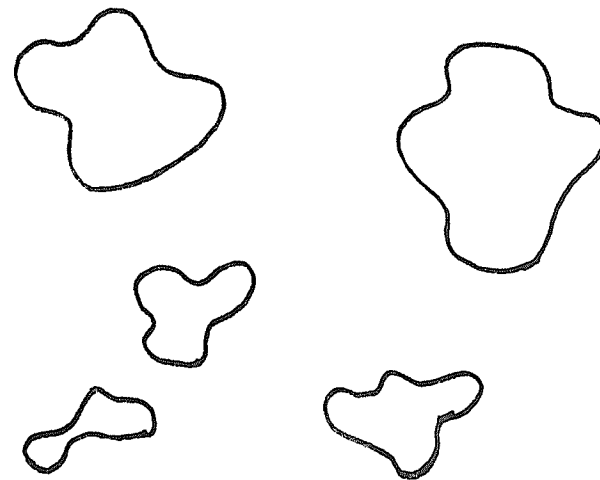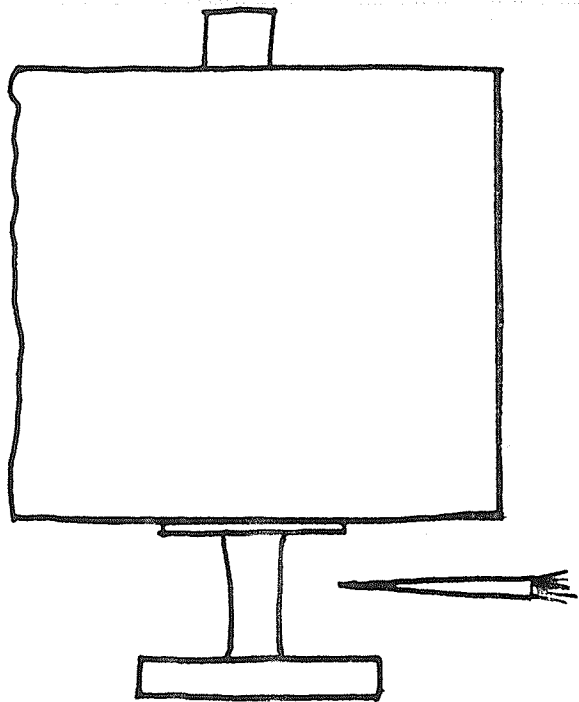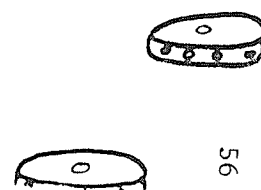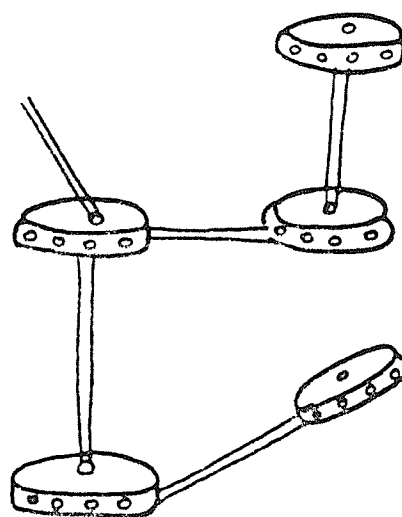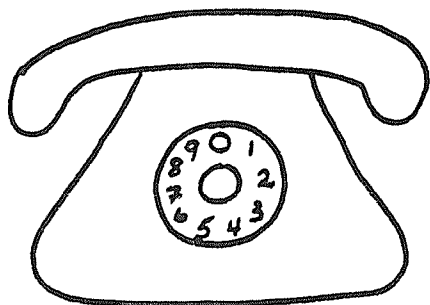
APPENDIX G

DISLIKE DATA SHEET FOR SIMILARITY EXPERIMENTAL TASK

Preference Study
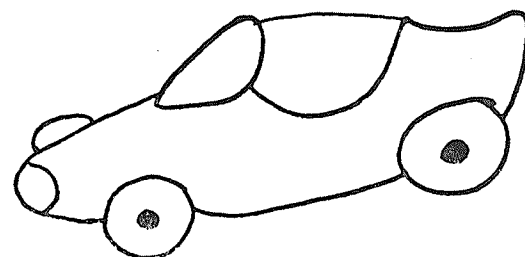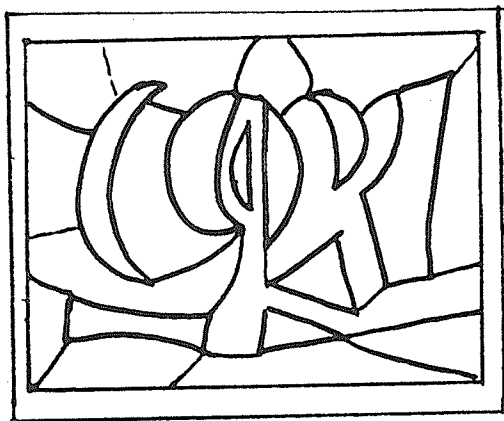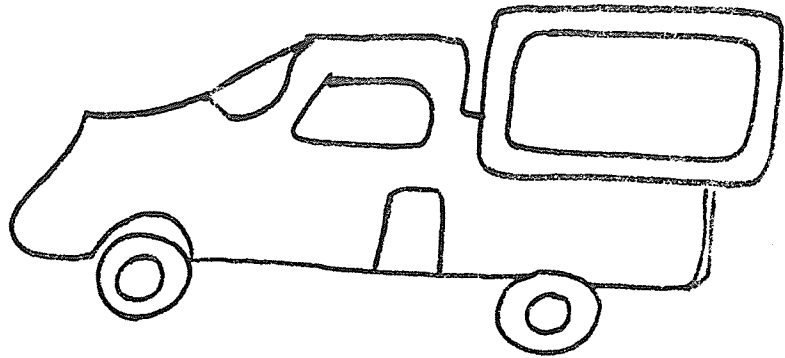September, 1979

Subject _____   Date of Testing _____

Group _____   Order Number _____

ORDER #