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POPULARITY IN PRESCHOOL CHILDREN: A COMPLEX PHENOMENON

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

In the Department
of
Psychology

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JULY 1985

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ABSTRACT

Although popularity in preschool-age children is of interest to developmental and clinical psychologists, the variables that influence popularity remain elusive, and the literature in this area is notable for its inconsistent and contradictory findings. The present study was designed to resolve some of these discrepancies. Teacher ratings of 135 preschool-age children on the following variables were obtained: physical attractiveness, body build, activity level, dominance, communication skills, the ability to take another's viewpoint, and the rate and quality of interactions with peers. Age, sex, and length of stay at preschool were also noted. Correlational and multiple regression analyses indicated that the relationships between the variables studied and popularity are complex, and may vary over time and setting. Two distinct interactional styles were identified as being important to popularity: one which was assertive, and one which involved more prosocial skills. Cluster analyses identified six homogenous groups of children of different popularity status: one very popular group of "Stars"; three average

groups: "Prosocial", "Assertive", and "Potentially Popular"; and two unpopular groups: "Neglected" and "Rejected". The differential representation of such subgroups across samples, and the influence of differing social ecologies among schools, may well be responsible for many of the inconsistencies reported in the literature on popularity.

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DEDICATION

This thesis is dedicated to my father Dr. Gordon Hobson, Professor of Psychology, who, with wisdom and humour, has always encouraged and supported me.

Introduction

Effective peer interaction is a central developmental task in the preschool years (Waters & Sroufe, 1983), and a child's popularity or peer group status is often used as an indicator of social adjustment or competence (e.g. Connolly & Doyle, 1981; Peery, 1979; Vaughn & Langlois, 1983; Wheeler & Ladd, 1982). Low status preschool children are often characterized as being socially incompetent and "at-risk" for adjustment problems in later life. Although the predictive validity studies (e.g. Cowen, Pederson, Babijian, Izzo & Trost, 1973; Roff, Sells & Golden, 1972) on which this view is based have been conducted exclusively with elementary school-age children, the at-risk hypothesis has been used to justify intervention programs with preschoolers (e.g. Furman, Rae & Hartup, 1979; Greenwood, Walker, Todd, & Hops, 1979).

Despite the undisputed developmental and clinical importance of popularity, its correlates remain elusive and complex, and it is currently not at all clear which characteristics of children are associated with status (Allen, 1981). Numerous investigators have singled out particular social and cognitive skills, patterns of behaviour, and global characteristics hypothesized to be

correlates of popularity, and then related these with various measures of peer group status. Overall, results have been inconsistent.

Social-cognitive Skills

The relationship between a young child's popularity and his or her ability to take another's affective or cognitive point of view has been studied in some depth. Much of this research stems from Piaget's (1926) hypothesis that childhood egocentrism is overcome by way of peer interaction. Investigators have thus hypothesized that children who are better able to take another peer's viewpoint into account will be more popular. A number of terms have been employed, including empathy (Marcus, 1980; Rubin & Maioni, 1975), social acuity (Marcus, 1980), communicative egocentrism (Rubin, 1972; Deutch, 1974), referential communication, and social awareness (Krantz, 1971). Tasks used to measure this ability have been equally diverse, ranging from Borke's (1971) emotion attribution task (Krantz, 1982; Rubin & Maioni, 1975) to teacher ratings (Marcus, 1980), and tests of spatial role-taking ability (Goldman, Corsini & deUrioste, 1980; Krantz, 1971; Rubin, 1972; Rubin & Maioni, 1975). Not surprisingly, conflicting findings have been reported. While Rubin (1972), Rubin and Maioni (1975) and Marcus (1980) found significant positive correlations between positive sociometric status and their measures, Deutch

(1974), Goldman et al.(1980), and Krantz (1982) did not find any such relationships.

Although performance of many of these tasks is also affected by the child's ability to commmunicate, other researchers have focussed exclusively on the correlations between popularity and various communication skills. Galejs, Dhawan and King (1983), for example, reported significant correlations between teacher rankings of popularity, age, and measures of "listening" and receptive vocabulary, but not between popularity and a measure of expressive language.

Quality and Rate of Interaction

A fairly large body of literature has also been devoted to the study of the relationship between popularity and both the quality and rate of a child's interactions with peers. A number of these studies have been based on reinforcement theory. Hartup, Glazer and Charlesworth (1967), for example, reported that popularity was highly correlated with the rate of dispensing "positive reinforcement", defined as attention, approval, affection, acceptance and submission. Masters and Furman (1981) found only moderate correlations between popularity and the giving and receiving of positive reinforcement, however, and reported that popularity was more directly related to overall rates of "receiving and dispensing neutral acts", such as general conversation, associative play and

imitation.

In other studies of children's interactions, McCandless and Marshall (1957) reported a high correlation between popularity and friendly approach and behaviour, and Moore and Updegraff (1964) found a strong correlation between popularity and the amount of "nurturance" (defined as attention, affection, reassurance and protection) offered to peers. In studies with elementary school children, Putallez and Gottman (1981) compared the dyadic interactions of popular and unpopular children and found popular children to be more agreeable than their less popular peers. Vaughn and Waters (1981), however, reported that popular preschoolers were involved in many aggressive and competitive encounters as well as prosocial interactions, suggesting that correlates of popularity are not necessarily limited to the realm of prosocial behaviour, at least not among younger children.

Research has also focussed on the relationship between popularity and rate-of-interaction per se, regardless of its quality. It has been widely suggested that popularity is associated with a high degree of peer interaction (Rubin & Maioni, 1975), and, conversely, that children who interact with peers at a rate below a certain level are "at risk" in their peer relations (see Asher, Markell & Hymel, 1981, for a detailed review). This "rate-of-interaction" criterion has thus been widely used to identify and select

children in need of intervention, although studies of the relationship between interaction rate and peer group status have differed in their findings (Asher et al. 1981). Low rates of peer interaction in early childhood, for example, have been found to correlate negatively with peer popularity in some studies (e.g. Goldman et al., 1980; Krantz, 1982; Greenwood et al., 1979) but not in others (e.g. Gottman, 1977; Deutch, 1974).

Dominance and Activity Level

Several researchers (e.g. Abramovitch & Grusec, 1978; Vaughn & Waters, 1981; Waters, Gornal, Garber & Vaughn, 1983) have studied children's group structure in terms of the distribution of visual attention (the amount of time each child is watched by peers). Results of some of these studies suggest that more popular children might be more dominant and active than their less popular peers. Abramovitch et al. (1978), for example, found high, positive correlations between visual attention and teacher rankings of dominance. The authors proposed that the attention measure was identifying those children who were most influential in the group. They speculated that those children were viewed by peers as being reliable sources of information about appropriate and interesting behaviour in which to engage. These authors also suggested that the children who received more attention were generally more active in all spheres of behaviour. Subsequent studies

reported high correlations between visual attention and sociometric popularity (Vaughn & Langlois, 1983; Vaughn & Waters, 1981), and moderately high correlations between visual attention and overall activity and energy level (Waters & Sroufe, 1983). Vaughn and Waters (1981), however, did not find dominance to be strongly related to either visual attention or sociometric status.

Physical Characteristics

Many researchers state that stimulus variables, such as physical attractiveness and body build, partly account for the degree to which a child is accepted by his or her peers. Research has indicated that very young children have already begun to adopt social values regarding different body types, such as an aversion to chubbiness (Lerner & Gellert, 1969). They have also begun to exhibit stereotyping based on facial attractiveness (Dion, 1972), showing a preference for unknown attractive children as potential friends and a corresponding dislike of unattractive children.

Physical attractiveness (as rated by adults) has been found by some to correlate significantly with popularity in preschool children, more so for girls than boys (Vaughn & Waters, 1983). Dion (1972), however, suggested that facial attractiveness may be equally desireable for boys and girls at the preschool level, and Dion and Bercheid (1974) found that young unattractive girls were significantly more

popular than their attractive peers. With age, however, the popularity of the unattractive girls declined, while that of their attractive peers increased, and by six years of age, attractive girls were found to be significantly more popular than unattractive girls. No corresponding increase or decline across age levels was found for attractive and unattractive boys. The relationship between popularity and physical attractiveness at the preschool age has not yet been consistently explained. Similarly, the role of attractiveness in influencing other variables remains unclear. Dion and Berscheid (1974) reported that unattractive children, particularly males, were perceived by their peers as exhibiting more negative social behaviours. Styczynski and Langlois (1977), however, found that attractive children, particularly boys, were rated as more antisocial and were disliked more than unattractive children by acquainted peers. Langlois and Downs (1979) found that more attractive children engaged in aggressive or highly active play less than unattractive children. They observed no differences, however, in the affiliative behaviours (proximity, touching, smiling, eye contact) of the attractive and unattractive children, and attractiveness was not associated with any differences in behaviour found in the youngest children (three years old).

Age

A variable that has received surprisingly little attention is age. Significant positive correlations have been reported between children's chronological ages and popularity (Galejs et al., 1983; Goldman et al., 1981; Connolly & Doyle, 1981), referential communication (Goldman et al., 1981) and percentage of positive interactions with peers (Goldman et al., 1981; Charlesworth & Hartup, 1966). Neither Moore and Updegraff (1964), nor Quay and Jarrett (1984), however, found significant correlations between age and popularity. While there was only an eight month age span among the children in Moore and Updegraff's (1964) study, ages ranged from three to six years old in that of Quay and Jarrett (1984).

Sources of Inconsistency in the Literature

This review of the literature indicates that the factors primarily responsible for causing or contributing to a child's popularity have yet to be consistently identified. This is of particular concern in view of the fact that some children targetted for intervention programs have been chosen on the basis of assumptions about peer group status that have yet to be adequately substantiated. There may be several reasons for the lack of agreement in this area. Connolly and Doyle (1981) suggested that features of the widely used sociometric methodology are

themselves quite possibly responsible for certain difficulties. Many of the abovementioned studies (e.g. Deutch, 1974; Greenwood et al., 1979; Krantz, 1982; Rardin & Moan, 1971; Rubin, 1972) have employed the picture-board positive nomination technique of assessing popularity developed for preschool age children by McCandless and Marshall (1957), in which each child is asked to point to the pictures of a certain number of best-liked playmates. Fewer investigators (e.g. Moore & Updegraff, 1964; Dion & Bercheid, 1974; Gottman, 1977; Masters & Furman, 1981) have included negative choices, where children are asked to nominate disliked as well as liked peers.

A growing concern about sociometric nomination techniques in general involves the reliability of these measures when used with preschool age children. Although numerous studies have been conducted on the utility, reliability and validity of such techniques (see Asher et al., 1981), much of this research has involved older children of elementary school age. Hymel (1983) observed that nomination measures do not provide a reliable method of assessing preschool children's peer group status. Rubin and Daniels-Beirness (1983) further suggested that correlational studies based on such measures may in fact provide inaccurate assessments of the relationships between popularity and a variety of potential correlates.

Two additional sociometric measures recommended as

reliable alternatives to the nomination procedure (Hymel, 1983) are the rating-scale (e.g. Asher, Singleton, Tinsley & Hymel, 1979; Goldman et al., 1981; Rubin, 1982) and paired-comparison (Vaughn & Langlois, 1983; Vaughn & Waters, 1981) techniques. Until recently, however, these alternatives have been employed infrequently. Each of the three sociometric procedures varies considerably across a number of dimensions (e.g. task instructions, number and type of playmate choice requested, scoring criteria). Generalizations about these measures can therefore be misleading without consideration of the specific method employed (Hymel, 1983).

The consensus of results from different studies of popularity is further limited by the use of different techniques to measure the hypothesized correlates of popularity. Although these variables are often complex and subtle (e.g. "the ability to take another's viewpoint"), the measures used to estimate the extent to which a child possesses the characteristic or skill in question are often based on specific tasks in laboratory settings. This use of a variety of different techniques in different studies to measure variables that have the same or similar names has led to some estimations of these variables that are imperfect and superficial. These, in turn, have added to the general confusion.

Another source of inconsistency in the literature may

be the complex nature of peer group status itself. It is likely that children having different, yet equally effective (or ineffective) combinations of skills and characteristics may achieve similar popularity status. Thus the presence of subtypes of popular and unpopular children within a sample may make results of correlational analyses somewhat misleading.

Purposes of the Present Study

This investigation had two main objectives. One was to provide a broad-based composite picture of the interrelationships among preschool children's popularity, age, physical attractiveness, body build, activity level, dominance, communicative skills, ability to take another's affective and cognitive viewpoint, and rate and quality of interactions with peers, as measured by teacher ratings. Situational factors, such as the length of stay of the children at their respective preschools, the size of the group and the ratio of boys to girls were also included. Although many of these variables have been investigated singly, or several at a time, there has been no attempt to examine all of the hypothesized correlates of peer group status simultaneously with the same sample of children. Nor has the relative contribution of each of these variables to the prediction and explanation of popularity been assessed. One reason for this is doubtlessly the enormity of such an undertaking using any combination of

the sociometric, laboratory or observational procedures. The present study thus employed teacher ratings, as there is empirical evidence to suggest that teacher judgements are an inexpensive and efficient method of obtaining valid and reliable data (see Connolly & Doyle, 1981). Moreover, they have been successfully employed to assess preschool popularity (e.g. Connolly & Doyle, 1981; Galejs et al., 1983; Greenwood et al., 1979; Marcus, 1980), as well as social competence (e.g. Connolly & Doyle, 1981; LaFreniere & Sroufe, 1985; Rubin, 1982), dominance (Abramovitch et al., 1979) and empathy (e.g. Marcus, 1980).

The second goal of this investigation was to identify, on the basis of similarities among scores on the set of variables, homogenous subgroups of children of high, medium and low popularity status. Several researchers have already attempted to develop classification schemes based on positive and negative sociometric data. Peery (1979) developed a system based on two different combinations of acceptance and rejection scores: "social impact" (acceptance plus rejection scores) and "social preference" (acceptance minus rejection scores). From this model, Peery identified four distinct groups of children: popular, rejected, amiable and isolated. Coie, Dodge, and Coppotelli (1982) identified five different groups of children in their data: popular, rejected, neglected, average, and "controversial" (many positive and negative

nominations). Both systems have documented shortcomings, however (Hymel, 1983; Newcomb & Bukowski, 1983), and are also based on preschool sociometric nomination data. Their applicability is thus considered by some to be "questionable" (Hymel, 1983). They also provide limited information on the characteristics of children in popular and unpopular groups; far less than would be afforded by profiles compiled from measurements on a number of variables.

Hypotheses

On the basis of both the literature reviewed and a pilot study conducted by the author in one preschool class, the following hypotheses were proposed:

1. More popular children would receive more favorable ratings on all variables. They would thus be perceived by the teachers as more agreeable with peers, active (but not excessively so), communicatively skillful, socially perceptive, and physically attractive. They would interact more frequently with peers. They would be older and would have attended their respective preschools for a longer period of time. They would not be rated as being particularly endomorphic or ectomorphic in build.

2. Dominance ratings would be the most powerful predictor of a child's popularity.

3. These results in the pooled sample would be similar for each school, and for each sex when analyzed separately.

4. Multivariate classification procedures would identify several homogenous subgroups of popular (average and above) and unpopular children within the sample. The popular groups would not necessarily have high scores on all variables. Rather, they would have high scores on some variables, but may have lower scores on others. The unpopular children would fall into two groups: those who had fairly low scores on all variables, and those children who may or may not have low scores on many of the variables but who would be distinctly disagreeable.

Method

Subjects

Ratees. One hundred and thirty-five predominantly middle-class children (74 girls, 61 boys) between the ages of three and six years served as subjects for this study. These children were enrolled in seven preschools in the Greater Victoria area. There were no systematic socioeconomic status or ethnic differences among the seven centres.

Raters. Twenty-seven preschool workers (24 women, 3 men) volunteered as raters. Ages ranged from approximately 20 to 50 years. All teachers had known the children in their preschool for at least two months (two raters only), and most had known the children for between nine months and three years.

The numbers of girls, boys, and raters in each school are shown in Table 1.

Setting

All seven centres had approximately the same layout, with large main playrooms indoors divided into several play areas. The outdoor areas contained sandboxes and climbing apparatuses. The daily routines were similar in all seven centres.

Table 1

Numbers of Girls, Boys and Raters in Each School

School	Boys	Girls	TOTAL	Raters
1	11	12	23	4
2	7	10	17	4
3	15	9	24	4
4	5	10	15	2
5	10	11	21	5
6	6	10	16	3
7	7	12	19	5
TOTAL	61	74	135	27

Procedure

Development of rating scales.

The first stage of this investigation involved the development of rating scales for the variables of interest. Definitions and cues were initially adapted from the literature on popularity, social competence, and rating methodology (Landy & Farr, 1980) and then modified in consultation with twelve professional preschool and daycare

supervisors. Examples of actual rating scales and cues are presented in Appendix 2. The variables were defined as follows. (Authors used as sources are noted in brackets at the end of each definition):

1. Agreeableness: the extent to which the child is pleasant and cooperative with other children, and easy for other children to get along with (Putallez & Gottman, 1981).

2. Activity level: the overall frequency and intensity of the child's energy expenditure and movement (Waters & Sroufe, 1983).

3. Communicative ability: the extent to which the child is able to express him/herself to other children; make him/herself understood, communicate thoughts, needs and wishes to the other children successfully (Gottman, Gonso & Rasmussen, 1975).

4. Rate of interaction: the overall amount of interaction the child has with other children in an average day, including all interchanges - verbal and nonverbal, positive and negative (Charleworth & Hartup, 1967).

5. Dominance: the child's influence in the group; the degree to which the child gets others interested in what he/she is doing; organizes and maintains play activities among other children; commands cooperation and attention (Hold, cited in Vaughn & Waters, 1981; Kohn & Rossman, 1972).

6. Social perceptiveness: the extent to which the child shows recognition and understanding of other children's feelings, thoughts and points of view that are different from her or her own (Waters & Sroufe, 1983).

7. Physical attractiveness: the extent to which the child's physical appearance is considered to be attractive and appealing (regardless of the child's personality or behaviour). Two studies suppport the use of teacher judgements for this variable. First, Cross & Cross (1971) found that judges from four different age-groups (seven years to adult) did not differ significantly on their ratings of attractiveness. The authors suggested that one could extrapolate downward on the age continuum. Secondly, LaFreniere and Charlesworth (cited in Vaughn & Langlois, 1983) reported positive and significant correlations between physical attractiveness ratings made by adults acquainted with the children and those unacquainted with them.

8. Body build: Lerner and Gellert's (1969) rating scale was employed. The body build of each child was thus rated as predominantly: 1)fat or chubby 2) chubby to average 3) average 4) thin to average 5) thin and linear.

9. Popularity: the extent to which the child is sought after, well-liked, and admired by other children (McCandless & Bennet, 1961; Waters & Sroufe, 1983).

During the development of the rating scales, particular

attention was given to the clarity, appropriateness and number of cues in each scale, as well as the choice of a format that would be most convenient and efficient for busy volunteer raters. There are data to suggest that there is little utility in adding scale categories beyond five, and that reliability drops with three categories or less (see Landy and Farr, 1980 for a detailed review). Furthermore, Bavelas and Smith (1982) noted that a standard rating scale, such as a 7-point Likert scale, having cues corresponding to each number, provides a complex and unnatural task for the rater, who is required to "pay careful attention to stimuli and dimensions and also use an unfamiliar and restrictive means of expression".(p. 217) These authors proposed an alternative method of scaling based on mathematical psychophysics, in which physical length is used to express quantitative judgements. The lines do not contain any numbers or intervals, and only the end points are labeled. Thus, exactly where the line is marked indicates how much of, for example, a certain characteristic the child displays. A modification of this method was employed in the current study. A separate rating "sheet" was constructed for each school for every scale. The definition of the variable was placed at the top of the sheet. Below this was a 150 cm. line with behavioural (where appropriate) cues at each end and at two equidistant points within the line. Underneath this, the

first names of all the children (whose parents had agreed to their participation) were listed. Beside each name was a 150 cm. line with intervals marked off (but no cues). The names were ordered randomly and placed in a different order for each scale. Serial position of ratees may have some effect on ratings, although no general pattern has emerged from the research to date (Landy and Farr, 1980). No numbers were included, and the distances were measured off by the experimenter after all the data were collected.

Rating procedure.

The second stage of this project involved the instructions to teachers and the distribution of rating scales. Each of the 27 teachers was taken aside individually, instructed in the use of the scale and shown an example. This information was then left with each teacher in a written form (see Appendix 1). They were told that ratings were to be based on their overall impression of each child, i.e. not on how a child behaved on any one day. They were also asked not to consult with any of their colleagues about the rating. The teachers, while given an outline of the study, were not told specifically that it was about "popularity" until the end of the data collection.

The scales for the predictor variables were completed within a four week period. They were distributed and collected at intervals of two to three days. The

popularity scale was not given until all other measures (except the body build scale) had been completed and a period of three to four days had elapsed. Lerner and Gellert's scale (for body build) was given at the very end because it was of a different format (i.e. raters were to circle one of five categories rather than just put a mark on the line), and therefore potentially confusing if placed between two of the other scales. Data was also collected on the age and sex of each child, as well as the length of time each child had attended his or her preschool.

Analysis and Results

Data were collected from teacher rating forms completed by the teachers for each variable. Interrater agreement was calculated within each school using Pearson's product-moment correlation coefficient. Ratings given by all teachers in each school were then averaged to obtain one score per variable for each of the 135 children. Correlational and multiple regression analyses were performed for the pooled sample, each sex separately and each of the seven schools. Cluster analyses were performed on the pooled sample.

Preliminary Analyses

Interrater agreement.

The overall mean of all possible pairwise correlations was computed for each school, and over all schools (see Table 2).

Interrater agreement ranged from .41 in school three to .61 in school six. The average interrater agreement over all schools was .56. The highest overall interrater agreement was observed for ratings of body build (.65), activity level (.64), dominance (.61) and popularity (.61). The lowest correlations were found for ratings of physical attractiveness (.32).

The very low interrater agreement within school two on

Table 2

Interrater Agreement(IRA) on Variable Scores for Each School

	SCHOOL							
	1	2	3	4	5	6	7	MEAN IRA FOR EACH VARIABLE
VARIABLE								
Agreeableness	.46	.59	.44	.22	.67	.67	.61	.52
Activity	.62	.74	.61	.56	.62	.69	.66	.64
Communication	.55	.14	.22	.86	.72	.63	.62	.53
Interaction	.59	.63	.34	.74	.38	.50	.62	.54
Dominance	.67	.53	.51	.72	.63	.51	.69	.61
Social perc.	.44	.64	.22	.73	.62	.52	.31	.50
Attractiveness	.41	.15	.20	.40	.45	-	.30	.32
Body Build	.68	.74	.45	.84	.44	.78	.63	.65
POPULARITY	.67	.50	.51	.77	.60	.71	.53	.61
MEAN IRA FOR EACH SCHOOL	.59	.52	.41	.65	.57	.61	.56	.56
(RATERS	4	4	4	2	5	3	5	27)

Note. Interrater agreement was calculated by means of Pearson's product-moment correlation coefficient.

communication was attributed to the fact that three out of six intercorrelations on this variable were negative, and all involved one teacher (the agreement was .51 when that teacher was excluded).

There did not seem to be any differences in the agreement between experienced and inexperienced staff members, those who had known the children longer, those who had or had not rated before or males and females.

Means and standard deviations of all variables.

Means and standard deviations were computed for age, length of stay at the preschool (LOS), and each variable, school by school and overall (see Table 3). The minimum possible score on any one variable (except age and LOS) was 0; the maximum 150.

The highest means were found for attractiveness (96.73) and communicative skills (95.82); the lowest for social perceptiveness (77.95). Standard deviations for all variables were comparable (25), with the exception of that for attractiveness, which was somewhat lower (18.13). All means exceeded the scale midpoint of 75.

Three of the 27 teachers (school six) initially refused to give ratings on physical attractiveness (one later agreed). Of the remaining 24 teachers, 5 gave all but a few children in the school ratings within a very high and restricted range. All ratings on attractiveness, generally, were clustered around a high mean.

Table 3

Means and Standard Deviations of Age, Length of Stay at Preschool (LOS) and Each Variable Within Each School

VARIABLE	SCHOOL 1	2	3	4	5	6	7	MEAN OVER ALL SCHOOLS
AGE	55.22	63.4	57.3	56.1	54.5	48.1	54.0	55.6
s.d.	10.4	10.5	11.0	13.8	10.9	9.6	12.3	11.6
LOS	12.7	12.4	13.1	19.5	9.6	9.5	15.1	13.0
s.d.	6.8	4.7	8.6	13.7	8.8	7.6	9.3	9.0
AGREEABLENESS	87.8	85.1	97.4	95.1	90.2	87.0	89.3	90.5
s.d.	22.4	38.8	23.1	23.9	24.2	24.5	24.2	25.2
ACTIVITY LEVEL	80.4	86.7	83.3	83.0	90.1	85.8	73.2	83.1
s.d.	24.2	36.8	25.5	23.5	23.2	20.2	20.6	25.2
COMMUNICATION	92.4	81.8	96.8	99.9	96.8	100.4	102.9	95.8
s.d.	26.7	28.0	17.9	30.8	30.9	22.4	21.5	25.8
INTERACTION	76.7	68.9	78.8	79.5	79.7	88.4	86.1	79.6
s.d.	22.6	31.5	19.4	38.1	21.9	22.5	22.8	25.5
DOMINANCE	70.6	74.2	74.2	90.0	83.2	87.2	81.5	79.3
s.d.	25.8	26.5	21.8	30.0	31.2	22.3	23.6	26.3
SOCIAL PERC.	74.4	70.1	79.8	83.0	87.3	80.0	70.8	78.0
s.d.	15.8	34.1	15.2	32.4	26.8	20.6	14.4	23.4
ATTRACTIVENESS	91.9	95.9	107.7	108.9	101.4	84.0	85.4	96.7
s.d.	17.8	23.0	14.3	13.3	17.4	7.3	13.6	18.1
BODY BUILD	30.7	33.6	32.5	30.0	32.0	31.3	30.9	31.6
s.d.	7.0	9.6	5.7	10.5	6.0	7.2	8.3	7.6
POPULARITY	77.1	78.2	79.2	92.3	93.3	80.4	87.2	83.6
s.d.	27.4	27.7	21.4	35.0	27.9	25.0	21.3	26.6

Note. Values for each variable except body build: minimum score=0;maximum score=150.
Values for body build: minimum score = 10 (fat); maximum score = 50 (thin).

Much the same pattern was found in each school. Some variation in scale means occurred for activity in school seven, interaction in school two, dominance in schools one, two, and three, and social perceptiveness in schools one, two, and seven.

When means were calculated for boys and girls separately (see Appendix 3, Tables 3A and 3B) the lowered mean activity rating in school seven and the lowered interaction rating in school two could be traced to ratings of the girls only.

Overall, activity level was rated much more highly in the boys subsample, and ratings for the girls were generally slightly higher or the same on the rest of the variables.

Correlations of Variables with Popularity

Table 4 shows the correlations between pooled scores on the variables of interest and popularity (see Appendix 4, Tables 4A through 4G, for correlation matrices for each school separately, and Tables 4H and 4I for each sex separately).

With all schools pooled, all variables were significantly positively correlated with popularity. Dominance (.73) and communication skills (.67) were most highly correlated with popularity, followed by social perceptiveness (.62),rate of interaction (.58), and then by agreeableness (.49), attractiveness (.38), age (.34),

Table 4.

Intercorrelation Matrix of All Variables for Pooled Sample (N=135).

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	.10'										
3. LOS	.46"	.04									
4. Agreeableness.	.01	-.26"	-.22"								
5. Activity level	.30"	.40"	.30"	-.46"							
6. Communication	.44"	-.14'	.27"	.40"	.10						
7. Interaction	.39"	.04	.32"	-.06	.57"	.49"					
8. Dominance	.44"	-.15'	.37"	.11	.43"	.67"	.80"				
9. Social perc.	.39"	-.12	.04	.66"	-.17'	.61"	.23"	.35"			
10. Attractiveness	.15'	-.01	.09	.25"	.23"	.25"	.13	.25"	.31"		
11. Body build	.12	.01	.06	-.17'	.19'	.09	.06	.05	-.09	.15'	
12. POPULARITY	.34"	-.13	.21"	.49"	.15'	.67"	.59"	.73"	.62"	.38"	.05

Note. For sex variable, negative valence represents girls and positive, boys. For body build, negative valence=towards fat and positive=towards thin.

'p<.05

"p<.01

length of stay at the preschool (.21) and finally, activity level (.15). Overall, girls were slightly more popular than boys.

Within schools. (See Appendix 4)

The pattern of high, positive, significant correlations between popularity and each of dominance, communication skills, and rate of interaction, was reflected in each of the seven schools (although the correlations between popularity and interaction were slightly lower in schools two and three). Social perceptiveness, though extremely highly correlated with popularity in schools four through seven, was less highly correlated with popularity in school three, and correlations were nonsignificant in schools one and two.

Correlations between physical attractiveness and popularity were of moderate magnitude in five schools but nonsignificant in schools three and seven.

Likewise, correlations between agreeableness and popularity were moderate to high in five of the schools, but nonsignificant in schools two and seven.

Age was either moderately or highly correlated with popularity in four schools, and nonsignificantly correlated in schools three, four, and seven. Length of stay was moderately correlated with popularity in schools one and five only.

The correlation between popularity and activity level

was positive and significant in school one, and negative and significant in school five. Correlations in the remaining five schools were nonsignificant. Correlations between popularity and sex indicated that girls were significantly more popular then boys in school five. None of the correlations in the remaining six schools were significant.

Note that the inconsistencies and contradictions found among the results from different schools are similar to those reported in different studies reviewed in the Introduction.

Data of girls and boys analyzed separately.

When the data of girls and boys were analyzed separately, the main sex difference found was that activity level was significantly and positively correlated with popularity among girls ($r=.35$; $p<.001$) but not within the boys subgroup.

The remaining correlations with popularity were comparable for both sexes, although social perceptiveness was more highly correlated with popularity among the girls (.70) than among the boys (.46).

Intercorrelations Among Variables

Pooled sample. (See Table 4)

The highest intercorrelations among the variables were found between dominance and each of interaction (.80) and communication (.67). The next highest correlations were

observed between social perceptiveness and each of agreeableness (.66) and communication (.61), and between interaction and activity level (.57).

Lower positive significant correlations were found between communication and interaction (.49), and between dominance and each of activity (.43) and social perceptiveness (.35). A significant negative correlation was observed between activity and agreeableness (-.46). Age was moderately correlated with each of length of stay (.46), dominance (.44), communication (.44), social perceptiveness (40), interaction (.39) and activity (.30). Lower correlations were found between LOS and each of activity (.30), communication (.27), interaction (.32) and dominance (.37), and there was a low but significant negative correlation between LOS and agreeableness (-.22; $p<.005$).

Low but significant correlations were also found between attractiveness and each of agreeableness (.25), activity (.23), communication (.26), dominance (.24) and social perceptiveness (.31).

Correlations between sex and each of the variables (negative valence represents girls, positive, boys) indicated that girls were significantly more agreeable (-.26; $p=.001$), dominant (-.15; $p<.05$) and communicatively skillful (-.14; $p<.05$), and boys were significantly more active (.40; $p=,0001$).

Within schools. (See Appendix 4)

The high intercorrelation between dominance and interaction found in the pooled sample was also observed in all seven schools, and that between dominance and communication was found in all schools except school two. The overall communication ratings of school two, as mentioned previously, were considered to be confounded by one teacher who seemed to have misinterpreted the scale.

Social perceptiveness was moderately to highly correlated with communication in all schools except school three, in which the correlation was positive but nonsignificant. It was highly and significantly positively correlated with agreeableness in five schools. Correlations in schools three and seven were nonsignificant.

Correlations between interaction and activity level were high in all schools except school five. Those between interaction and communication were moderate to high in all schools except school two. The positive and significant correlation between dominance and activity was found in all schools except school five.

Negative correlations were observed between activity and agreeableness in all schools. Those in schools two, three, five, and seven were significant. Negative correlations were found between LOS and agreeableness in five schools, with those in schools three, four, and seven

being significant.

Age was moderately to highly correlated with communication in all seven schools, with LOS in all schools except school two, with each of interaction and dominance in all schools except one and two, and with social perceptiveness in schools two, three, five and six. The correlations in the remaining schools were nonsignificant.

Correlations involving sex indicated that girls were more agreeable than boys in five schools. Correlations in schools three, five, and six were significant. Those in schools four and seven were nonsignificant for both sexes. Boys were more active in all schools. Correlations were significant in schools two, three, four, five and seven, and low and nonsignificant in the remaining two schools. With the exception of school five, correlations involving sex and the remaining variables were generally nonsignificant, and varied among schools. In school five, however, girls were significantly more communicatively skillful, dominant, and socially perceptive than boys. They had also attended the preschool for a significantly longer period of time.

Again, as with the correlations involving popularity, these school-to-school differences are reminiscent of those study-to-study contradictions reported in the literature. The implications of these discrepancies will be dealt with in the Discussion.

Data of girls and boys analyzed separately.

Much the same pattern was found in the male and female subsamples, with the exception of correlations involving the variables activity level and social perceptiveness. The correlation between activity level and communication was moderate (.35) in the girls sample, but nonsignificant among the boys.

There was a small but significant negative correlation between activity level and social perceptiveness in the boys group (-.25; $p<.01$), but this relationship was not significant among the girls.

Multiple Regression Analyses

The relationships between popularity and the variables of interest were examined by means of stepwise multiple regression analyses (SPSS-X 1983 version) for the pooled sample, for each sex separately, and for each school. Although the sample sizes in the schools were considerably smaller than is desireable for such analyses, it was thought that they would at least indicate whether or not a similar pattern existed in each class. The use of adjusted R2 helped compensate for the overestimation of the true R2. The step at which each predictor was entered into the equation, the significance of the R2 in each step, and the adjusted overall R2 are shown in Table 5.

Table 5

Stepwise Multiple Regression Analyses for the Pooled Sample, Each Sex Separately and Each School Separately

	Predictor variable & step entered	F ratio for R2 increase	Adjusted R2
	1. Dominance	155.39	.54
	2. Agreeableness	157.47	.70
POOLED	3. Social perceptiveness	116.56	.72
SAMPLE	4. Attractiveness	91.47	.73
	5. Interaction	76.05	.74
GIRLS	1. Dominance	86.60	.55
	2. Social perceptiveness	124.05	.78
	3. Age	93.62	.79
	4. Attractiveness	76.80	.81
BOYS	1. Dominance	61.46	.50
	2. Agreeableness	54.49	.64
SCHOOL #1	1. Dominance	82.40	.79
	2. Communication skills	61.21	.85
SCHOOL #2	1. Dominance	10.11	.36
	2. Agreeableness	32.16	.80
	3. Interaction	31.70	.85
	4. LOS	34.41	.89
SCHOOL #3	1. Dominance	22.87	.49
	2. Agreeableness	22.17	.65
SCHOOL #4	1. Social perceptiveness	56.01	.80
SCHOOL #5	1. Social perceptiveness	78.29	.79
	2. Dominance	63.81	.86
	3. Age	53.53	.89
	4. Activity level	51.91	.91
	5. Attractiveness	56.53	.93
SCHOOL #6	1. Social perceptiveness	28.91	.65
	2. Interaction	34.73	.82
SCHOOL #7	1. Social perceptiveness	34.03	.65
	2. Interaction	29.78	.76
	3. Age	40.22	.87
	4. Communication skills	41.27	.90

Note. Cutoff for including variables in the regression equation was $p<.05$.

Dominance was the single most powerful predictor of popularity in the pooled sample, for each sex, and for three of the schools. The addition of agreeableness, social perceptiveness or communication skills significantly increased the prediction power.

Social perceptiveness was the single most powerful predictor of popularity in the remaining four schools. Either dominance or interaction was entered next in all but one school (school four). The additional variables attractiveness, age, LOS, and activity level were entered into the equations on subsequent steps in some of these analyses, but did not greatly increase the adjusted R2's.

Cluster Analyses

With the exception of popularity ratings, age, and length of stay, the data from the pooled sample were submitted to the average linkage method of hierarchical agglomerative cluster analysis, currently considered to be the most preferred clustering technique available (Lorr, 1983).

The optimal number of groups within the sample was defined by observing, from the 13 cluster level downward, the jumps in values of the cubic clustering criterion (CCC), and stopping at the level before a large jump in the values, which would have suggested that the combining of the previous two clusters had created a cluster containing

extensive variance (Morris, Blashfield & Satz, 1981). The values of the CCC were negative. As this indicated that the optimal solution was somewhat heterogenous (Sarle, 1982), these clusters should be interpreted with caution.

A seven cluster solution was chosen on the basis of the analysis of the CCC. This selected grouping was then subjected to a K-means iterative partitioning procedure (SAS FASTCLUS, 1982 version) to check cluster groups for subjects which did not belong and to reallocate these misassigned observations to a more appropriate cluster (Morris et al. 1981). If outliers (subjects appearing in clusters of $n<5$), did not appear after two iterative runs with a larger number of runs specified, the K-means partitioning of the optimal hierarchical solution was chosen as the most plausible classification scheme.

Overall, 25% of the subjects were reclassified by the K-means partitioning procedure. Although this percentage is somewhat higher than would be desireable, examination of the reclustering revealed that only four groups were produced by the average linkage method, as the remaining three groups were made up of outliers. Of these, a very large hierarchical cluster containing over half the subjects was partitioned into three smaller iterated clusters (14 subjects were also reallocated to an existing cluster), and the remaining three clusters remained virtually intact. This result does reflect the overall

heterogeneity of at least one of the clusters, however, and suggests caution in the interpretation of the results (Morris et al., 1981).

Two internal validation procedures were employed in an attempt to assess the adequacy and stability of this cluster solution. The first involved a split-sample design, in which the 135 children were randomly assigned into two subsamples (n=67; n=68). The SAS hierarchical routine used on the pooled sample was carried out on each group, and the results were compared with the total sample solution. The expectation was that the same subjects would cluster together. Overall, 25% of the subjects were reclustered, suggesting some heterogeneity within clusters.

The second procedure involved the comparison of the iterated clusters with the results of two different algorithms, a procedure discussed by Morris et al. (1981). The SAS cluster routine was repeated using the Ward's minimum variance algorithm. This comparison showed 25% of initially grouped subjects reclustered. While this result also suggests a limited generalizability of the groupings produced, some differences between hierarchical groupings and iterated clusters should be expected (Spreen & Haaf, 1985).

The iterative partitioning analysis suggested a breakdown into six discrete clusters or groups, and one outlier. Cluster means were calculated for each of the

variables used in the cluster analyses, as well as for popularity, age and length of stay (see Table 6). Three clusters were above the popularity mean (clusters 1,2, and 3) and three were below (clusters 4, 5, and 6).

A multivariate analysis of variance performed on the three external variables revealed overall significance of each one (popularity: $F=51.2$, $p<.0001$; age: $F=7.4$, $p<.0001$; LOS: $F=2.86$, $p<.0176$). Subsequent pairwise comparisons (Tukey's test) revealed that cluster 1 was significantly more popular than any of the remaining clusters, and clusters 2, 3, and 4 (the "average" groups) were all significantly more popular than the two unpopular groups (5, 6). There were no significant differences in popularity among the three average clusters. Cluster 1 was significantly older than groups 3, 4, and 5 and group 2 was significantly older than group 4. The children in cluster 3 had attended preschool for a significantly longer time than those in group 5. No other differences in LOS were significant among the remaining clusters.

Profiles are shown in Figure 1. The most popular group (1:n=20) had very high means for all the variables except activity level and attractiveness, which were somewhat lower (though still above the overall means).

The second and third next popular groups had similar scores (above the mean) for communication skills and age. Other than these two variables, however, the profiles of

Table 6

Mean Scores for Each Variable for Each of the Six Clusters

	CLUSTER						
	#1	#2	#3	#4	#5	#6	
VARIABLE	STARS	PROSOCIAL	ASSERTIVE	POTENT-IALLY POPULAR	NEGLECTED	REJECTED	OVERALL MEAN
POPULARITY	125.1	94.2	87.9	80.8	59.2	59.1	83.6
s.d.	9.6	14.4	20.7	12.2	14.7	14.4	26.6
Dominance	119.4	73.4	90.7	63.9	55.8	70.2	79.3
s.d.	11.3	16.4	17.9	12.6	16.3	19.8	26.2
Interaction	107.9	72.4	97.4	55.9	56.9	84.7	79.6
s.d.	15.9	16.1	14.9	16.9	13.6	16.6	25.5
Activity level	90.2	72.0	95.9	66.0	59.7	123.0	83.1
s.d	12.1	11.0	17.3	14.6	19.2	12.1	25.2
Communication	131.0	107.9	103.5	87.2	74.4	66.6	95.8
s.d.	6.8	12.5	16.9	11.8	20.4	17.7	25.8
Social perc.	109.7	103.2	71.4	75.0	66.5	53.0	77.9
s.d.	13.0	15.1	15.0	11.2	17.3	15.0	23.4
Agreeableness	115.3	117.7	81.0	99.4	86.1	49.6	90.5
s.d.	12.5	16.0	17.1	16.2	18.5	17.0	25.8
Attractiveness	107.8	104.0	92.7	111.6	77.7	99.8	96.7
s.d.	16.4	15.4	14.3	9.1	11.1	17.1	18.1
Body build	31.0	31.1	32.9	32.8	28.6	33.2	31.6
s.d	6.4	6.8	6.1	8.1	9.7	6.4	7.6
AGE	65.1	59.5	56.7	48.4	50.2	54.9	55.6
s.d.	8.3	13.3	11.1	9.3	9.4	10.8	11.6
LOS	15.4	9.6	16.2	11.6	9.6	12.2	13.0
s.d.	11.4	7.2	9.2	7.9	5 6	8.7	9.0

Note. Body build: 10-20= chubby; 30=average; 40-50=thin

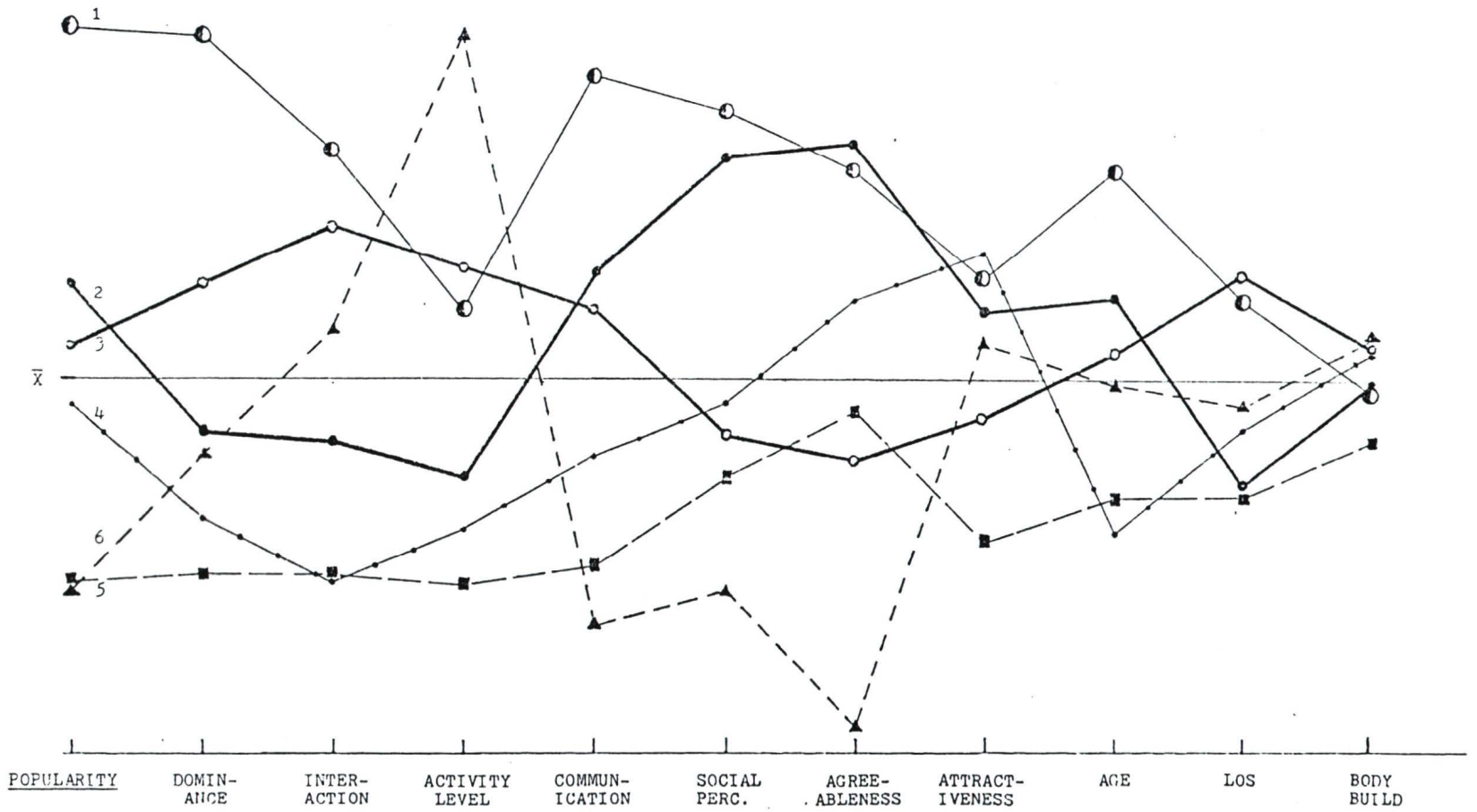

Figure 1. Cluster profiles.

Cluster 1: "Stars" (Very popular)

Cluster 2: "Prosocial" (High-average popularity)

Cluster 3: "Assertive" (Medium-average popularity)

Cluster 4: "Potentially popular" (Low-average popularity)

Cluster 5: "Neglected" (Very unpopular)

Cluster 6: "Rejected" (Very unpopular)

these two groups were diametrically opposite. The more popular group (2:n=15) was well above the mean on social perceptiveness, even further above the agreeableness mean than the most popular group, and above the overall mean on physical attractiveness. They were rated below the mean however, on dominance, interaction and activity level. This group (and group 5) had attended the preschool for the shortest length of time.

In contrast, the third most popular group (3:n=36) had fairly high scores on dominance, interaction and activity level, but fell below the mean for social perceptiveness, agreeableness and physical attractiveness. This group had been at preschool for the longest time.

A fourth cluster (4:n=20) had a mean popularity rating that was slightly below the overall mean. It was also rated below the mean on dominance, activity level, communication skills, social perceptiveness and, in particular, rate of interaction. This group was rated above the sample mean for agreeableness, however, and had the highest attractiveness mean of the entire sample. This group was also the youngest and had been at preschool slightly below the mean length of time.

There were two very unpopular groups. One (5:n=29) was rated below the mean on all variables, although the agreeableness score was not far below the overall mean. This was the most endomorphic as a group, although the mean

score was still within the average range, according to Lerner and Gellert's (1969) scheme. These children had been at preschool the shortest length of time and were also the second youngest group.

The second unpopular group (6:n=14) was extremely active and above the mean for interaction. These children were also extremely disagreeable, communicated less skillfully than any of the others, and were the least socially perceptive. They were above the mean for physical attractiveness, however, and were slightly below the age mean. They were also considered to be the most ectomorphic as a group, although, again, they were still within the average range.

Discussion

Results of the present study largely support the original hypotheses, although some discrepancies were found among schools. The findings of numerous researchers are corroborated by results of the correlational analyses on the sample as a whole, and on subsamples of each sex separately and of some of the schools. Thus, overall, popular children of both sexes were significantly more dominant (Abramovitch & Grusec, 1978), communicatively skillful, socially perceptive (Marcus, 1980; Rubin, 1972; Rubin & Maioni, 1975), agreeable (Hartup et al., 1967; Putallez & Gottman, 1981), attractive (Dion, 1972; Vaughn & Langlois, 1983), and older (Connolly & Doyle, 1983; Galejs et al., 1983; Goldman et al., 1981) than their peers. They interacted with other children at a significantly higher rate (Goldman et al., 1980; Greenwood et al., 1979; Krantz, 1982), and had been at preschool longer. The finding that activity level was significantly correlated with popularity among girls but not among boys, was attributed to the much higher activity level found among the boys in general. This sex difference has been noted in previous studies (e.g. Langlois & Downs, 1979).

The variability in the relative importance of these correlates to popularity among the schools provides some

indication as to why results of research involving one or two preschool classes have not always been in agreement. This, in turn, may explain many of the inconsistencies and contradictions which exist in the literature on popularity, as discussed in the Introduction. Examination of each of the schools in the present study suggested that the interaction of a number of contextual influences, such as the mix of ages, the relative length of time children had attended their preschool, the size of the group, and the ratio of girls to boys, as well as differing perceptions of the teachers, might have been partially responsible for some of these differences. Conclusions reached by LaFreniere and Sroufe (1985) support this speculation. These authors found dominant children to be popular in one of the two preschools in their study but not the other. They suggested that interschool differences in "behavioural ecology" and social organization were largely responsible for their results.

In the present investigation, differences in the relative importance of dominance and social perceptiveness proved to be of particular interest. Results of correlational and regression analyses indicated a pattern among the schools, in that one or the other of these variables was the most important determinant of popularity in each school. These findings, taken together with the high intercorrelations observed among dominance,

interaction, and activity level, and between social perceptiveness and agreeableness, suggested that there were possibly two distinct groupings of characteristics (in addition to communication skills) that jointly accounted for peer group status: those that represented a more assertive style of interacting, and those that were more prosocial in nature. Results of LaFreniere and Sroufe's (1985) study also support this speculation. These authors identified two types of characteristics which they defined as dimensions of "peer competence":

> The first dimension may be characterized by a warm, open, flexible, and generally positive interpersonal style leading to great popularity with one's peers as well as recognition of social and emotional maturity by one's teachers. The second dimension may be characterized by an effective, assertive interpersonal type that is expressed in both positive and negative affective exchanges, leading to high status among one's peers and, to a lesser extent, a positive evaluation by one's teachers.(p.66)

Results of cluster analyses supported hypotheses regarding the presence of subgroups of children of high, medium and low popularity within the sample, and identified several permutations of characteristics that might lead to these different levels of peer group status. While the

internal validation procedures employed suggested some limited generalizability of the clusters identified, the convergence of many of the profiles with results reported by other researchers provides encouraging evidence of concurrent validity.

Six distinct clusters of children were identified. One very popular group ("stars") had favorable ratings on all variables. Two less popular groups were characterized as being either predominantly "prosocial" or "assertive" in their interactions with peers. The fourth cluster, which was slightly less popular again, was relatively young, and had a profile which suggested that these children might attain higher popularity as they grew older ("potentially popular"). There were also two very unpopular groups: one that had low ratings on all variables ("neglected") and one that was characterized as being hyperactive and extremely disagreeable ("rejected").

The profile of the extremely popular group of children agreed with findings of numerous investigators, as well as with the correlational and multiple regression analyses of the present study. Thus, they had high scores on all variables, but were not much more active than average. They were also of average build, which is consistent with findings of Lerner and Gellert (1969). The preponderance of girls in this group perhaps reflects their advanced social development at this age as compared to boys (Dweck,

1981).

The profiles of the clusters ranking second and third in popularity were consistent with results of analyses on the schools and clearly reflected LaFreniere and Sroufe's (1985) two dimensions of peer competence. One group scored highly on the prosocial variables, but below the mean on the more assertive ones; the other had the opposite pattern, i.e. above the mean on assertive variables and below the mean on the more prosocial ones. The profiles of these three groups suggest that while being older and communicating well are prerequisites for popularity status that is above the mean, high scores on all variables are only necessary for extremely high status. Thus children who are assertive and socially active, but less pleasant and perceptive than average may achieve similar peer group status to those children who are a bit shy and less active but who are very pleasant, cooperative and empathic.

The profile of the low-average popularity cluster (Cluster 5) suggested that the attractive appearance and cooperative manner of these children may have compensated for their low assertiveness and social activity, and slightly below average social skills.

This cluster may also represent the prosocial children of high-average popularity at an earlier developmental stage. It is possible that the profile of this group might come to resemble that of the prosocial cluster over time,

as these children become more assertive, communicatively skillful and socially perceptive with age. This speculation is supported by the fact that 18 of the 20 children were relatively young.

It must be noted that this low average group is the only cluster of the six that has not yet been identified in the literature. It should therefore be interpreted with more caution than the others until such time as these findings are replicated.

Profiles of the two very unpopular clusters indicated that they represented the "neglected" and "rejected" subtypes of unpopular children that have been consistently identified in sociometric research (e.g. Asher et al., 1981; Goldman et al., 1980; Gottman, 1977; Peery, 1979). The first unpopular cluster, which would be identified as neglected children in sociometric studies by lack of either positive or negative sociometric nominations from peers, had particularly low assertiveness scores. The social perceptiveness and, in particular, agreeableness scores were higher (though still below the mean). These children have been characterized as shy and socially inactive (e.g. Coie & Dodge, 1983). The present results confirm this description of neglected children, as well as providing evidence to suggest that stimulus and situational variables also contribute to their low peer group status. This group

was the only one to have an attractiveness score well below the mean, a finding consistent with past research (Vaughn & Langlois, 1983), and was the most endomorphic in build.

The children in the neglected cluster had also attended preschool a shorter length of time than the others. Again, the correlations with length of stay at preschool and age suggest that these children might become more assertive and socially skilled over time. In a longitudinal study of older neglected children (Grades three and five), Coie and Dodge (1983) found that these children did tend to move toward more positive social status with the passage of time and without intervention. While there are doubtlessly developmental changes in the types of characteristics that mediate status at different ages, their results support the speculation that the neglected preschool children involved in this study might also become more popular over time.

The second unpopular cluster reflected the "rejected" subtype, identified in studies using sociometric nomination measures by few, if any, positive choices and many negative ones. The profile of this group suggested that these children were hyperactive and very disagreeable. They interacted fairly frequently with other children, but were socially unskilled and aversive to their peers. These findings are consistent with studies that have found rejection scores to be correlated with negative peer interaction (Gottman, 1977; Hartup et al., 1967; Masters &

Furman, 1981), low scores on tasks of emotion attribution (Goldman et al., 1980; Peery, 1979) and referential communication (Goldman et al., 1980), and active, disruptive behaviour (Coie et al., 1982). Furthermore, Rubin and Daniels-Beirness (1983) found that children with negative peer group status in kindergarden demonstrated hyperactive, distractible behaviour in Grade One. This latter result, coupled with evidence that the rejected status of elementary school children remains stable over several years (Coie et al., 1983), strongly suggests that the social status of these children is less likely to improve over time than that of their neglected peers, and, furthermore, that they may be at risk for later problems. These rejected children have thus been identified as those most in need of early intervention (e.g. Gottman, 1977; Rubin & Daniels-Beirness, 1983).

Implications for Future Research

Taken as a whole, these results have important implications for future research, particularly in applied areas. More specifically, the roles of: (a) the rate at which a child interacts with peers; (b) his or her physical appearance; and (c) contextual and developmental factors, must all be considered when interpreting peer group status.

There is considerable evidence to support the view that great caution must be taken in assuming that low rates of interaction necessarily represent problems requiring

intervention (Asher et al., 1981; Goldman et al., 1981; Gottman, 1977). While one of the very unpopular clusters in the present study had a low rate of interaction, the most socially inactive group of children were of average popularity, and the second most popular group also interacted at a rate below the overall mean. Similarly, while the most popular group and one of the average groups had high interaction rates, the group probably most in need of clinical intervention also interacted above the mean rate. Interaction rate *per se*, then, seems not to be a valid or reliable indicator of a child's popularity or social competence. Asher et al. (1981), and others have noted that the quality of such interactions is of far more importance than the rate at which they occur. The profile of the assertive group (Cluster 3) in the present study, however, suggests that these interactions need not all be prosocial.

As Vaughn and Langlois (1983) and others have suggested, popularity status covaries with physical attractiveness. While there is no doubt that attractiveness has some effect on popularity, however, the results of this study suggest that the role of this variable in determining how well a child is liked by peers may be even more complicated than previously thought. Thus, while the attractiveness means of the most popular group and of one of the very unpopular groups were

consistent with results of several correlational studies (e.g. Vaughn & Langlois, 1983), in that they were relatively high and low, respectively, the means of the remaining clusters indicated more variability in the relationship between popularity and appearance. The most unpopular group, for example, was more attractive than average, whereas one of the average-popularity groups had an attractiveness score below the mean. These results suggest that while physical attractiveness may be necessary for the attainment of high peer group status, it is less important in the average popularity ranges. It is also conceivable that only attractiveness at extremes of the continuum affect popularity. Thus, if the children of low-average popularity, who were below the mean on most variables, had not been the most attractive, they may have been less popular. Conversely, if the neglected children, who were even less assertive and socially skilled, had not also been the least attractive in the sample, they might have enjoyed more positive peer group status.

These attractiveness data must be interpreted with caution, as, with the exception of the neglected group which was rated as noticeably less attractive than any of the others, differences among the attractiveness means of the groups were small. Furthermore, low interrater agreement was observed for this variable. This is consistent with results reported by others (Cross & Cross,

1970; Vaughn & Langlois, 1983), and supports Cross and Cross's (1970) conclusion that the perception of attractiveness is affected by numerous interactions and factors and that, to some extent, there is "little accounting for taste". An additional finding of note in the present study was that the attractiveness ratings, in general, were high. The reactions of many of the teachers to this scale suggested that these high ratings reflected a reluctance to rate the childrens' physical attractiveness, perhaps based on an implicit belief that attractiveness should not matter in social interactions (Dion & Berscheid, 1974). This finding itself may be an interesting topic for a future study.

Finally, and perhaps most importantly, situational and developmental factors must be considered when interpreting peer group status. The profiles of the groups of children in this study, in conjunction with results of longitudinal studies with elementary school children (Coie & Dodge, 1983) suggest that children judged to be at risk in their peer relations should perhaps be followed over a predetermined period of time before any intervention is attempted. In this way, children whose social deficits might be more a reflection of age or length of time at school than any real problem could be identified and excluded from the target population. The merits of studying children over time are clearly not limited to

applied areas, however. Fruitful directions for future research include the examination of developmental changes in the variables that appear to influence popularity, and the relative importance of these variables over time, as well as the stability of peer group status itself, over time and settings.

Conclusions

The results of this investigation provide evidence to indicate that a child's popularity is determined by a complex set of interrelated factors, and, furthermore, that these factors can be combined in a variety of ways to produce different, as well as similar, levels of peer group status.

These findings also provide several possible explanations for the inconsistent results reported in the literature on popularity. In particular, the presence of several distinct subgroups of popular and unpopular children (which may be differentially represented across samples), and the differing social ecologies among schools identified in this research, in addition to the possible shortcomings of sociometric nomination measures noted earlier, may all have contributed to the confusion.

Finally, it is hoped that these results will provide a useful conceptual schema for classifying children of high, medium and low popularity in future research. Such a taxonomy would facilitate the study of the characteristics of children in each of these groups, and ultimately lead to an understanding of this very complex phenomenon - popularity.

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APPENDIX 1:

Preliminary Materials

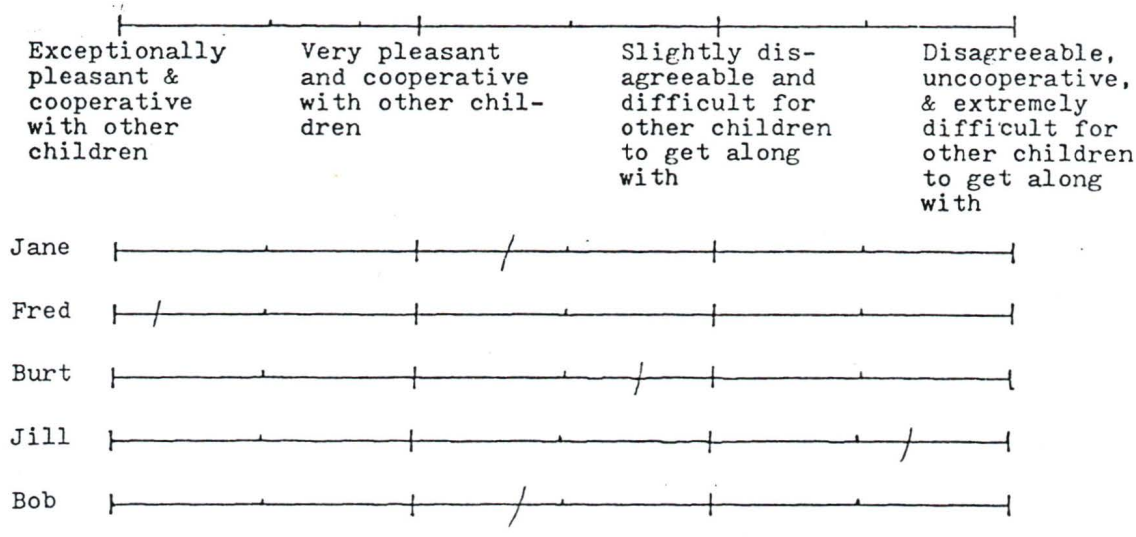
RATING PROCEDURE

I am assuming that during the weeks and months that you have watched these children interacting with one another, you have formed an overall impression of each child.

It is on the basis of these overall impressions that I would like you to rate each child (it is therefore not necessary that a particular child even be at the centre when you do the ratings).

Please be sure to read each definition and the four 'cues' very carefully, and think of where each child is in relation to the others. To rate each child, just make a mark on the line beside his/her name at the point which best describes him or her, as in the following example:

E.G: AGREEABLENESS: EXTENT TO WHICH THE CHILD IS PLEASANT AND COOPERATIVE WITH OTHER CHILDREN.



Please do the scales INDEPENDENTLY without consulting anyone else!! I would also ask that you not discuss how you rated any of the children until you have finished all the scales (and I have them!))

Please detach the bottom of this sheet and return it to me after you have filled it in. Many thanks.

First name:_____

Daycare Centre:_____

Approximately how long have you known these children?_____

What is your experience (years, months) working with this age-group (here and elsewhere)?_____

Have you filled out any sort of rating evaluation before?_____

Dear

WHEN you have a spare few minutes (anytime before I leave you on the 28th of August), I would very much appreciate knowing 1) the AGE (as of August 1st/84) of each child and 2) how long each child has been attending this daycare(also as of Aug.1/84). (Also, could you check to see that I've assigned the sex correctly?).

THANKS.

Penny

NAME	SEX	AGE(years, months as of Aug. 1)	Years,months at this centre (as of Aug. 1)

Also, do the children all play together all day? Yes No

If NOT, how are they separated, and for how long each day?

Anything else you think I should know:

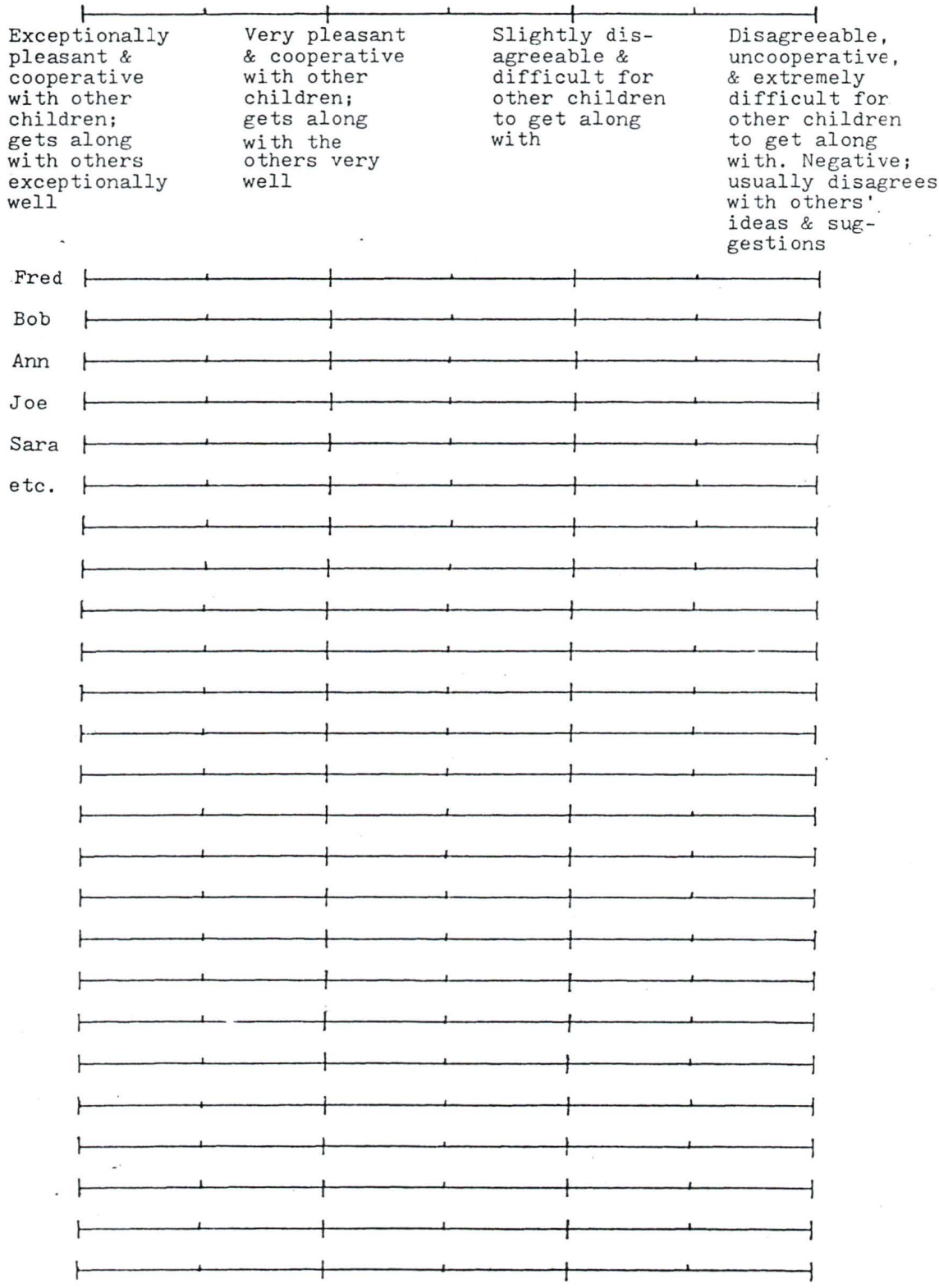
APPENDIX 2:

Rating Scales

(Reduced: original scales were 150 cm. in length)

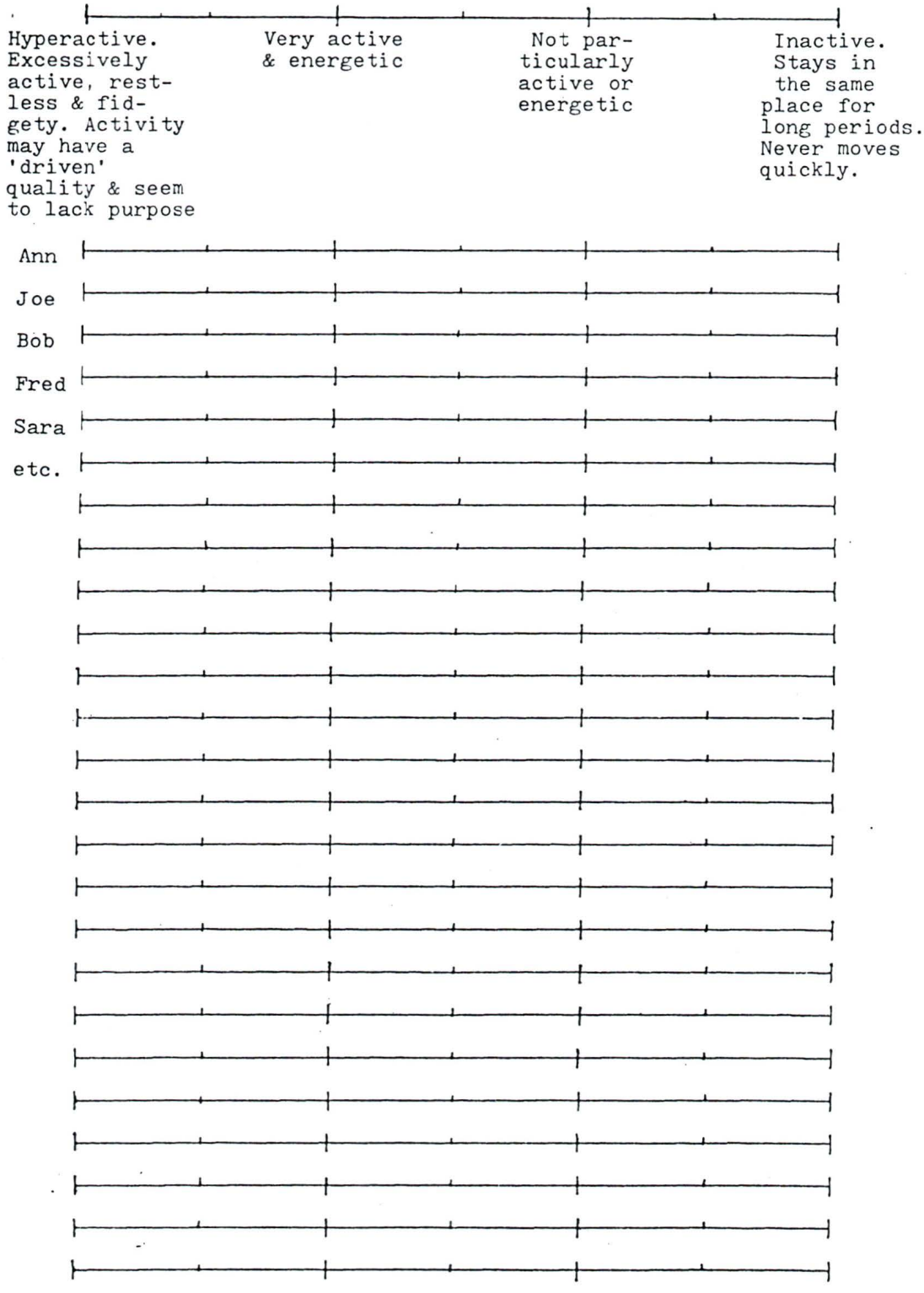
RATER: CENTRE: DATE:

AGREEABLENESS: EXTENT TO WHICH THE CHILD IS PLEASANT AND COOPERATIVE WITH OTHER CHILDREN AND EASY FOR OTHER CHILDREN TO GET ALONG WITH.



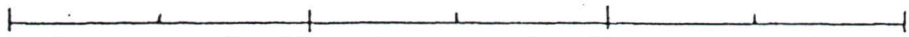
RATER: CENTRE: DATE:

ACTIVITY LEVEL: OVERALL FREQUENCY AND INTENSITY OF THE CHILD'S ENERGY EXPENDITURE/MOVEMENT.

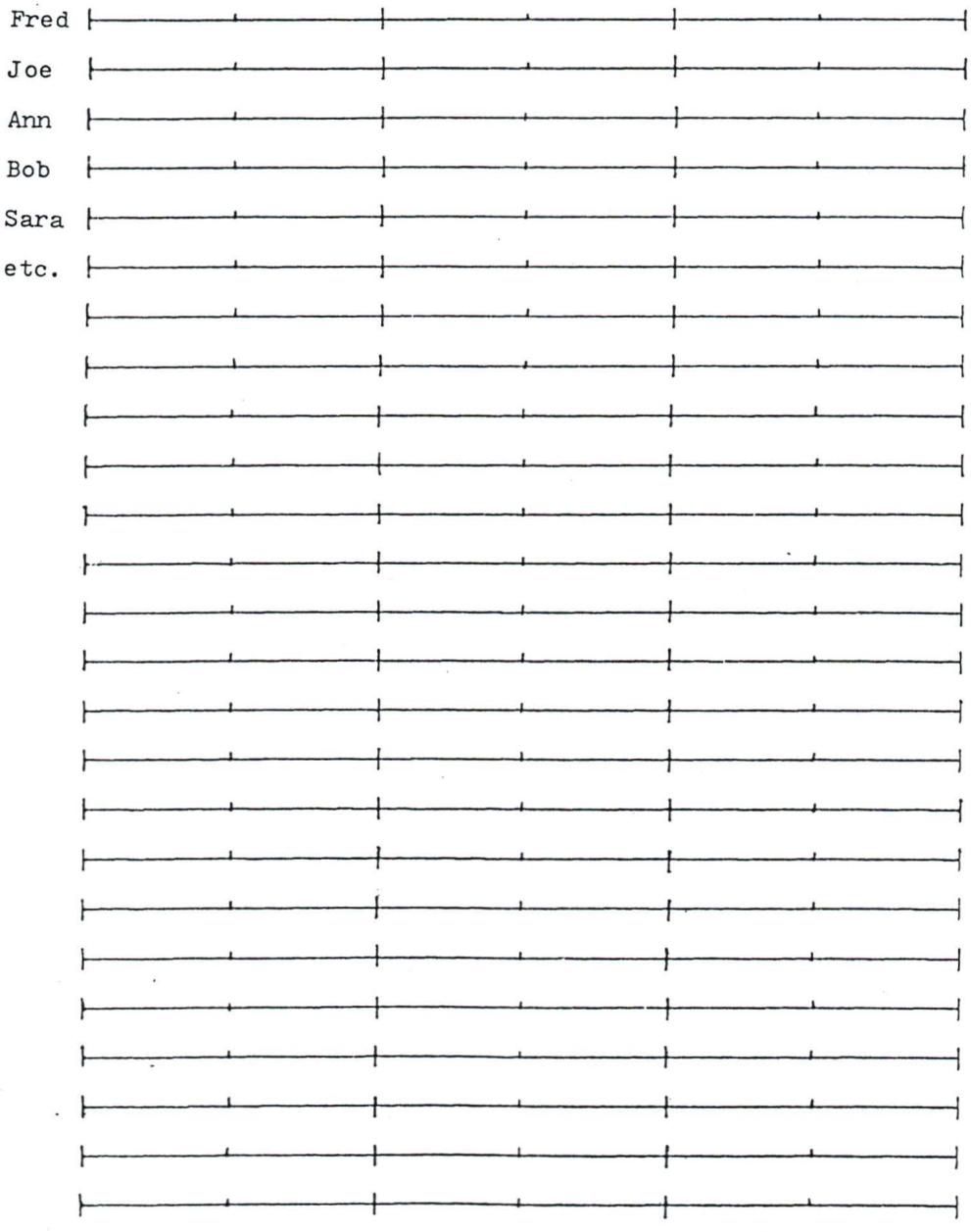


RATER: CENTRE: DATE:

COMMUNICATIVE ABILITY: THE EXTENT TO WHICH THE CHILD IS ABLE TO EXPRESS HIM/HERSELF TO OTHER CHILDREN: MAKE HIM/HERSELF UNDERSTOOD, COMMUNICATE THOUGHTS, NEEDS AND WISHES TO OTHER CHILDREN SUCCESSFULLY(VERBALLY & NON-VERBALLY).

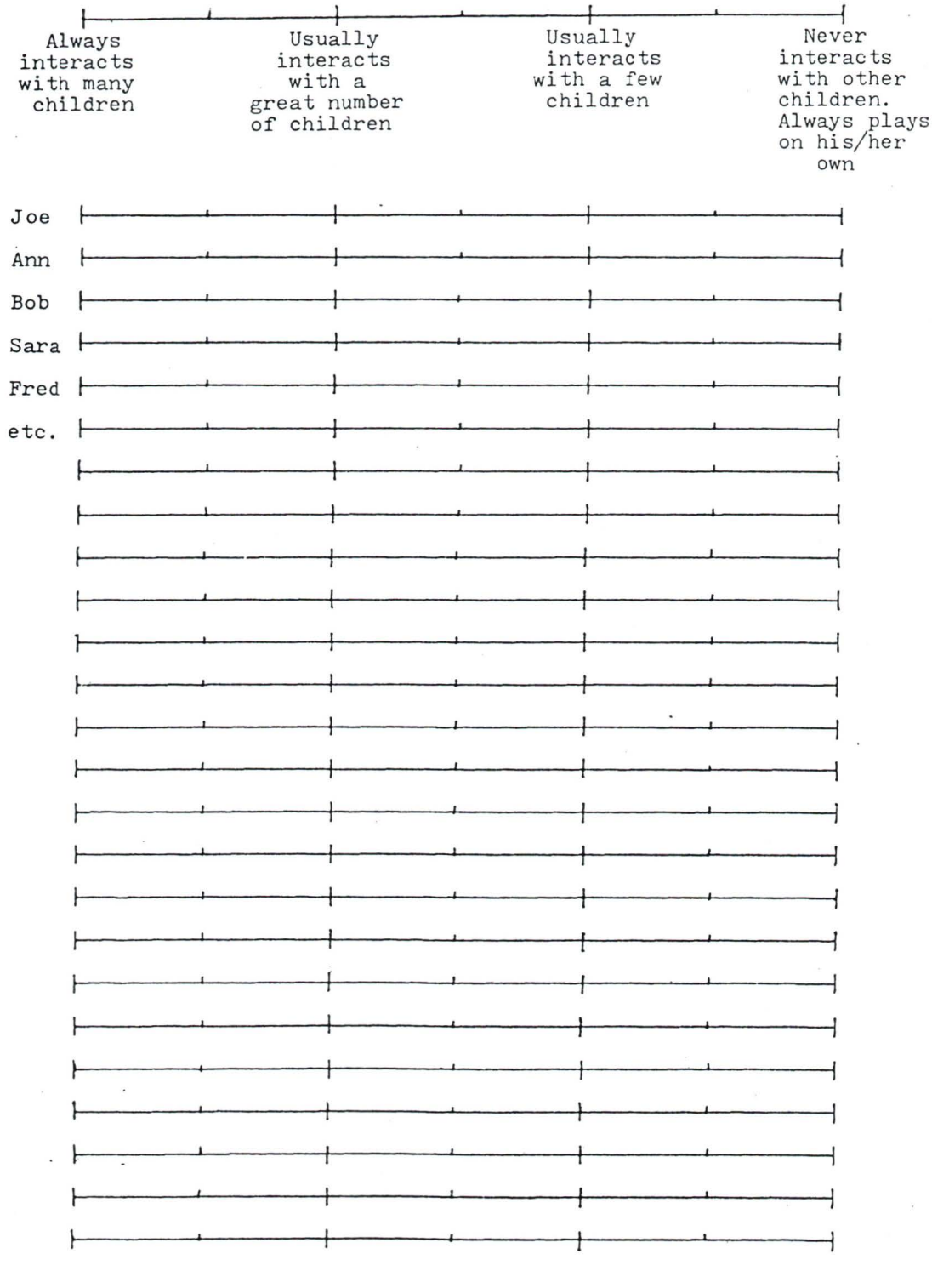


Always makes him/herself understood & communicates thoughts, needs, & wishes successfully	Usually makes him/herself understood & communicates thoughts, needs & wishes successfully	Sometimes makes him/herself understood but often does not communicate successfully	Never makes him/herself understood; never communicates successfully



RATER: CENTRE: DATE:

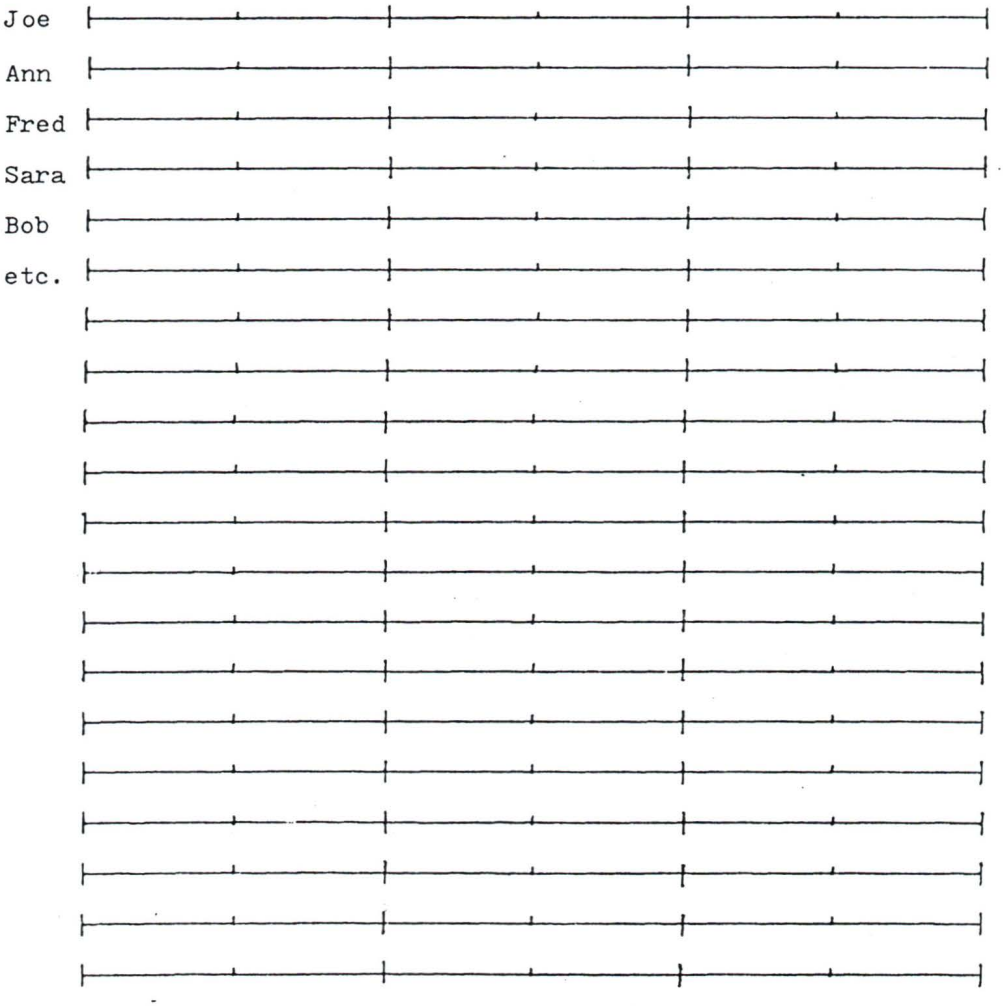
RATE OF INTERACTION: THE OVERALL AMMOUNT OF INTERACTION THE CHILD HAS WITH OTHER CHILDREN IN AN AVERAGE DAY. THIS INCLUDES ALL INTERCHANGES - VERBAL & NON-VERBAL, POSITIVE & NEGATIVE.



RATER: CENTRE: DATE:

DOMINANCE: THE CHILD'S INFLUENCE IN THE GROUP; THE DEGREE TO WHICH THE CHILD GETS OTHERS INTERESTED IN WHAT HE/SHE IS DOING; ORGANIZES AND MAINTAINS PLAY ACTIVITIES AMONG OTHER CHILDREN; COMMANDS COOPERATION & ATTENTION.

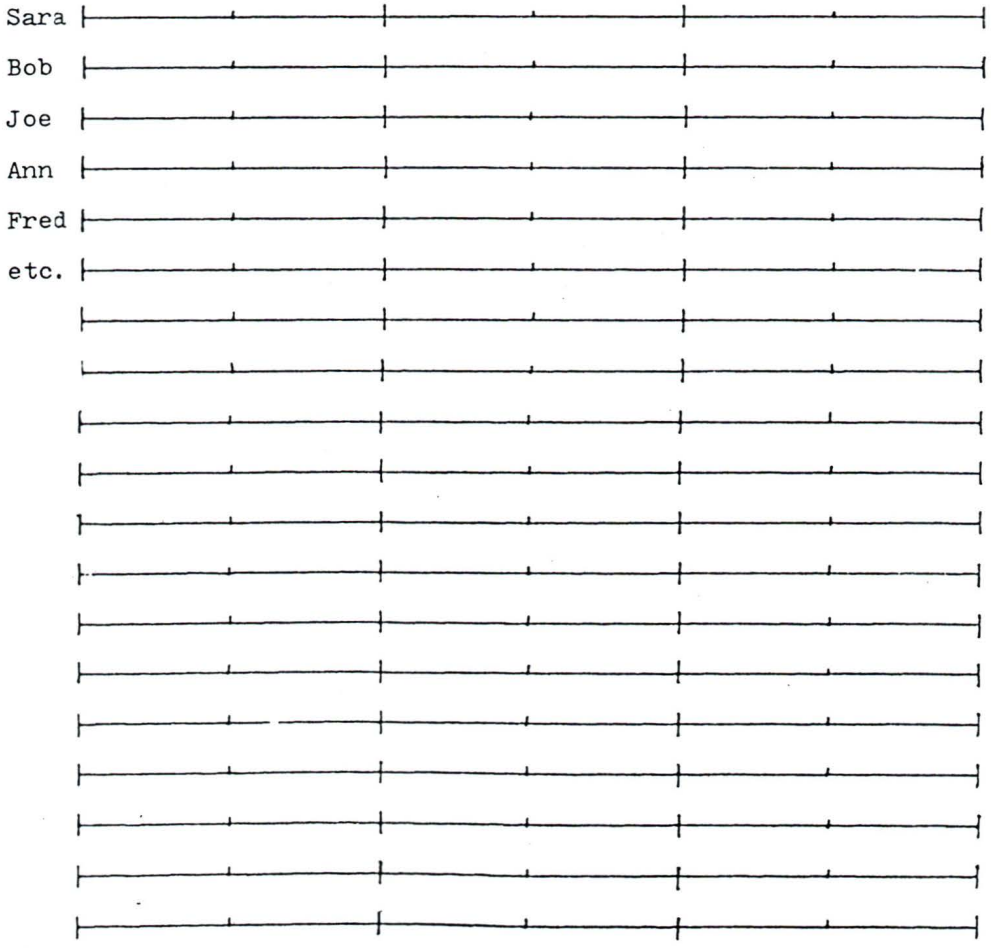
Exceptionally influential in the group. Always gets others interested in what he/she is doing, & organizes & maintains play activities among the others.	Has significant influence in the group. Often gets others interested in what he/she is doing, & organizes & maintains play activities among the others	Has little influence in the group. Occasionally gets others interested in what he/she is doing & organizes & maintains play activities among the others.	Has no influence in the group. Never gets the attention of others. Never gets cooperation if he/she tries to direct activities.



RATER: CENTRE: DATE:

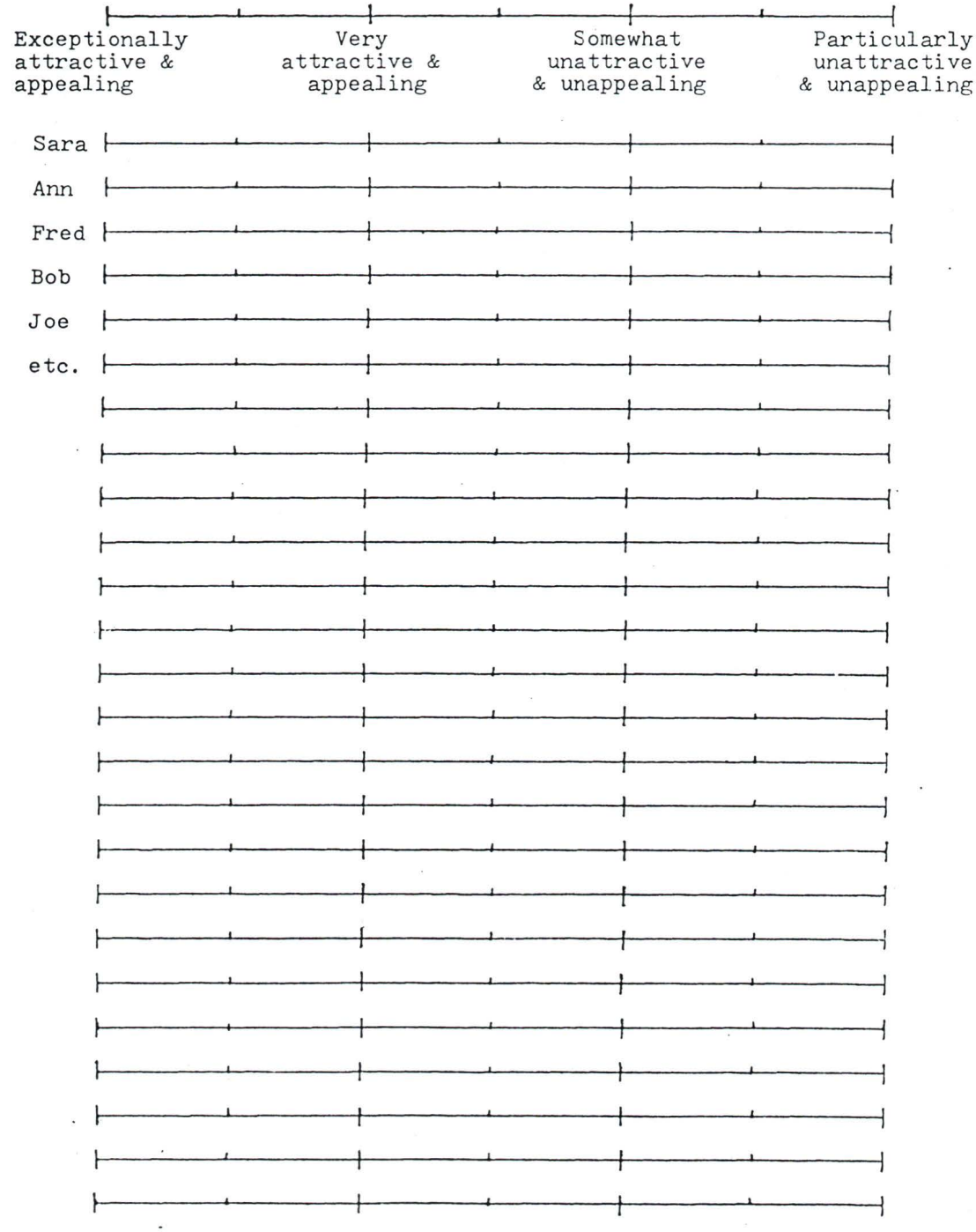
SOCIAL PERCEPTIVENESS: THE EXTENT TO WHICH THE CHILD SHOWS RECOGNITION & UNDERSTANDING OF OTHER CHILDREN'S FEELINGS, THOUGHTS AND POINTS OF VIEW THAT ARE DIFFERENT FROM HIS OR HER OWN.

seems exceptionally aware of feelings & points of view of other children. Always adapts him/herself to ongoing play of others easily	Seems very aware of feelings & points of view of other children. Often adapts him/herself to ongoing play of others easily	Shows little awareness of the feelings or points of view of others. Often draws attention to him/herself when trying to join ongoing play of others	Appears to focus only on his/her own feelings & points of view, & issues directly affecting him/her. Always draws attention to him/herself when trying to join ongoing play of others



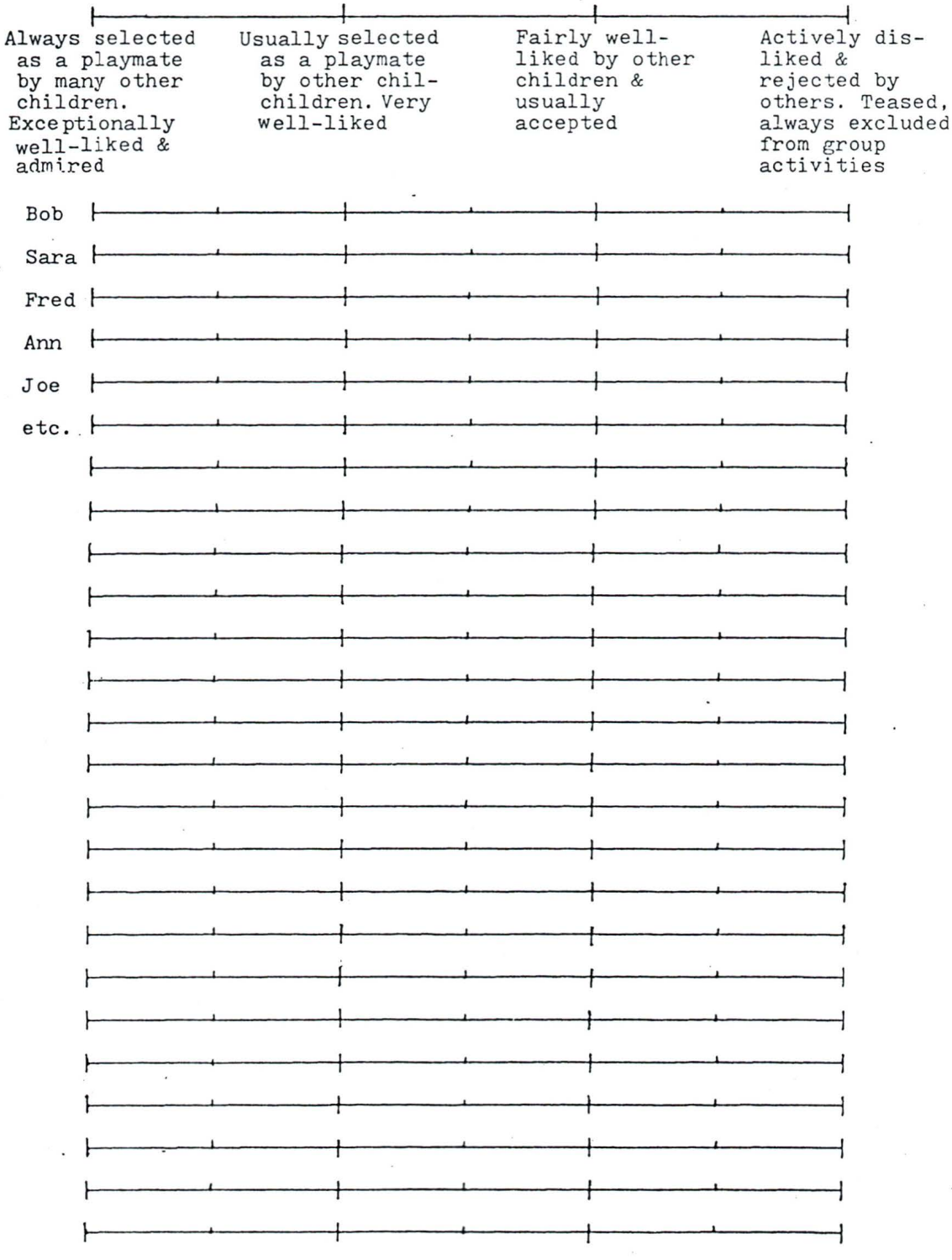
RATER: CENTRE: DATE:

PHYSICAL ATTRACTIVENESS: THE EXTENT TO WHICH YOU CONSIDER THE CHILD'S PHYSICAL APPEARANCE TO BE ATTRACTIVE & APPEALING (REGARDLESS OF THE CHILD'S PERSONALITY OR BEHAVIOUR).



RATER: CENTRE: DATE:

POPULARITY: THE EXTENT TO WHICH THE CHILD IS SOUGHT-AFTER, WELL-LIKED AND ADMIRED BY OTHER CHILDREN.



RATER: CENTRE: DATE:

BODY BUILD: PLEASE RATE THE BODY BUILD OF EACH CHILD AS PREDOMINANTLY:
1) Fat or chubby 2) chubby to average 3) average or muscular 4) thin to average 5) thin and linear.

Please CIRCLE one of the numbers for each child, i.e. please don't put any marks between the numbers.

1	2	3	4	5
Fat or chubby	Chubby to average	Average or muscular	Thin to Average	Thin and linear

Bob	1	2	3	4	5
Joe	1	2	3	4	5
Sara	1	2	3	4	5
Fred	1	2	3	4	5
Ann	1	2	3	4	5
etc.	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

APPENDIX 3:

Means and Standard Deviations of All Variables Calculated for Each Sex Separately

Table 3A

Means and Standard Deviations of Age, Length of Stay at Preschool (LOS) and Each Variable For Girls Subsample.

VARIABLE	SCHOOL 1	2	3	4	5	6	7	MEAN OVER ALL SCHOOLS
AGE	51.7	64.7	51.7	54.0	56.9	49.6	53.1	54.5
s.d.	8.0	10.6	8.5	13.3	11.6	11.1	12.0	11.4
LOS	12.4	12.6	9.7	17.5	12.9	9.3	13.3	12.6
s.d.	4.2	5.5	7.0	13.9	10.3	8.4	7.0	8.0
AGREEABLENESS	93.6	92.5	108.6	95.2	104.2	95.2	89.8	96.7
s.d.	21.6	39.0	22.4	24.4	17.2	18.5	20.9	24.0
ACTIVITY	76.6	69.6	67.8	75.2	77.2	84.5	67.1	74.0
s.d.	21.9	35.6	21.2	23.7	13.2	22.2	18.1	22.7
COMMUNICATION	86.7	90.4	100.6	97.6	109.8	106.4	103.6	99.2
s.d.	24.6	23.5	18.3	32.4	27.6	25.2	16.7	24.8
INTERACTION	78.6	58.1	75.2	69.4	84.3	93.8	88.9	78.7
s.d.	20.2	18.4	26.8	36.0	26.1	25.4	23.8	26.9
DOMINANCE	74.6	69.9	74.1	85.2	99.2	91.3	84.6	82.9
s.d.	24.1	21.4	28.5	32.3	30.1	24.9	22.0	27.0
SOCIAL PERC.	74.7	79.6	78.9	76.6	101.1	81.1	71.9	80.5
s.d.	16.6	37.3	14.4	34.9	17.7	23.1	14.0	24.7
ATTRACTIVENESS	93.4	92.3	110.7	108.9	104.3	83.3	88.4	96.9
s.d.	19.5	22.4	12.0	15.5	22.5	8.0	13.6	19.1
BODY BUILD	30.0	30.8	33.3	30.0	33.4	31.5	31.9	31.5
s.d.	6.7	8.6	6.5	11.8	6.9	8.8	7.6	8.0
POPULARITY	75.6	74.7	80.2	87.3	110.5	85.4	91.9	86.8
s.d.	32.1	20.0	21.4	38.6	19.4	26.5	21.4	27.9

Note. Values for each variable except body build: minimum score=0; maximum score=150.
Values for body build: minimum score=10;maximum score=50-thin).

Table 3B

Means and Standard Deviations of Age, Length of Stay at Preschool (LOS) and Each Variable For Boys Subsample.

VARIABLE	SCHOOL 1	2	3	4	5	6	7	MEAN OVER ALL SCHOOLS
AGE	59.1	61.4	60.6	60.4	51.8	45.8	55.6	56.9
s.d.	11.7	10.9	11.2	15.1	10.0	6.8	13.7	11.9
LOS	13.1	12.0	15.1	23.4	5.9	9.8	18.0	13.4
s.d.	9.1	3.8	9.2	13.8	5.0	6.7	12.5	9.7
AGREEABLENESS	81.5	74.6	90.7	95.1	74.9	73.4	88.5	83.0
s.d.	22.6	38.7	21.4	25.8	21.7	28.8	30.8	26.0
ACTIVITY	84.5	111.1	92.6	98.7	104.3	87.9	83.8	94.2
s.d.	26.9	22.7	23.7	14.6	24.0	18.2	21.5	23.8
COMMUNICATION	98.7	69.6	94.5	104.7	82.6	90.4	101.9	91.7
s.d.	28.5	31.0	17.9	30.0	29.1	12.7	29.4	26.5
INTERACTION	74.6	84.4	81.0	99.8	74.6	79.4	81.4	80.6
s.d.	25.9	40.8	14.1	37.5	16.1	14.0	22.0	23.8
DOMINANCE	66.3	80.3	74.3	99.6	65.7	80.3	76.2	75.0
s.d.	28.0	33.3	17.8	24.9	22.5	16.7	27.1	24.8
SOCIAL PERC.	74.2	56.8	80.3	96.0	72.0	78.2	68.8	74.9
s.d.	15.8	25.6	16.1	24.8	27.4	17.3	15.0	21.5
ATTRACTIVENESS	90.3	101.1	105.9	108.9	98.2	85.2	80.2	96.5
s.d.	16.4	24.6	15.7	9.3	9.7	6.6	13.1	17.1
BODY BUILD	31.4	37.5	32.0	30.0	30.5	30.8	29.0	31.7
s.d.	7.5	10.3	5.3	8.7	4.7	3.8	9.8	7.1
POPULARITY	78.8	83.3	78.6	102.2	74.4	72.2	79.3	79.7
s.d.	22.6	37.5	22.2	27.1	23.6	21.9	19.9	24.6

Note. Values for each variable except body build: minimum score=0; maximum score=150.
Values for body build: minimum score=10;maximum score=50-thin).

APPENDIX 4:

Correlation Matrices for Each Sex Separately and for Each of the Seven Schools

Table 4A

Intercorrelation matrix of all variables for school 1(n=23)

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	.36'										
3. LOS	.42'	.05									
4. Agreeableness	-.08	-.27	-.20								
5. Activity level	.21	.17	.45'	-.18							
6. Communication	.45'	.23	.25	.43'	.35'						
7. Interaction	.21	-.09	.48'	.26	.82"	.56"					
8. Dominance	.22	-.17	.36'	.42'	.65"	.64"	.92"				
9. Social perc.	.26	-.02	-.28	.71"	-.46'	.45'	-.16	.04			
10. Attractiveness	-.32	-.09	-.10	.41'	.33	.44'	.49"	.49"	.12		
11. Body build	-.07	.10	.16	-.36'	.24	.12	.11	.11	-.42'	.14	
12. POPULARITY	.35'	.06	.42'	.45'	.65"	.77"	.86"	.89"	.18	.54"	.21

Note. For sex variable, negative valence=girls; positive valence= boys.
For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4B

Intercorrelation matrix of all variables for school 2 (n=17)

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	-.16										
3. LOS	.21	-.06									
4. Agreeableness	.25	-.23	-.06								
5. Activity level	.13	.57"	.11	-.64"							
6. Communication	.55'	-.38	-.10	.63"	-.48'						
7. Interaction	.18	.42'	.17	-.61"	.75"	-.07					
8. Dominance	.35	.20	.29	-.42'	.58"	.17	.76"				
9. Social perc.	.59"	-.34	-.13	.86"	-.50'	.74"	-.46'	-.30			
10. Attractiveness	.48'	.19	.35	.00	.42'	.05	.29	.36	.12		
11. Body build	.14	.35	-.22	-.25	.45'	-.26	.17	.09	-.15	.40	
12. POPULARITY	.53'	.16	.39	.32	.13	.58"	.41'	.63"	.33	.49'	-.07

Note. For sex variable, negative valence=girls; positive valence= boys.
For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4C

Intercorrelation matrix of all variables for school 3 (n=24)

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	.40'										
3. LOS	.42'	.31									
4. Agreeableness	-.32	-.38'	-.56"								
5. Activity level	.49"	.48"	.65"	-.61"							
6. Communication	.42'	-.17	.49"	.03	.39'						
7. Interaction	.56"	.15	.55"	-.36'	.58"	.62"					
8. Dominance	.49"	.01	.42'	.02	.43'	.82"	.64"				
9. Social perc.	.69"	.05	.16	.15	.05	.21	.32	.27			
10. Attractiveness	.15	-.17	.23	.01	.22	.39'	.31	.29	.34		
11. Body build	-.26	-.12	.03	.14	-.12	.15	.24	-.04	-.03	.14	
12. POPULARITY	.25	-.04	.14	.43'	.07	.59"	.44'	.71"	.41'	.23	.16

Note. For sex variable, negative valence=girls; positive valence= boys.
For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4D

Intercorrelation matrix of all variables for school 4 (n=15)

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	.23										
3. LOS	.60"	.21									
4. Agreeableness	-.09	-.00	-.44'								
5. Activity level	.76"	.49'	.38	-.06							
6. Communication	.55'	.11	.18	.14	.65"						
7. Interaction	.58'	.39	.11	.42	.60"	.49'					
8. Dominance	.62"	.23	.09	.33	.62"	.75"	.82"				
9. Social perc.	.37	.29	-.06	.71"	.45'	.53'	.84"	.71"			
10. Attractiveness	.20	.00	-.10	.17	.44'	.64"	.16	.37	.42		
11. Body build	.07	.00	.31	-.49'	.26	.18	-.15	-.08	-.23	.11	
12. POPULARITY	.23	.21	-.12	.67"	.36	.55'	.66"	.65"	.90"	.46'	-.07

Note. For sex variable, negative valence=girls; positive valence= boys.
For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4E

Intercorrelation matrix of all variables for school 5 (n=21)

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	-.24										
3. LOS	.42'	-.41'									
4. Agreeableness	.39'	-.62"	.16								
5. Activity level	.02	.60"	-.07	-.52"							
6. Communication	.56"	-.45'	.29	.83"	-.20						
7. Interaction	.75"	-.28	.43'	.31	.30	.61"					
8. Dominance	.75"	-.55"	.56"	.60"	-.05	.79"	.85"				
9. Social perc.	.47'	-.56"	.25	.93"	-.42'	.87"	.46'	.72"			
10. Attractiveness	.08	-.18	.03	.56"	-.06	.37'	-.02	.18	.49'		
11. Body build	-.02	-.25	-.09	.19	-.26	.07	-.25	.04	.19	.11	
12 POPULARITY	.47'	-.66"	.39'	.85"	-.40'	.83"	.56"	.83"	.90"	.44'	.17

Note. For sex variable, negative valence=girls; positive valence= boys.
For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4F

Intercorrelation matrix of all variables for school 6 (n=16)

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	-.19										
3. LOS	.48'	.04									
4. Agreeableness	.56'	-.45'	.13								
5. Activity level	.06	.08	.26	-.30							
6. Communication	.78"	-.36	.39	.60"	.24						
7. Interaction	.53'	-.32	.35	.43'	.61"	.71"					
8. Dominance	.66"	-.25	.52'	.37	.61"	.78"	.91"				
9. Social perc.	.82"	-.07	.35	.72"	-.38	.70"	.27	.36			
10. Attractiveness	.33	.13	-.16	.47'	-.40	.18	-.07	-.05	.55'		
11. Body build	.20	-.05	-.16	.17	.20	.52'	.28	.22	.26	-.03	
12. POPULARITY	.75"	-.26	.41	.80"	,03	.82"	.62"	.60"	.82"	.44'	.32

Note. For sex variable, negative valence=girls; positive valence= boys.
For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4G

Intercorrelation matrix of all variables for school 7 (n=19)

	VARIABLE										
VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Sex	.10										
3. LOS	.63"	.25									
4. Agreeableness	-.49'	-.02	-.80"								
5. Activity level	.58"	.40'	.85"	-.75"							
6. Communication	.67"	-.04	.50'	-.21	.44'						
7. Interaction	.77"	-.16	.62"	-.47'	.61"	.69"					
8. Dominance	.66"	-.18	.64"	-.42'	.52'	.79"	.88"				
9. Social per.	.35	-.11	.16	.27	.05	.71"	.44'	.61"			
10. Attractiveness	-.06	-.30	-.03	.15	.07	.25	.10	.20	.42'		
11. Body build	.55"	-.17	.21	-.38	.29	.30	.34	.18	-.09	.02	
12. POPULARITY	.32	-.29	.23	.10	.17	.56"	.67"	.71"	.82"	.36	-.10

Note. For sex variable, negative valence=girls; positive valence= boys.
For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4H

Intercorrelation Matrix of All Variables for Girls Subsample (n=74)

	VARIABLE									
VARIABLE	1	2	3	4	5	6	7	8	9	10
1. Age	--									
2. LOS	.44"									
3. Agreeableness	.16	.18								
4. Activity level	.25'	.28"	.29"							
5. Communication	.49"	.27'	.44"	.35"						
6. Interaction	.27'	.21'	.06	.64"	.57"					
7. Dominance	.43"	.34"	.07	.67"	.69"	.83"				
8. Social perc.	.47"	.02	.75"	.05	.63"	.29"	.34"			
9. Attractiveness	.19	.17	.27'	.29"	.28"	.09	.26'	.29"		
10. Body build	.11	.12	.14	.22'	.19	.04	.07	.07	.14	
11. POPULARITY	.36"	.21'	.51"	.35"	.74"	.65"	.74"	.70"	.41"	.08

Note. For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

Table 4I

Intercorrelation Matrix of all Variables for Boys Subsample (n=61)

	VARIABLE									
VARIABLE	1	2	3	4	5	6	7	8	9	10
1. Age	--									
2. LOS	.47"									
3. Agreeableness	.09	.26'								
4. Activity level	.32"	.34"	.53"							
5. Communication	.43"	.30"	.30"	.02						
6. Interaction	.55"	.45"	.18	.56"	.41"					
7. Dominance	.50"	.43"	.08	.38"	.62"	.79"				
8. Social perc.	.34"	.07	.55"	.25'	.57"	.15	.33"			
9. Attractiveness	.11	.01	.23'	.22'	.23'	.20	.22'	.35"		
10. Body build	.14	.02	.22'	.18	.02	.11	.01	.12	.18	
11. POPULARITY	.35"	.24'	.43"	.06	.58"	.52"	.71"	.46"	.34"	.01

Note. For body build, negative valence=towards fat; positive valence=towards thin.

'p<.05

"p<.01

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