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I am submitting herewith a dissertation written by James Joseph Fox entitled "Setting Related Characteristics of Socially Withdrawn Behavior: An Observational Analysis." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

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SETTING-RELATED CHARACTERISTICS OF
SOCIALY WITHDRAWN BEHAVIOR:
AN OBSERVATIONAL ANALYSIS

A Dissertation
Presented for the
Doctor of Philosophy
Degree
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DEDICATION

This is dedicated to Mom and Dad for getting me started and to Carol, Sean and Kerry for keeping me going.

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ABSTRACT

The summary label socially withdrawn refers to a low incidence of positive social interaction between a child and his/her peers and implies that such a child will behave consistently across different situations. The purpose of this observational study was to empirically determine the degree to which individual, socially withdrawn children would exhibit correlated percentages of positive social interaction with peers in two separate play settings.

A preschool-age boy and girl from a Headstart classroom identified by their teacher as socially withdrawn were selected as the primary subjects. For comparison purposes, another boy and girl were selected from the same classroom who were identified by the teacher as socially active. These four subjects were the targets of direct, repeated observation of their naturally occurring behaviors during indoor and outdoor free play. Also, a picture sociometric assessment procedure was administered to each child in the classroom at the beginning and end of the study to index subjects' social standing. Data were analyzed graphically and statistically.

Generally, withdrawn subjects exhibited extremely low percentages of positive peer interaction while socially active subjects displayed relatively higher percentages in both play settings. However, considerable between session variability was evident in subjects' peer interaction percentages. At the level of individual behavior categories only the most withdrawn child exhibited correlated (consistent) percentages of peer interaction across play settings, although in terms of behavior patterns, both withdrawn and one socially active subject

displayed across-setting correlations. Sociometric measures were not sufficiently stable for further analysis.

The results of this study were equivocal in so far as establishing the across-setting consistency of withdrawn and socially active children's social behaviors. Rather, they more closely supported Bem and Allen's (1974) "differential consistency" hypothesis, i.e., that only some people are behaviorally consistent some time across some situations. That only one subject displayed across-setting correlations in her peer interaction tentatively supports the view that only some people are behaviorally consistent. Future research should attempt to replicate this finding with a larger sample and to search for situations and conditions functionally related to across-setting behavioral consistency.

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I. INTRODUCTION

The social development of young children is a long-standing concern of psychology. It is safe to say that the predominant research focus has been on the normal development of social relationships between a child, his/her parents, and his/her peers. A large body of descriptive and experimental research exists which has identified variables contributing to the normal socialization process (see for example, Hartup, 1970).

More recently, the focus of socialization research has broadened from the largely developmental approach of the past to include the empirical testing of therapeutic interventions for socially isolated children and the concomitant advocacy of social-emotional education for all children (Strain, Cooke, & Apolloni, 1976). Both material reinforcers (Sacks, Moxley, & Walls, 1975) and adult attention (Allen, Hart, Harris & Wolf, 1964; Hall & Broden, 1967; Hart, Reynolds, Baer, Brawley & Harris, 1968; Strain & Timm, 1974; Whitman, Mercurio & Caponigri, 1970) contingent upon interaction with peers have effectively increased the overall frequency or rate with which shy children engage peers in cooperative play. Other antecedent events such as peer prompting of social interaction (Fox & Saudargas, 1978; Shores & Timm, 1977) and modeling (Cooke & Apolloni, 1976; Evers & Schwarz, 1973; Jakubecheck & Smeriglio, 1976; Keller & Carlson, 1974; O'Connor, 1969, 1972; Paloutizian, Hasazi, Streifel & Edgar, 1971) have been similarly effective in increasing the social play behavior of socially isolated children.

Although an effective technology for identifying and intervening with children who are socially isolated seems to exist, critical questions remain unanswered. Specifically, what is the generality of shy, withdrawn behavior across different situations? An answer to this question is implied by the descriptors used to refer to young children who are deemed to be at risk as a result of their poor social functioning. Gottman (1977) has distinguished between those terms which have typically referred to children who display low rates of social behavior with peers--e.g., shy, socially withdrawn--and those which have referred to children who receive low sociometric ratings from peers--e.g., socially rejected. Regardless of the label or its operational definition, all of these terms imply that social isolation is a pervasive characteristic (behavioral or sociometric) of the child, that it extends across situations. Thus, a child who displays few social behaviors or is given low sociometric ratings in one situation is assumed to behave or to be rated similarly in other situations.

Unfortunately, empirical verification of this assumption is lacking. Investigators employing group designs with "normal" children have reported conflicting results. Although Roper and Hinde (1978) found consistency in children's individual play behaviors between inside to outside free play settings, Rose, Blank and Spalter (1975) reported that children's social interaction (as well as several other behaviors) varied across several different settings. Also, it appears that a number of settings or setting-related variables can affect the overall frequency of child-child interactions, including differences in age (Lougee, Grueinich & Hartup, 1977) or differences in sex between a child and his

playmates (Serbin, Tonick & Sternglanz, 1977) - the type of toys available (Quilitch & Risley, 1973), the amount of teacher/adult intervention in children's activities (O'Conner, 1975; Shores, Hester & Strain, 1976) and the responsiveness of the child's playmates (Wahler, 1967).

An even greater paucity of data exists in terms of an intra-individual analysis of children identified as socially withdrawn. Strain (1977) reported the successful use of peer prompters to increase the social responsivity of three behaviorally handicapped preschool boys. Each of the boys had been identified as withdrawn by the teacher, and although normative data were not provided, all three boys displayed what appeared to be low rates of social behavior in both the laboratory-treatment setting and regular classroom generalization setting. That is, as the "socially withdrawn" label would predict, all three boys displayed low levels of social interaction in both situations. However, this writer's re-analysis of Strain's (1977) data indicates non-significant, negative correlations between social behavior rates across the settings for two of the boys and a non-significant positive relationship for the third boy. On a day-to-day basis then, even the social behavior of children identified as socially withdrawn seems subject to situational fluctuations.

Presently, there seems to be serious lack of empirical support for basic assumptions in the identification and treatment of socially isolated children. In particular, does a child who displays low rates of social interaction in one setting (e.g., indoor free play) display similarly low rates in other settings (e.g., outdoor free play)?

It was the purpose of the present research to investigate the natural generalization of individual children's social and non-social behaviors across settings.

II. METHOD

Setting

The setting for this study was a Knoxville City School Headstart Classroom which was housed in a local, public elementary school. Observational data were collected both in the classroom (indoor free choice of activity time) and on the school playground (outdoor free play). The classroom was a single, undivided room measuring approximately seven meters by 10 meters. Available in the class room were a two-seat rocker, various dolls, trucks, cars, a dress-up and house play area, a record player and records, various table games (some of which could be used by two children and others by one child), and two painting easels with paper, paint, and brushes. Also, during the indoor free choice of time, the teacher and aides often provided craft or game activities at the tables but the children were always free to choose among and move between the activities.

The playground was asphalt-covered and enclosed on three sides by a chain-link fence and abutted the school on the fourth side. It measured approximately 20 by 40 meters and contained the following play equipment: a merry-go-round accomodating six to eight children, several stacks of tires attached to posts on which the children could climb, four rocking horses mounted on posts, two large tunnels through which children could walk or crawl and two swings. Also available to the children at this time were six tricycles which could be ridden in the playground area.

The social composition of the class was as follows. The teacher and two aides composed the adult staff. Also present during most of the observations was a volunteer "grandmother." All of the adults were women. At the beginning of this study, there were 18 children in the classroom (nine girls and nine boys; seven white and 11 black). Approximately one week after the observations began one boy who was not a subject in this study was removed from the program yielding a final population of 17 children. The children ranged in age from four to five years.

Subjects

Socially withdrawn subjects. Two preschool-age children who were identified as being socially withdrawn, (exhibiting low frequencies of positive interaction with peers) constituted the core subject sample of this study. Selection of these withdrawn subject children was accomplished in the following manner. The investigator asked the classroom teacher to indicate those children whom she, the teacher, had observed to interact infrequently or not at all with other children in the classroom. Subsequently, the teacher selected three children, two boys and a girl. Informal observation of these children by the investigator during free play sessions confirmed the teacher's report of social withdrawal for all three children. However, one of the boys was eliminated from consideration after discussion with the teacher indicated that the child's attendance was irregular. Next home visits were arranged by the Headstart social worker during which time the investigator explained the nature of the study to the children's parents and obtained informed consent for the children's participation.

The withdrawn subjects of this study were Jeff and Lana. Informal observation by the investigator indicated that Jeff was a pleasant, relatively tall, five year old boy whose speech was often indistinct and poorly articulated. Jeff appeared to alternate between periods of watching others at play and playing by himself. His initiations to peers were typically unsuccessful. Lana was an attractive four year old girl who seemed to play exclusively by herself and to confine her approaches to the adults in the classroom.

Comparison subject children. In addition to the socially withdrawn subjects, a non-identified or normal sample of two children, a girl and a boy, were selected from the same classroom but in a slightly different manner. Once the withdrawn subjects had been selected, the investigator asked the teacher to rank order all of the children in her class in terms of their ability to interact with their peers (see Appendix A). When this was done, the investigator randomly selected a boy and a girl from the upper half of these rankings. Regularity of attendance was also a selection criterion for these children. This second "normal" pair of children was included to provide further data on the setting generality of children's social behaviors and to indicate how the identified withdrawn subject might differ behaviorally from the non-identified children within and between the play settings.

These two comparison children were Paul and Betty. Paul was a four and a half year old boy who, from informal observation, appeared to alternate between parallel and cooperative play with peers. Betty seemed to be a very active five year old girl who spent most of her time interacting with her peers and occasionally watching other children

at play. Also, in contrast to Paul, Jeff, and Lana, Betty seemed to be the organizer of the cooperative play activities in which she engaged. All four children, withdrawn and comparison subjects, had attended this Headstart class in the six months prior to this study.

Direct Observational Measures and Procedures

Direct observational measures of children's free play behaviors constituted the primary dependent measures of this study. A 15 category observation system was used to record the non-social and social play behaviors of subject children as well as the approaches and responses of other children and adults to these subjects. A listing of the categories and their codes are presented in Table 1 and the behavior definitions are presented in Appendix B.

Because the incidence of the approach categories was so small, those categories were pooled with the group activity category for data analytic purposes at the end of the study. Four summary social interaction categories were derived using the following pooling procedure. All approaches by a subject child to an adult (AA), all approaches from an adult to a subject (AT) child and all intervals of group activity (GRP) scored along with an adult positive attention category (A+) were totaled into a single category, Social Interaction Adult Positive (SA+). Approach categories to (AC) and from other children (CT) and the group activity category (GRP) scored with a positive child attention category were collapsed into a single category, social interaction child positive (SC+) category. Any approach categories involving adults or children which were scored with a negative (A-; C-)

TABLE 1
Behavior Categories and Codes

Category	Code
<u>Non-social</u>	
Non-interaction	NI
Watching Others	WA
Solitary Activity	SOL
Parallel Activity	PRL
<u>Social Interaction</u>	
Target Approaches Adult	AA
Target Approaches Child	AC
Adult Approaches Target	AT
Child Approaches Target	CT
Group Activity	GRP
<u>Social Attention</u>	
Adult Social Attention Positive	A+
Adult Social Attention Negative	A-
Child Social Attention Positive	C+
Child Social Attention Negative	C-
<u>Residual</u>	
Slash	SL
Obstruct	OB

or no response were combined with those respective instances of group activity which had also been scored with an adult or child negative attention category. These resulting summary categories were social interaction adult negative (SA-) and social interaction child negative (SC-). Only these summary categories were then analyzed rather than the component approach and group activity categories.

An interval recording procedure was used in which the subject child was first observed for five seconds and then his/her behavior was scored during the next 10 seconds. Only one behavior category, with the exception, of course, of the social attention categories, was scored during an interval. That is, the observers scored that behavior which they judged to occur longest during the preceeding observation interval (Wintre and Webb, 1974). Each observer carried a tape player, pre-recorded cassette tape and earphone through which they monitored the onset of observation and recording intervals. No attempt was made to synchronize the observers except during interobserver agreement checks. Within an observation session each observer recorded the behavior of two subject children, a withdrawn and a normal child. This was done using a sequential sampling procedure in which the two children were observed alternately in four interval (one minute) blocks. Previous research (Thomson, Homlberg, & Baer, 1974) has demonstrated that this sequential sampling procedure more closely approximates whole session data for a single subject than do other sampling strategies. The order in which subjects were observed was counterbalanced by reversing the order every other day.

To assess the consistency of individual children's free play behaviors across different settings, observations of each of the four children were conducted during their regular indoor free play period and then again that same day during outdoor free play. These observations were conducted four days each week for three weeks. Indoor free play took place between 9:30 and 10:00 a.m. and outdoor free play between 10:30 and 11:00 a.m. A group instructional period typically separated the two free play periods.

Interobserver Agreement

The observers for this study were the author and an undergraduate student who received course credit for her participation in the study. Twelve interobserver agreement checks (six during indoor free play and six during outdoor free play) were conducted between the two observers across the three weeks of the study. Synchronization of observations during these checks was accomplished with the use of a single tape player and dual earphone adapter plug. To increase the likelihood that observations were simultaneous but independent during these checks, the observers stood several feet apart and did not discuss the children or their behaviors until the session was completed.

To calculate interobserver agreement each agreement check was first analyzed in the following way. The number of interval-by-interval occurrence agreements and the number and types of disagreements were tallied for each behavior and then entered into a two way contingency table (see Appendix C) in which the left to right diagonal of cells represented category-by-category occurrence agreements. Any cells not

on that diagonal represented disagreements. This allowed a quick visual analysis of interobserver agreement and disagreement in terms of: a) total occurrence agreement, b) total session agreement for each of the categories, and c) interval-by-interval agreement for each category. Agreement statistics appropriate to each of these levels of analysis were then calculated. These different agreement analyses were conducted for two reasons. First, two recent series of articles in the Journal of Applied Behavior Analysis have indicated the considerable controversy surrounding the "best" way to calculate observer agreement. It appears that little consensus exists on the "best" method. Secondly, several researchers (Hartman, 1977; Kent & Foster, 1977; Hollenbeck, 1978) have argued that there is no single "best" way but that agreement data should be analyzed in a manner and at a level which is congruent with subsequent data analyses. Since different levels of data were to be later analyzed in this study, agreement analyses appropriate to these levels were carried out.

Because of the number of behavior categories, it was thought desirable to have some overall index of observer agreement for each of the reliability checks. Therefore, overall agreement between observers for each reliability check was analyzed by computing "kappa" (Cohen, 1960) for total occurrence agreement. This single summary statistic, k , compares the proportion of total interval occurrence agreement to complete agreement and removes that proportion of agreement expected by chance. Perfect agreement is represented by a $k = 1.00$. Furthermore, kappa can be tested for significant departures from zero (no agreement) values. Obtained kappa values for the

reliability checks during indoor free play had a mean of .78 (range = .57 to 1.00) and during outdoor free play a mean of .80 (range = .63 to .94). All values of kappa were highly significant (range $p < .01$ to $p < .001$). Lower values of k were associated primarily with one subject child, Jeff.

Next, observer agreement was calculated in terms of the relative occurrence of the behaviors displayed by each child. Since later analyses examined the ordinal relationship between behaviors across settings, the question was asked, "To what extent did the observers agree on the most to least frequent behaviors for a given observation day?" To answer this question, the total percentage occurrence of each behavior category recorded by the primary observer was calculated and these percentage totals were assigned ranks, a rank of "1" being given that category which was of lowest (or zero) percentage occurrence. This was repeated for the session totals for that same child which had been recorded simultaneously by the second observer. Spearman rank order correlation coefficients were calculated between these paired sets of rankings. These indices of observer agreement ranged from $r_s = .823$ to $r_s = 1.00$ during indoor free play and $r_s = .842$ to $r_s = 1.00$ during outdoor free play. All coefficients were significant ($df = 8$, $p < .01$).

Finally, since individual categories were to be analyzed for their across setting consistency, it was necessary to analyze agreement at this level. Agreement for the individual behavior categories was first determined by computing weighted percent agreement coefficients (Harris & Lahey, 1977). Weighted percent agreement provides a single

index of interval-by-interval observer agreement for behaviors recorded in an interval fashion by combining both occurrence and non-occurrence agreement percentages and then removing that amount of chance agreement due to very high or low occurrence behaviors. The means and ranges of weighted percent agreement scores for each of the individual behavior categories during indoor and outdoor free play are presented in Table 2. It can be seen that for several behaviors mean percent agreement scores were below conventionally acceptable levels. These low agreement values were primarily associated with low frequencies of the particular category. That is, one observer recorded zero, one or two instances of a category while the second observer recorded one, two or three instances, respectively, of that same behavior. Also, most of the disagreements occurred within the same general categories, such that there were few instances of one observer scoring a social behavior category and the other observer scoring one of the non-social categories. Thus, when non-interaction, watching others, solitary and parallel play were collapsed into a single non-social behavior category, the range and mean weighted percentage of agreement for this summary category did attain acceptable levels of interval-by-interval observer agreement during both inside ($\bar{X}$ = 87 percent, range 77-100 percent) and outside free play ($\bar{X}$ = 91 percent, range = 79-100 percent).

Although interval-by-interval agreement is a desirable characteristic, no interval-by-interval comparisons were planned for this study. Only total session percentages for the individual categories were subjected to later analysis. Following Hartmann (1977) and Kent and Foster (1977), it was deemed necessary and sufficient for these analyses that observers

TABLE 2

Range and Mean Weighted Percentage Agreement
Scores for Each Behavior Category

Category	Indoor Free Play		Outdoor Free Play	
	Range	Mean	Range	Mean
NI	7-100%	48%	52-100%	88%
WA	73-100%	87%	3-100%	60%
SOL	52-100%	83%	41-100%	72%
PRL	25- 89%	61%	63-100%	84%
SA+	90-100%	97%	67-100%	87%
SA-	1-100%	35%	35-100%	87%
SC+	67-100%	92%	71-100%	90%
SC-	0-100%	67%	- - ^a	100%

^aThere was no range in agreement scores for this behavior since there was complete agreement on its every occurrence.

demonstrate agreement on the total session percentages for each category. Total session agreement was evaluated by calculating the Pearson product moment correlation coefficient between the total session scores of the primary observer with those of the second observer over the successive agreement checks (Hartmann, 1977; Kent & Foster, 1977). Correlation coefficients for each of the behavior categories during indoor and outdoor free play are shown in Table 3. Coefficients for all but two categories, social interaction adult negative (SA-) and social interaction child negative (SC-), were extremely high and statistically significant. That is, in terms of total session percentages there was considerable agreement between the two observers. In the case of SC- category, there was a single instance of disagreement in which one observer recorded one occurrence of that behavior and the second observer recorded none. In the other five agreement checks, the observers agreed completely on three occasions of non-occurrence and on two occasions of a single instance of that behavior. In the case of the SA- category, a similar pattern was noted. Both of these behaviors were reliable (characterized by high, significant correlation coefficients) at the total session level of analysis during outdoor play.

Sociometric Measures and Procedures

Although observational measures were the primary dependent variable in this study, sociometric measures were also obtained as an adjunctive dependent measure. Recent research (Gottman, 1977; Roper & Hinde, 1978) has suggested that social isolation may more accurately be represented by a constellation of behavioral and sociometric factors, such as

TABLE 3

Interobserver Pearson Product-Moment Correlation
Coefficients for Each Behavior Category

Category	Setting	
	Indoor	Outdoor
NI	.91**	.96***
WA	.99***	.89**
SOL	.96***	.86**
PRL	.92***	.97***
SA+	.99***	.98***
SA-	.20n.s.	.84*
SC+	.99***	.99***
SC-	.71n.s.	1.00***

***Significant at the .005 level.

**Significant at the .01 level.

*Significant at the .025 level.

relatively high amounts of parallel activity and sociometric rejection. The present study attempted to extend these findings by measuring the social status of teach-identified withdrawn and normal children among the children's peers.

To assess the sociometric status of the subject children, each child in the classroom was asked individually for his/her choice of playmates. That is, a picture sociometric technique (Gottman, 1977; Hartup, Glazer & Charlesworth, 1967) was used in which each child was asked to view a set of individual photographs of all children in the classroom, and then to choose the three children he/she preferred most as a playmate (sociometric acceptance) and the three he/she preferred least on that same dimension (sociometric rejection). During the first week of observation and again on the third week of observation during the group activity period, all children in the classroom were escorted individually by the author to a second, vacant classroom where the sociometric measures were obtained. Once in the classroom the author engaged the child in brief conversation while the child was allowed to adapt to the room. Next, the child was shown a bulletin board on which the children's photographs had been mounted and was asked if he/she recognized the children. To insure that this was so, the child was asked to name each of the children as the author pointed to the pictures. Any pictures that were unnamed or incorrectly named were given a second trial. If any picture was still unidentified the author named it for the child.

Next, the child was asked to, "Look at all the pictures carefully and show me the three boys and girls you would like to play with the

most." Either naming or pointing to the pictures was considered an acceptable response. If no response was given within approximately five seconds the request was repeated, and then, if no response was forthcoming, no response was marked by the child's name. If fewer than three responses were given the child was told, "Tell/show me another child you would really like to play with." The same procedure was followed for measurement of sociometric rejection except that the child was asked to, "Look at all of the pictures carefully and shown me the three boys and girls that you wouldn't like to play with." Finally, the child was thanked for his/her cooperation, returned to the classroom and the remaining children were individually administered the same procedure.

III. RESULTS

Validation of Social Withdrawal and Isolation

Level of interaction with other children. The major research question of this study concerned the degree to which the teacher-identified, socially withdrawn and socially active children displayed similar levels of social behavior across two different (indoor and outdoor) free play situations. However, before addressing this question it was necessary to determine if Lana and Jeff, the withdrawn subject children, did indeed display socially withdrawn behavior (e.g., low percentages of the social interaction child positive (SC+) behavior category) in these two situations. Table 4 displays the teacher's ranking of the subject children's social interaction with peers (a numerically high rank was assigned to the most social child and successively lower ranks to less socially active children), the means and range of percentages of SC+ for each subject child during indoor and outdoor free play. These data indicate a very close positive correspondence between teacher rankings of the withdrawn and comparison subject children's social interaction with peers and the subject's mean percentage of SC+ in both settings. However, the magnitude of the differences between Lana's and Jeff's mean percentages of SC+ and that of Paul were rather small.

Previously, behavioral researchers have identified those children as socially withdrawn whose social interaction with peers occurred during 15 percent or less of the observation intervals (O'Connor, 1969, 1972; Evers & Schwartz, 1973). Comparison of that criterion to the SC+

TABLE 4

Teacher Ranking of Social Interaction with Peers, Means, and
Ranges of Percentage of SC+ for Withdrawn and
Comparison Subjects

Subjects	Rank ^a	<u>Indoor Free Play</u>		<u>Outdoor Free Play</u>	
		Mean	Range	Mean	Range
<u>Withdrawn</u>					
Lana	1	7%	0-15%	14%	0-30%
Jeff	4	12%	0-48%	15%	0-25%
<u>Comparison</u>					
Paul	14	14%	0-30%	24%	7-36%
Betty	16	54%	8-97%	71%	9-95%

^aRank is from a total possible score of 18 with a rank of 1 indicating least social interaction with peers, 18 indicating most social interaction with peers.

ranges of the children in this study indicated that: (a) during some sessions the designated socially withdrawn children exceeded that criterion, and (b) during some sessions the designated socially active children fell below that criterion. That is, there was considerable intra-subject variability in session percentages of SC+. This variability is further depicted in Figure 1 which presents the session percentages of SC+ for each of the subject children. Looking at Figure 1, it can be seen that few of the withdrawn subject's (Lana and Jeff) session percentages of SC+ (sessions six and eight, respectively) exceeded the 15 percent criterion during indoor free play while during outdoor free play both withdrawn children exceeded the criterion on half of the observation sessions. However, neither Lana's nor Jeff's mean percentages of SC+ exceeded the criterion during indoor and outdoor free play.

In terms of the comparison subjects, Paul's behavior evidenced a similar but more pronounced trend. His mean percentage of SC+ during indoor free play fell below the 15 percent criterion, and seven of his 11 session percentages of that behavior also failed to reach that criterion. However, during outdoor free play this pattern was reversed so that both his mean percentage of SC+ and seven of his session percentages exceeded the 15 percent criterion. Betty's SC+ fell below the criterion level on only two occasions, once during indoor free play and once during outdoor free play. Also, both her indoor and outdoor mean percentages of SC+ exceeded the criterion.

Because of the considerable intra-subject variability in SC+ and the relatively small differences between Paul's mean percentages

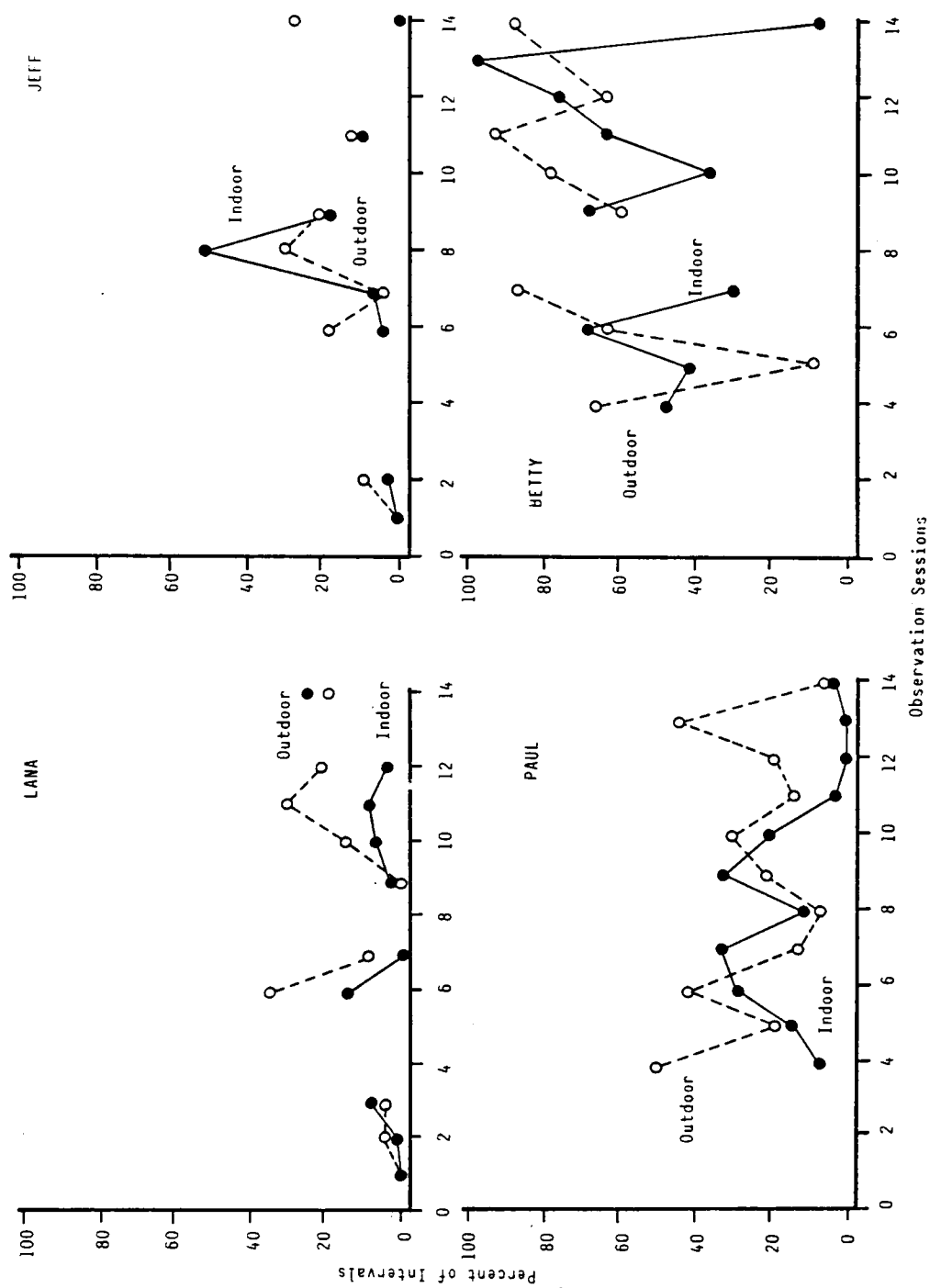


Figure 1. Percent of intervals of social interaction child position (SC+) for Lana, Jeff, Paul and Betty during indoor and outdoor free play observation sessions.

of SC+ and that of the withdrawn subjects, Lana and Jeff, it seemed appropriate to determine whether or not there were significant differences between the withdrawn and comparison children's SC+ percentages. Consequently, the Friedman two-way non-parametric analysis of variance (Siegel, 1956) was performed to assess the differences between the children's session percentages of SC+ during indoor and outdoor free play. Since there were unequal numbers of observations for the four children, a table of random numbers was used to select an unbiased, equal number of observations for each child (Jeff had the fewest observations, eight, so two sessions each from Betty's and Lana's data and three sessions from Paul's data were deleted randomly for the purposes of this test which requires equal number of observations). The resulting daily SC+ percentages were ordered into a two-way contingency table consisting of four columns (subject) and eight rows (observation days). Next, the percentages were ranked within each row across subjects from lowest to highest, the column ranks summed and the distribution of these column rank sums across subject children was tested to determine if it departed significantly from an even split using the Friedman test. The obtained distribution of rank sums was found to be significantly different from that expected by chance during both indoor ($Xr^2 = 13.01$, $df = 3$, $p < .01$) and outdoor ($Xr^2 = 12.64$, $df = 3$, $p < .001$) free play, indicating that reliable differences existed between the subject children's percentages of SC+. A post hoc comparison (Gibbons, 1976) of all possible pairs of subject children's rank sums indicated that Betty's SC+ percentages were

significantly greater than those of the withdrawn subjects, Lana and Jeff, during indoor and during outdoor free play. There were no other statistically significant differences between Paul's, Lana's and Jeff's SC+ percentages.

To briefly summarize, it appears that Lana and Jeff were accurately described as exhibiting socially withdrawn behavior. They were identified by their teacher as interacting infrequently with other children in the classroom. They were observed to spend relatively less time in positive social interaction with other children than were two other children who the teacher ranked as higher rate interactors. However, these differences were statistically reliable in only one case and there was considerable intra-subject variability in this peer interaction measure for all four children. Finally, Lana's and Jeff's mean percentage of SC+ fell within that range used by some behavioral researcher (e.g., O'Connor, 1969, 1972) to identify socially withdrawn children in other applied research studies.

Levels of parallel play and other categories. Since it has been argued that social isolation is a phenomenon distinct from and of greater clinical importance than social withdrawal, it was considered important to determine the degree to which Lana and Jeff displayed the characteristics of social isolation, i.e., relatively high incidence of parallel play and high peer sociometric rejection scores (Gottman, 1977). Figure 2 presents the session percentages of parallel play (PRL) for each subject child during indoor and outdoor free play. Again, it can be seen that there was considerable intra-subject variability in the daily percentages of parallel play. However, Lana and Jeff, the

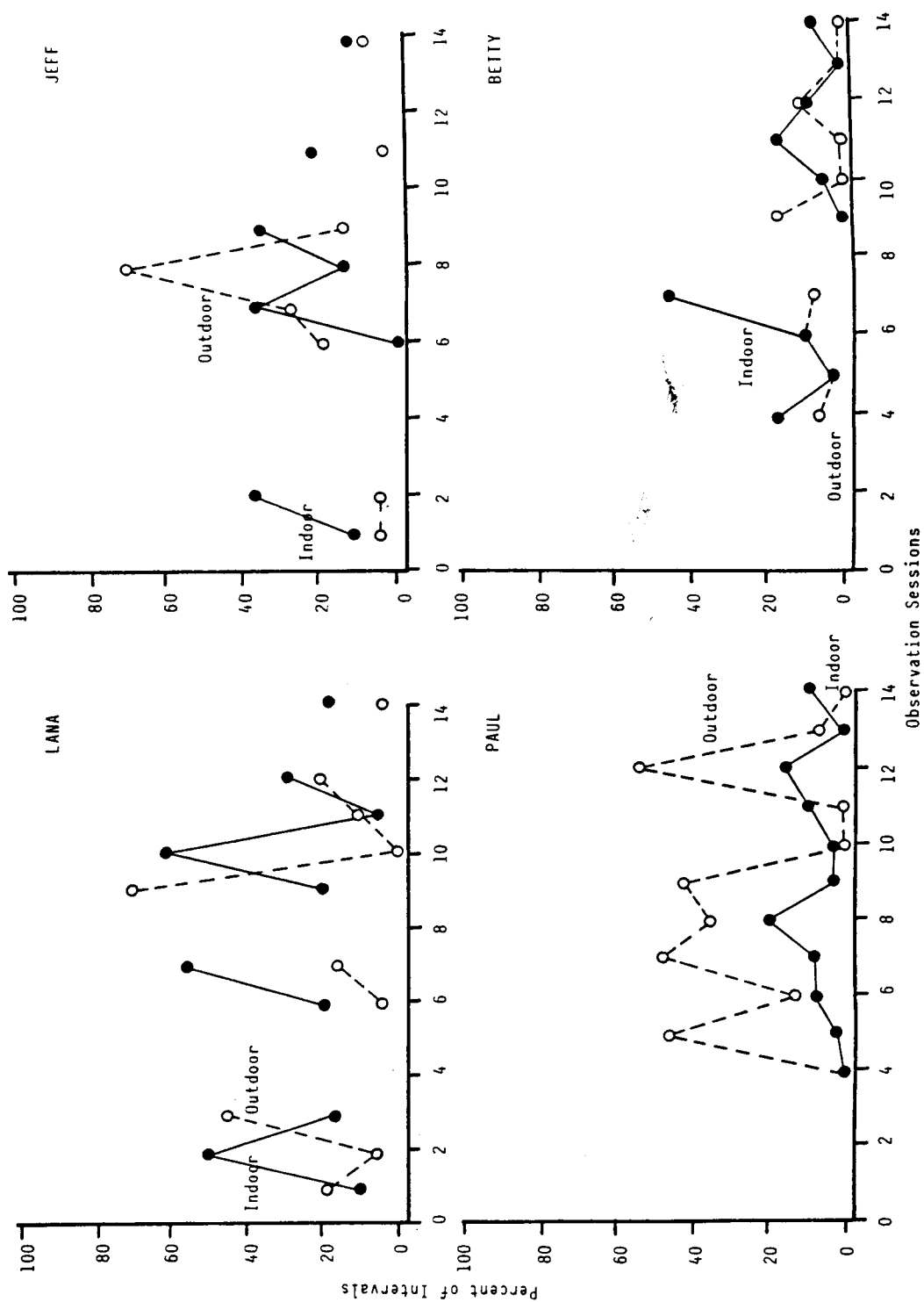


Figure 2. Percent of intervals of parallel play (PRL) for Lana, Jeff, Paul and Betty during indoor and outdoor free play observation sessions.

withdrawn children, generally appear to have displayed more parallel play than Betty or Paul, the comparison children, during indoor free play sessions. This differences appears to be maintained between Lana, Jeff, and Betty, again during outdoor free play, while Paul's overall level of parallel play appears to increase toward that of Lana and Jeff in this same setting.

Again, because of the degree of variability within and between subject children, nonparametric analyses of variance similar to those performed on the SC+ category were conducted with regard to the differences between subject children for all remaining behavior categories during indoor and outdoor free play. Parallel play was the only other category for which significant differences were found. The initial Friedman analysis of variance indicated significant differences between the subject children's parallel play during indoor free play ($X^2 = 13.35$, $df = 3$, $p < .001$) while parallel play differences during outdoor free play approached significance ($X^2 = 7.09$, $df = 3$, $p < .10$). Post hoc comparisons of the rank sums of withdrawn and comparison subject children's indoor parallel play indicated that Lana engaged in significantly more parallel play than did Betty or Paul. Although Jeff also displayed more parallel play than Betty or Paul (and slightly less than Lana) these differences were not statistically reliable. The means and ranges of non-interaction, watching others, solitary and parallel play for each subject child within both settings are presented in Table 5.

TABLE 5

Means and Ranges of Percentage of Non-interaction (NI), Watching Others (WA), Solitary Play (SOL), and Parallel Play (PRL) During Indoor and Outdoor Free Play

Subjects	Indoor Free Play			
	NI	WA	SOL	PRL
<u>Withdrawn</u>				
Lana	8% (4-12%)	23% (11-43%)	15% (0-30%)	29% (0-60%)
Jeff	9% (3-20%)	11% (4-32%)	17% (0-41%)	19% (0-40%)
<u>Comparison</u>				
Paul	8% (3-20%)	19% (8-50%)	24% (0-80%)	7% (0-20%)
Betty	8% (0-76%)	12% (0-25%)	4% (0-16%)	11% (0-50%)
<u>Outdoor Free Play</u>				
<u>Withdrawn</u>				
Lana	11% (0-32%)	12% (0-25%)	19% (0-55%)	22% (0-70%)
Jeff	8% (0-25%)	7% (0-15%)	26% (0-55%)	14% (0-70%)
<u>Comparison</u>				
Betty	9% (0-17%)	9% (0-20%)	17% (0-73%)	21% (0-55%)
Paul	5% (0-15%)	4% (0-15%)	5% (0-30%)	5% (0-70%)

Across Setting Consistency

Previous naturalistic observational studies of the across-setting consistency of children's social behavior have used individual behavior category measures as the unit of analysis (Roper & Hinde, 1978; Rose, Blank & Spalter, 1976). That is, the correlational relationship between some measure of a single behavior in one setting has been correlated with that same behavior measure in a second setting, significant positive correlations indicating consistency of that behavior across different situations. A second approach to across-setting consistency involves asking the question, "To what extent are children's behavior patterns replicated across two different situations (i.e., indoor and outdoor free play)?" Conceivably, individual behaviors might display sufficient variability between settings that, when considered singly, they are not correlated (i.e., inconsistent) across these settings. However, it is possible that the ordinal relationship between several behaviors displayed by a child in one setting may be similar to that of the same child in a second setting. For example, a child may display high percentages of social play, relative smaller percentages of solitary play, and yet smaller percentages of parallel play during indoor and also during outdoor free play. Thus, his/her behavior is similarly organized in these two settings. Both of these analytic approaches, individual behavior consistency and behavior pattern consistency, were employed in this study.

Consistency of individual behaviors. For each observation session the number of intervals in which a category was scored was first summed

and then this sum was divided by the total number of intervals in a session. This produced a session percentage occurrence score for each behavior category. Next, within each category, these session percentages occurrence scores during indoor free play were ranked from lowest to highest. A rank of "1" was assigned to that observation session with the lowest percentage occurrence of that behavior, 2 to the next lowest, and so on until all of the session percentages had been ranked. This ranking procedure was repeated separately for the session percentages obtained during outdoor free play. In this way, a paired set of rankings was obtained for each behavior category under the two setting conditions, indoor and outdoor free play.

To evaluate the session to session consistency of the ranked behavior across the two settings, Spearman rank order correlation coefficients were computed between the paired rankings of each behavior category. Table 6 presents the number of observation days and the rank order correlation coefficients for each of the behavior categories for both withdrawn and comparison subjects. Of the 32 total correlations (eight per child) only five attained significant values. None of the behaviors were significantly correlated for both socially withdrawn or both socially active children. That is, there were considerable individual differences in the few behaviors which displayed across-setting consistency. Betty, the most social child, did not display any statistically significant correlations in any of the individual behaviors between indoor and outdoor free play. There was a moderately high statistically significant association between Paul's negative interactions with other children (SC-) during indoor and outdoor free

TABLE 6

Spearman Rank Order Correlation Coefficients Between Indoor and Outdoor
Behavior Percentages for Withdrawn and Comparison Subjects

Subjects	n ^a	Behavior Categories							
		NI	WA	SOL	PRL	SA+	SA-	SC+	SC-
<u>Withdrawn</u>									
Lana	10	-.01	-.49	-.37	-.39	.65*	.18	.66*	.84**
Jeff	8	-.01	.73*	.07	.14	.63	-.39	.46	.47
<u>Comparison</u>									
Paul	11	.52	-.15	.14	.37	.30	-.47	.32	.76**
Betty	10	-.13	-.26	.27	.06	.34	.17	-.08	.49

^an is the number of observations per subject child.

*Significant at the .05 level.

**Significant at the .01 level.

play. For the withdrawn subjects, Lana's positive interactions with adults (SA+) and her positive and negative interactions with children (SC+ and SC-) were characterized by moderate to high significant correlations while a moderate though significant relationship was obtained between Jeff's indoor and outdoor percentages of watching others (WA). Finally, all non-social behavior percentages were collapsed into a single non-social behavior category percentage score during indoor and during outdoor free play sessions and intra-subject rank order correlations were calculated for this total non-social behavior. Only Lana's (the most withdrawn child) total percentages of non-social behavior displayed a significant positive correlation ($r_s = .61$, $n = 10$, $p < .05$) indicating that on a day-to-day basis her total non-social behavior was moderately consistent across indoor and outdoor free play settings. None of the other children's non-social behavior category correlations attained significant values.

Consistency of behavior patterns. Figure 3 presents the mean percentages of each behavior during indoor and outdoor free play for each child. There seems to be a rather close correspondence between the ordinal relationship of Betty's mean behavior percentages during indoor and outdoor play, somewhat less correspondence for Lana and Jeff and least for Paul.

Quantitative analysis of these across-setting behavior pattern relationships for each subject child was accomplished by first rank ordering the mean behavior percentages from lowest to highest during indoor and again during outdoor play. Next, Spearman rank order

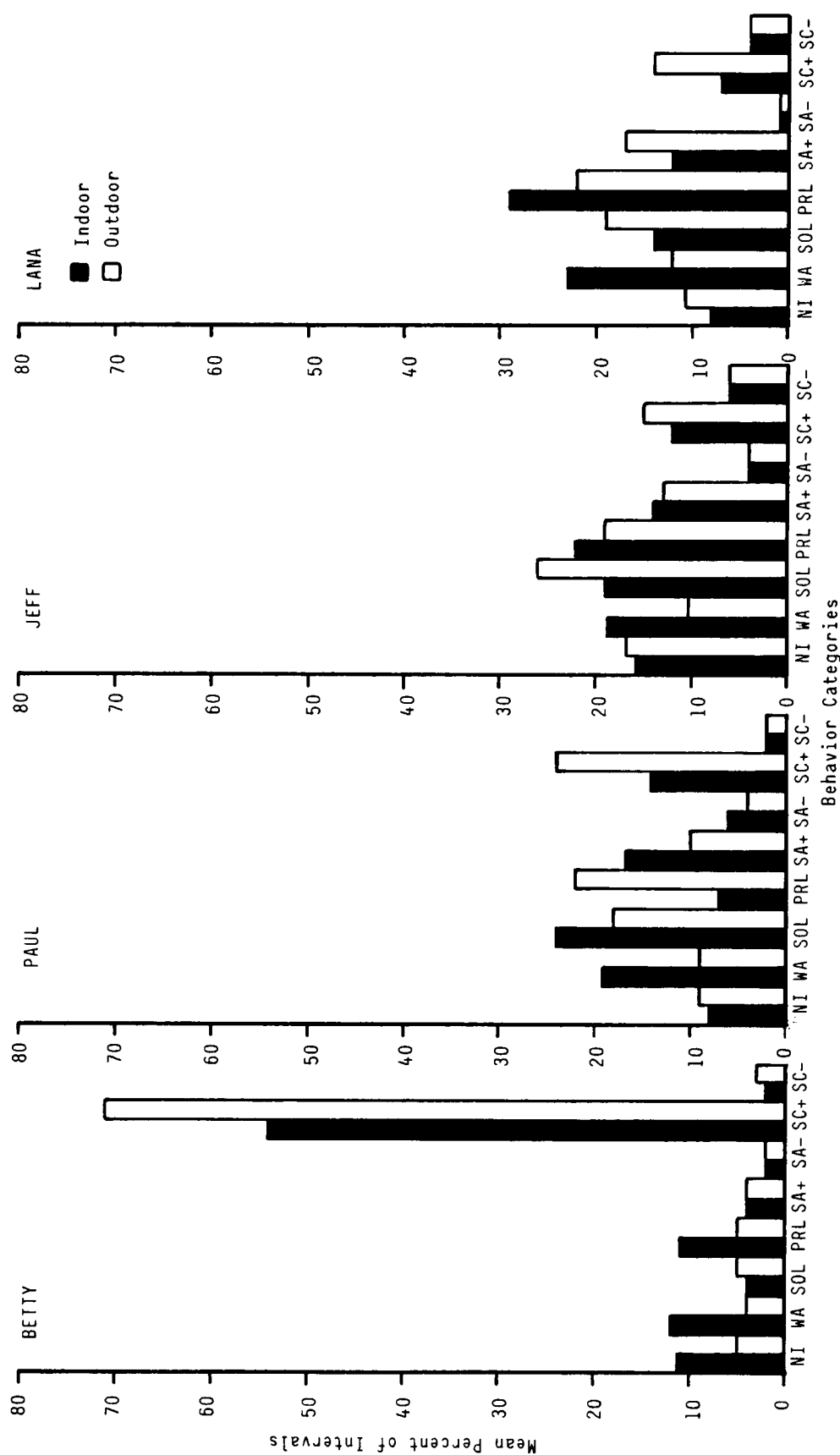


Figure 3. Mean percent of intervals of individual non-social and summary social behavior categories for Lana, Jeff, Paul and Betty during indoor and outdoor free play.

correlation coefficients were computed between these paired sets of rankings. The results of the analyses are presented in Table 7. Jeff, Lana, and Betty, in that order, displayed significant positive relationships between their indoor and outdoor mean behavior percentages, i.e., across-setting consistency of behavior patterns. Although Paul's mean behavior percentages displayed a positive relationship across the two settings it was non-significant. Looking again at Figure 3 it appears that the significant correlations are largely due to across-setting consistency of the four summary social interaction categories (SA+, SA-, SC+, SC-).

Similar intra-subject rank order correlational analyses of the consistency between indoor and outdoor play behavior patterns were conducted on session-by-session basis. Table 8 presents these data. Of the 39 coefficients computed in this manner, eight were significant. On three of 10 observation sessions, Betty's behavior patterns were consistent or significantly correlated across indoor and outdoor free play. Similarly, for three of Lana's 10 observation sessions her behavior patterns were consistent across-settings, while Jeff's behavior patterns were consistent on only two of eight observation sessions. There were no observation sessions during which Paul's behavior patterns were correlated across the two settings. Thus, on a session-to-session basis the ordinal relationships between behaviors were not typically consistent from one setting to another. However, the overall tendency, as indicated by the mean percentages of the behaviors, was for the two socially withdrawn children, Lana and Jeff, and for the most

TABLE 7

Spearman Rank Order Correlation Coefficients Between
Mean Indoor and Outdoor Behavior Patterns

Subjects	n ^a	Spearman Coefficient
<u>Withdrawn</u>		
Lana	8	.809*
Jeff	8	.887**
<u>Comparison</u>		
Paul	8	.494n.s.
Betty	8	.804*

^an is the number of paired behaviors.

*Significant at the .02 level.

**Significant at the .01 level.

TABLE 8

Spearman Rank Order Correlation Coefficient Between Session
Behavior Patterns During Indoor and Outdoor Free Play

Subjects	n ^a	Observation Session													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
<u>Withdrawn</u>															
Lana	8	.49	-.04	.77*	--	--	.24	.73*	--	.79**	.34	.07	.31	.33	--
Jeff	8	.88**	.32	--	--	--	.21	.20	.67*	.27	--	.20	--	--	-.21
<u>Comparison</u>															
Paul	8	.11	.30	.14	.61	.30	.14	.39	.60	.22	.54	.55	.21	.46	-.26
Betty	8	--	--	.42	.83***	.29	.42	.62*	--	.39	.22	.35	.30	1.00***	.42

^an is the number of behavior categories compared across settings for each subject child.

*Significant at the .05 level.

**Significant at the .02 level.

***Significant at the .01 level.

socially active child, Betty, to display across-setting consistency in their behavior patterns.

The across-setting consistency of the children's behavior patterns was also analyzed when non-interaction, watching others, solitary play, and parallel play were collapsed into the single non-social (NS) play behavior category. Figure 4 presents the mean percentages non-social play behavior, and social interaction with adults (SA+, SA-) and with children (SC+, SC-) for each subject child during indoor and outdoor free play. Collapsing of the non-social categories resulted in considerably more across-setting consistency in the behavior patterns for all four children. The ordinal relationship between the mean percentages of the five behavior categories remains virtually unchanged across indoor and outdoor settings for Lana, Jeff and Betty. Paul's pattern changed somewhat between settings in that his SC+ was the second highest behavior during outdoor free play while it was third highest (SA+ being the second highest) during indoor free play.

Table 9 presents the Spearman rank order correlation coefficients for the withdrawn and comparison children between indoor and outdoor behavior patterns using the summary, non-social category. The paired comparisons are presented in terms of both session percentages and overall (mean) session percentages. Again, Lana's, Jeff's and Betty's coefficients for the mean percentages (represented in Figure 4) were significantly correlated, i.e., their behavior patterns were consistent, across-setting, while Paul's approached significance. In terms of session-by-session analyses of the consistency of these behavior patterns, Lana's indoor and outdoor behavior patterns were significantly correlated

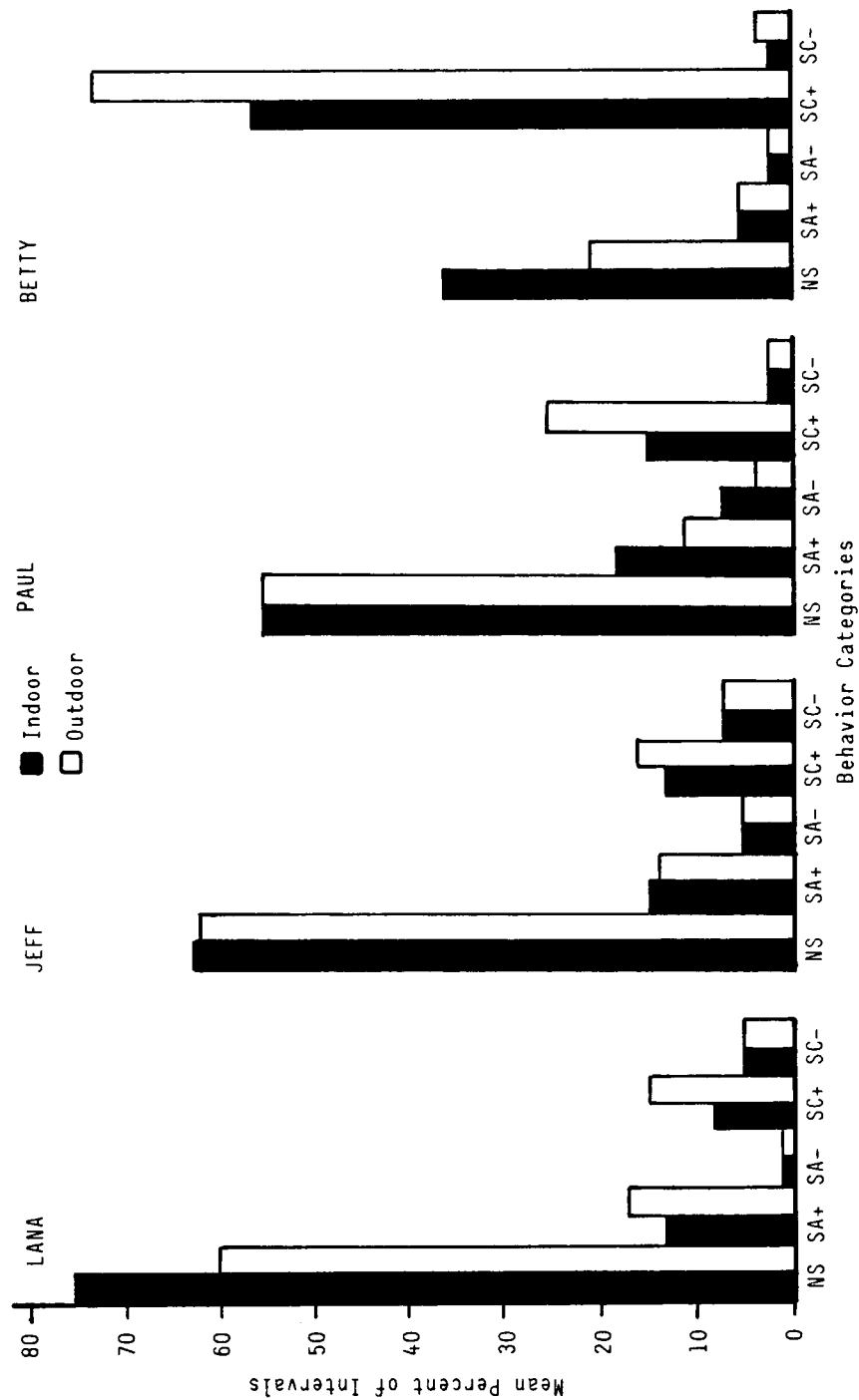


Figure 4. Mean percent of intervals of summary non-social (LNS) and social behavior categories for Lana, Jeff, Paul and Betty during indoor and outdoor free play.

TABLE 9

Spearman Rank Order Correlation Coefficients for Mean and Session Behavior
Patterns Between Indoor and Outdoor Free Play Using the
Summary Non-social Behavior Category

Subjects	a n	Overall Pattern	Observation Session													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14
<u>Withdrawn</u>																
Lana	5	1.00**	.93*	.88*	.98*	--	--	.60	.78	--	.94*	1.00**	.38	.88	.68	--
Jeff	5	.90*	1.00**	.20	--	--	--	.90*	.68	.83	.83	--	.55	--	.28	--
<u>Comparison</u>																
Paul	5	.88	--	--	--	.73	.88	.60	.90*	.30	.80	.68	.90*	.70	.63	.18
Betty	5	.98*	--	--	--	1.00*	.68	.90*	.83	--	.93*	.33	.43	.90*	1.00*	.63

^an is the number of behavior categories compared across settings for each subject child.

*Significant at the .05 level.

**Significant at the .01 level.

on four of her 10 observation sessions. However, Jeff's behavior patterns were significantly correlated across the free play settings on only two of his eight observation sessions. As regards the socially active children, Betty's behavior patterns were significantly correlated across-settings on five of 10 days while Paul's behavior patterns demonstrated significant cross-setting correlations on only two of 11 observation sessions.

Setting Related Differences

The previous section analyzed what were essentially the intra-subject similarities in behavior across indoor and outdoor free play. In contrast, this section analyzes intra-subject differences in behavior between settings. Although the children's overall behavior patterns appeared to be quite similar (associated) across the two settings, this does not mean that the percentages of each behavior were exactly the same in both settings. Indeed the lack of correlation between settings for individual categories of behavior suggests that there were within category differences between settings. An extremely literal interpretation of the consistency or trait model of social withdrawal predicts no differences between the percentages of social behavior in the two settings while a "situational" approach predicts that such differences should be observed.

It seems easiest to begin this analysis by examining the behavior patterns, the mean percentages of each behavior, for the four subject children (Figure 3, p.33). There appears to be considerable variability between subject children in terms of the specific behaviors whose mean

percentages change between settings and the direction of this change. One exception, however, is the category of SC+. For all four subject children the mean percentages of SC+ was greater during outdoor than indoor free play.

When the session percentages of SC+ for each child in the two settings are examined (see Figure 1, p. 23), it is obvious that outdoor percentages of SC+ do not always exceed indoor percentages for any of the subject children. Table 10 presents for each subject child the number of observation sessions in which the percentage of SC+ was greater in one play setting than the other and those occasions when the percentages were equal. Clearly, there were few sessions when the SC+ percentages were equal in both settings. Furthermore, these data indicate that for all subjects there were relatively more sessions which outdoor percentages of SC+ were greater than indoor percentages.

Since differences between the percentages of SC+ in the two settings were quite small during some sessions, Wilcoxon-matched pairs non-parametric differences tests were conducted for each subject child, testing the significance of the difference between that child's indoor and outdoor SC+ percentages. None of the differences were found to be significant.

Subject Sociometric Standing

As noted earlier social isolation, as opposed to social withdrawal, has been defined in part by peers social rejection of a child measured through the picture sociometric technique (Gottman, 1977). This final section analyzed such data for the teacher-identified withdrawn and socially active subject children in this study.

TABLE 10

Number of Observation Sessions in Which SC+ Percentages
Were Greater in One Free Play Setting Than the
Other or Were Equal

Subjects	n ^a	Indoor SC+ Greater	Outdoor SC+ Greater	Equal
<u>Withdrawn</u>				
Lana	10	3	6	1
Jeff	8	2	4	2
<u>Comparison</u>				
Paul	11	3	8	0
Betty	10	4	5	1

^an is the number of observation sessions for a subject child.

Sociometric data were analyzed first to determine their test-retest reliability. First, following Gottman (1977), the number of times a child was chosen as a preferred playmate (positive choice) and the number of times a child was chosen as a least preferred playmate (negative choice) was totalled separately. These totals represented, respectively, a child's sociometric acceptance score and his/her sociometric rejection score. Also, the rejection score was subtracted from the acceptance score, yielding a third score which represented the child's sociometric status. All three scores (acceptance, rejection and sociometric status) were calculated for both the first and second administration of the peer sociometric technique. This yielded a paired set for each type of score for each child in the classroom including, of course, the subject children.

Next, within each type of score the paired scores were assigned ranks with "1" being assigned to the child with the lowest score and each successively higher score being assigned to the next highest rank. (Since sociometric status scores could assume a positive, negative, or zero value, negative scores were assigned lower ranks than zero scores which were assigned lower ranks than positive scores.) Finally, Spearman rank order correlation coefficients were computed within score types between the paired sets of rankings to determine the stability (test-retest reliability) of the sociometric scores over time. These rank order correlation coefficients were: (a) sociometric acceptance $r_s = .202$, $df = 17$; (b) sociometric rejection $r_s = .151$, $df = 17$; and (c) sociometric status, $r_s = .177$, $df = 17$. None of these correlations was significant, indicating that none of the sociometric scores was a stable

dependable measure. These same three scores are presented in Table 11 for the subject children only. There was little stability for any of the subject children on any of these indices. Lana's acceptance score remained the same from the first to the second assessment period but her rejection and status scores changed considerably. Jeff's rejection score remained the same but his acceptance and status scores changes. Paul was the only subject child whose sociometric status score remained constant.

TABLE 11

Peer Sociometric Scores for Each Subject Child
at First and Second Assessment Periods

Subjects	Acceptance ^a		Rejection ^b		Status ^c	
	1st	2nd	1st	2nd	1st	2nd
<u>Withdrawn</u>						
Lana	1	1	5	1	-4	0
Jeff	2	1	2	2	0	-1
<u>Comparison</u>						
Paul	4	1	6	3	-2	-2
Betty	3	6	3	4	0	2

^aAcceptance score is the total number of children who picked the child as a most favored playmate.

^bRejection score is the total number of children who picked the child as a least favored playmate.

^cStatus score is the arithmetic difference between the acceptance and rejection scores.

IV. DISCUSSION

The present study was concerned with determining the degree of naturally-occurring across-setting consistency (or generalization) in the social behavior of socially withdrawn children. To this end the social and non-social free-play behaviors of two children who had been identified by their classroom teacher as interacting infrequently or not at all with peers were observed during their regular indoor and outdoor free-play periods. For comparison purposes, two other children from the same classroom who were identified by their teacher as socially active were similarly observed. Specifically, it was asked, "Will a child display similar (consistent) percentages of positive peer interaction in the two play settings?" The answer, or answers, to this question were not so clear cut, but, rather, appear to depend on the level and manner of data analysis.

Several aspects of the data supported the view that a child's positive social exchanges with his/her classmates were consistent across play settings. First, intra-subject analyses revealed that although the outdoor free-play setting tended to be associated with higher percentages of positive interaction with peers, none of these intra-subject differences was statistically significant. Therefore, a hypothesis of situationally-related differences was not supported. Secondly, inter-subject comparisons of the children's mean percentages of positive peer interaction indicated that they generally maintained the same relative position to each other across the settings. That is, the two withdrawn children tended to display less interaction with

peers than did the designated socially active children. Third, intra-subject comparisons of the mean percentages of the children's various non-social and social play behaviors indicated that Lana, Jeff, and Betty (the two withdrawn children and the most socially active child), displayed highly correlated patterns of these behaviors across the two settings.

The above findings would lend support to and extend the findings of Roper and Hinde (1978) who measured the free-play behaviors of several groups of preschool children and found that the children tended to maintain their relative position to each other in terms of the incidence of several social and non-social behavior categories during indoor and outdoor free play. In that study it was not possible to determine if such consistency was primarily due to socially active or withdrawn children or both. The current study indicates that not only is there inter-subject consistency but also intra-subject consistency in the overall percentage of positive peer interaction for both socially withdrawn and socially active children across play settings.

However, closer inspection of the data from the present study suggests that social withdrawal and participation are not the unitary phenomena which they seem to imply. From a strict consistency interpretation of social withdrawal and social participation one would expect there to be a similar trend in a child's percentage of time spent in peer interaction during indoor and outdoor free play. Yet, only one of the four children, Lana, displayed a statistically significant correlation between her indoor and outdoor percentages

of positive peer interaction and this correlation was quite moderate. Thus, except for Lana, the children's social exchanges with peers in one setting were not very precise predictors of similar behavior in a second setting that same day.

Perhaps more damaging to the view of social withdrawal/participation as a consistent, trait-like phenomenon was the considerable intra-subject variability of peer interaction in both indoor and outdoor play settings. Specifically, there were some observation sessions in which the "withdrawn" children engaged in rather substantial percentages of peer interaction (e.g., 30 to 40 percent of the observation intervals). Conversely, there were occasions in which the "socially active" children rarely interacted with other children, i.e., displayed socially withdrawn behavior. A related finding was that the withdrawn children sometimes exceeded O'Connor's (1969, 1972) criterion level of peer interaction for identifying social withdrawal, while the designated socially active children sometimes fell short of that same criterion.

These more molecular analyses then would argue for a rather strongly stated situationist view of social withdrawal and participation. That is, not only was there a substantial lack of similarity in the session-to-session trends in the subject children's peer interactions (Lana was the exception), this intra-subject, across-setting variability was virtually matched by behavioral variability within settings. It would appear then that the results of the current study further accentuate the conflict between the consistency and

specificity views of children's social behavior (Roper & Hinde, 1978; Rose, Blank, & Spalter, 1975), the more molar analyses of this study supporting the across-setting consistency view and the more molecular analyses supporting the specificity position. Possibly, future observational studies with larger sample sizes will produce more definitive results.

Yet, such a clear empirical victory for either view seems highly unlikely. First, a hard consistency (or specificity) position does not fit very well with conventional views of human behavior. For example, in what is perhaps one of the earliest clinical descriptions of "morbid shyness," Campbell (1897) alluded to consistencies and inconsistencies in the manifestation of that disorder:

Morbid shyness not infrequently occurs in men of fine physique and of great animal courage. One sufferer of my acquaintance took great pleasure in riding and breaking-in the worst tempered and most unruly horses, and yet rather than face an acquaintance in a country lane would break through a hedge if there was no other means of avoiding him.

Secondly, the more general debate over and inquiry into behavioral consistency has ebbed and flowed without clear resolution for at least 50 years, that is, since Harshorne and May's (1928, 1929) startling findings regarding the lack of consistency in diverse measures of children's moral behavior. In the intervening years both consistency and specificity proponents have been able to marshal some data to support their respective positions (Mischel, 1968). Third, a somewhat similarly confusing state of affairs has emerged in the behavior modification literature where the consistency issue has been addressed by another name: generalization of behavior change.

For example, in the behavioral treatment of social withdrawal, investigators have been interested in not only the degree to which children's social functioning has improved in treatment settings but also in other naturally occurring social contexts where the treatment has not yet been applied. Typically, such unprogrammed consistency has been the exception rather than the rule for social behavior interventions in particular (Strain & Fox, 1981) and behavioral interventions in general (Keeley, Shemberg, & Carbonell, 1976).

Perhaps what is needed then is a reconsideration of the notion of across-setting behavioral consistency, both generally and as it applies to social withdrawal. Such a revised concept would have to be able to encompass both viewpoints. Recall that in the present study, regardless of the level of analysis, not all children displayed across-setting consistency in their free play behaviors. A potential solution to these conflicting data and that of prior research has been offered by Bem and Allen (1974) in the form of a differential consistency hypothesis. Simply put, this hypothesis proposes that only some of the people are consistent in their behavior some of the time or across only some situations. Consistency would depend upon both person and setting variables. They go on to suggest that researchers have made two mistakes in searching for cross-situational consistency. The first error has been that individuals who display across-setting consistency in their behavior have been grouped together and their data analyzed along with those who are inconsistent, thereby obscuring or attenuating the instances of consistency. The second,

related error has been that researchers have decided arbitrarily in what situations and in what specific forms behavioral consistency would appear. In a recent review of the literature concerning behavioral covariation, Wahler and Fox (1980) noted the apparently idiosyncratic manner in which behavior comes to be organized. That is, the behaviors of an individual which have been empirically found to covary and the occasions and situations in which these covariations have been found quite often are not logically deductible.

In support of their hypothesis Bem and Allen (1974) reported the results of a study in which college student subjects could be easily differentiated into two groups on the basis of their responses to a rather generally phrased rating scale item (how friendly the subject was from one situation to another). These prior, global self-ratings were revealed to have a positive relationship to later, more extensive ratings of the friendliness of the subject which were generated by the subject, his/her parents, and by peers and with two direct observational measures of the subjects' friendly conversation with experimental confederates. More recently in a study of the across-setting consistency of children identified by school personnel as either aggressive or prosocial, Harris (1979) found that prosocial children displayed considerable rank order consistency in their rates of aggressive, noxious behaviors while the aggressive group displayed no such consistency. However, an analysis of the behaviors of the most aggressive child in the class revealed that he did display considerable across-setting consistency in the relative incidence of his various noxious behaviors. Harris interpreted her findings as supporting the

differential consistency concept in that only some of the children, the prosocial ones and the one "hyper-aggressive" boy, displayed across-setting consistency.

In a somewhat similar fashion the results of the present study suggest that, like friendliness in college students (Bem & Allen, 1974) and aggression in elementary school-age children (Harris, 1979), preschool children are differentially consistent in their social interactions with peers. At the broadest level of analysis three of four subject children exhibited highly correlated patterns of social and non-social play behavior across indoor and outdoor free play settings. Also, at the most particular level of analysis only one of the two teacher-identified withdrawn children (and neither of the socially active children) displayed a cross-setting relationship in the percentage of time spent in positive interaction with peers.

If the data regarding subject children's social withdrawal presented a mixed bag of results, so too did those data dealing with other indices of the children's social development and their social isolation. One might reasonably expect that the withdrawn children of this study would be distinguished from their socially active counterparts by relatively higher levels of more immature play behavior such as solitary play and onlooker behavior (Parten, 1932; Barnes, 1971). Yet such categories as non-interaction, watching others, and solitary play were not found to yield significant differences between withdrawn and socially active subjects. Instead the category of parallel play, a somewhat more advanced behavior on Parten's continuum of

social participation, was to some degree found to occur more often in withdrawn than in socially active children. Other recent studies of children's free play behavior have suggested a more complex role is played by parallel play. For example, Roper and Hinde (1978) factor analyzed children's frequencies of the various play categories and found that the percent of time that children spent in cooperative play with peers was inversely related to their time spent in parallel play and uncorrelated with their time spent in solitary play. It was concluded by those investigators that parallel, not solitary, play was indicative of less advanced social development. Smith (1978) noted in a longitudinal study of children's free play behavior that while solitary play tended to decrease and group play increase as children got older, the level of parallel play did not vary much in overall occurrence. Smith's (1978) analysis of the transitional probabilities between play states suggested that parallel play was often followed by episodes of group interactive play. Bakemann and Brownlee (1980) have provided confirmation of this occasion setting function of parallel play. Interestingly enough, in a much earlier though less technically sophisticated study of nursery school children's play, Mallay (1935a, 1936b) found that parallel activity was a necessary component of behavioral chains which eventually led to successful social interaction with peers. In this context, the finding of the present study which showed that withdrawn children engage in more parallel play than do socially active children makes sense. That is, high levels of parallel play indicate that, for some reason, withdrawn children fail to make

the successful transition to cooperative play with peers, remaining in a "holding pattern," perhaps of parallel play.

The data regarding the sociometric standing of the withdrawn and socially active subjects were less encouraging. Recall that previously Gottman (1977) reported that social withdrawal, the low rate of positive interaction between a child and his/her peers, and social isolation, sociometrically measured rejection of a child by his/her peers, appeared to be empirically distinguishable phenomena. Since rate measures of interaction have yet to be tied to later indices of poor social functioning while sociometric measures have demonstrated such predictive relationships (Roff, Sells, & Golden, 1972), Gottman and others (e.g., Asher & Oden, 1977) have argued that social isolation is of greater clinical importance. Consequently, the present study sought to systematically replicate the picture sociometric procedure employed by Gottman (1977) to determine whether or not sociometric indices would discriminate between those children at opposite ends of the social interaction continuum. Although high sociometric rejection scores were not differentially associated with the socially withdrawn subjects of this study during the first administration of the picture sociometric instrument (as Gottman's study would predict), there was an inverse relationship between that sociometric index and subjects' mean percentage of peer interaction at the second sociometric assessment! Furthermore, none of the sociometric scores (acceptance, rejection, and status) were found to be reliable over a 10 day test-retest interval, either for the subjects themselves or for the classroom as a whole. Consequently, no definitive statements

can be made in regard to the relationship between social withdrawal/participation and the social isolation of subject children in this study.

The reason for the failure of the sociometric data to provide dependable measures of social standing in the present study is unclear. The picture sociometric technique was originally developed specifically for this age population (Marshall & McCandless, 1957). It is noteworthy that while earlier investigations of the short-term test-retest reliability of sociometric instruments have shown acceptance scores to attain moderate reliability coefficients rather consistently in preschool populations, rejection scores have been characterized by more variable reliability coefficients (Moore & Updegraff, 1964; Hartup et al., 1967). Too, Gottman (1977) did not report the test-retest reliability of his sociometric measures. In the present study this investigator noted that the children often did not appear to understand the sociometric selection task although precautions were taken to make the task explicit and virtually all children were able to accurately recognize their classmates' photos. Several children, after selecting three liked/unliked classmates, would continue to point to additional pictures. On several occasions, a child would choose the same peer as a liked and as a disliked playmate. Recently, this investigator and several colleagues conducted a pilot study in which two different observation systems for the assessment of preschoolers' social interaction were compared and picture sociometric data were also obtained. Similar difficulties were reported in getting children to appropriately respond to the sociometric tasks. As one

might expect, the short (one week) and long term (one month) test-retest reliabilities of the several sociometric scores were quite low and non-significant. It would appear advisable then to further investigate the applicability and appropriateness of sociometric assessment with very young children.

The conceptual, research, and clinical-practical implications of the present study are several. First, the results of this study indicate further support for the differential consistency hypothesis as opposed to the hardline, traditional behavioral consistency or specificity positions. Only some of the subject children were consistent in their free play or social interaction behaviors some of the time. Of course, the present study is more suggestive in this respect than definitive. Replication of this study with larger numbers of withdrawn and socially active children would further strengthen the case for differential consistency in children's social interaction with peers. However, the intra-individual focus of this study has been lacking in previous empirical examinations of across-setting consistency (Bem & Allen, 1974; Harris, 1979) where the analytic approach was largely or exclusively between subjects. The present assessment of children's self-consistency, rather than simply their ordinal relationship to classmates, would seem to more appropriately address the idiographic notion of cross-setting consistency contained in the differential consistency hypothesis.

If, as the present study and those of Bem and Allen (1974) and Harris (1979) suggest, the differential consistency hypothesis provides a better account of the available data, then it seems timely to begin

to investigate the second component of that hypothesis. These three studies have essentially addressed the first half of the hypothesis, that some people are consistent and others are not. Yet it is just as critical to determine in which of the possible range of relevant environmental settings people are consistent. In this study, for example, children were observed in two different free play settings, indoor and outdoor free play. These settings were selected on logical grounds, i.e., they both seemed conducive to or providing the opportunity to observe the children's social and non-social behaviors, and prior research on the cross-setting consistency of children's play behavior had been conducted in such settings (Roper & Hinde, 1978). However, if consistency is idiographic, then it is entirely possible that those situations in which an experimenter expects to find consistency may not be the same situations in which a child or group of children behave consistently. Thus, an expanded search for consistency in situations other than, for example, free play is called for and such an expanded search may yield unexpected benefits. One such benefit may simply be greater evidence of the across-setting consistency that is implied by labels such as socially withdrawn. Certainly, one cannot measure all possible settings; there must be some criteria by which these settings are reduced to a practical level for observational research. Conceivably, subjects themselves could be asked in which situations they consistently interact with other children, although in the present study subjects' verbal and/or cognitive repertoires may not have been sufficiently developed

to allow them to accurately identify such situations. Alternatively, investigations of children's social behavior consistency could be conducted in those other situations where children have the opportunity to interact. Such situations as Foster and Ritchey (1980) have noted are not limited to free play or to educational settings alone. Rather, they include lunch or snack periods, some structured group activities in preschool or school settings, and interactions with siblings and neighborhood children in home and other extra-school environments.

A second benefit of this expanded search and the focus on the differential consistency of individual children may be an improved understanding of those conditions which promote or facilitate the consistency (or generalization) of children's social behavior. It is increasingly apparent that little is known of those variables which promote generalized social behavior change in socially withdrawn children (Strain & Fox, 1981; Van Hasselt, Heresen, Whitehill & Bellack, 1979). In the process of searching for those situations in which the generalization of social behavior naturally occurs, more careful, systematic, and continuous measurement of potentially relevant environmental events could be undertaken and later analyzed in terms of their relationship to the incidence of social behavior consistency. Again, practical limitations will require that only certain of the potential range of such variables be investigated at any one time. The existing literature does, however, suggest some starting points; e.g., the amount of teacher/adult intervention in children's activities (Shores et al., 1976) and the types of toys or materials available (Quilitch &

Risley, 1973; Updegraff & Herbst, 1933). This naturalistic, rather "passive" approach to programming across-setting generalization contrasts with that recommended by Stokes and Baer (1977).

Finally, the results of this study indicate that even children who are labelled as socially withdrawn may differ in the pervasiveness or consistency of their withdrawal. Only Lana displayed an across-setting correlational relationship in her peer interactions on a session-by-session basis. Certainly, replication of these findings are called for and the lack of correlation across-settings in Jeff's social interactions with peers does not indicate that he was not withdrawn. On the contrary, both Jeff and Lana exhibited relatively little peer interaction. These results do suggest, however, that there are different types of social withdrawal. That is, there are perhaps socially withdrawn children whose social behavior toward peers is more "tightly organized" (correlated) just as in the case of Lana, and others like Jeff who are more variable across-settings. Others have suggested different typologies of social withdrawal (Goetz, Thomson, & Etzel, 1975; Strain et al., 1976). Regardless of the type of withdrawal the possibility exists that different withdrawn children will respond differently to the same intervention. Goetz et al. (1975) reported that a withdrawn girl who apparently preferred to interact with adults rather than peers displayed greater increases in peer interaction when indirect prompts and contingent praise were applied to her peer interactions (praise was delivered to the group with which she was interacting) than when direct prompts and praise were employed (the withdrawn child only was praised). Given the

closer relationship of Lana's peer interaction in the two settings of the present study, it could be argued that she, rather than Jeff, might be expected to display unprogrammed generalization of increased peer interaction once intervention procedures had been applied to her social behavior in one setting. It was originally intended that adult implemented prompting and praising of Lana's and Jeff's social interaction with peers would be conducted in one setting of the present study and its generalized effects assessed in the second play setting. Unfortunately, insufficient time remained in the school year in which to conduct this intervention component once the observational data had been collected. It will remain for future research to examine the interaction between socially withdrawn children's naturally occurring across-setting consistency and the generalized effects of social behavior interventions applied in a single setting.

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APPENDICES

APPENDIX A

BEHAVIOR CATEGORY DEFINITIONS

Non-social Categories: The scoring of all such categories precluded any occasions of verbal or physical contact with another person.

1. Non-interaction (NI). This category was scored when the child engaged in day dreaming, staring/looking at objects rather than people, sitting or standing with no other observable activity or or focus of attention, and any transition state (i.e., simply walking from one place to another).
2. Watching Others (WA). This category was scored when the target child looked, watched, stared at another child or adult. The child had to be facing another person, not otherwise manipulating or looking at some object nor carrying out some game or task.
3. Solitary Activity (SOL). The child was working or playing alone, and was occupied with some identifiable object, toy, game, task activity that differed from those nearby.
4. Parallel Activity (PRL). The child was working, playing alone, but was next to (within three feet, approximately) another child or group of children and was occupied with or using same object, task, toy, game or activity which was generically identical to that of the adjacent children.

Social Interaction Categories: Scoring of these activities occurred when: 1) the target child initiated a verbal and/or physical behavior toward another person (child or adult), or 2) when an adult or other child initiated a verbal or physical behavior toward the target child. Accidental contacts between a target child and another child or adult were not scored.

5. Target Approaches--Adult (AA). This category was scored when the target child walked up to, called out to, spoke to, touched, or otherwise attempted to get the adult's attention.
6. Target Approaches--Child (AC). This category was scored similarly to AA, except that it involved the target child approaching another child.
7. Adult Approaches--Target (AT). This category was scored when an adult or child walked up to, called out to, touched, or otherwise attempted to get the target child's attention.
8. Child Approaches--Target (CT). This category was scored similarly to AT except that it was scored when another child approached the target child.

9. Group Activity (GRP). This category was scored for ongoing interactions with one or more children or with one or more adults. To be scored, each person's behavior had to be dependent on the other's. Also, the child and the other party had to be engaging in the use of the same activity or task and/or talking with each other.

Social Attention Categories: These categories were scored to qualify the approach and group activity categories. If the other person's response to the approach or interaction was positive or neutral (accepting the approach, praising, smiling, simply continuing to interact), then a positive attention category was scored. If the other person's response to the approach or interaction was negative (aggression, threats, punishment, removal of the other person's toys, etc) then an attention category was scored. If there was no response to an approach, then no attention category was scored. The group category was always scored with either a positive or negative attention category, since by definition it required the participation of two people.

10. Adult Social Attention Positive (A+). This was scored when the adult responded in a positive or neutral manner to the target child's approach or interactive behavior.
11. Adult Social Attention Negative (A-). This was scored when the adult responded in a negative manner to the target child's approach or interactive behavior.
12. Child Social Attention Positive (C+). This was scored when: (1) the other child responded in a positive or neutral manner to the target child's approach or interactive behavior, (2) the target child responded in a positive manner to the other child's approach.
13. Child Social Attention Negative (C-). This was scored when: (1) the other child responded in a negative manner to the target child's approach or interactive behavior, (2) the target child responded in a negative manner.

Residual Categories:

14. Slash (SL). This category was scored when the target child's behavior did not fit any of the non-social categories and when no adult or other child approaches were made to the target child during an interval.
15. Obstruct (Ob). This category was scored when the target child was partially or completely blocked during the observe interval or when the target child left the setting.

APPENDIX B

SOCIAL INTERACTION RANKING INSTRUMENT

Using the following spaces, rank each child in your classroom in terms of how often they interact appropriately with the other children in the classroom. Use the first space for that child who interacts with others most often, the second space for that child who interacts the second most and so on until all children have been ranked.

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

11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

APPENDIX C

INTEROBSERVER AGREEMENT ANALYSIS CONTINGENCY TABLE

Subject _____ Date of Observation _____
 Setting _____ Observer _____ Reliability Observer _____

	NI	WA	SOL	PRL	SA+	SA-	SC+	SC-	Total
NI									
WA									
SOL									
PRL									
SA+									
SA -									
SC+									
SC-									
Total									

VITA

James Joseph Fox was born in Richmond, Virginia on September 9, 1950. He attended elementary school in that city and was graduated from Thomas Jefferson High School in June 1968. The following September he entered the College of William and Mary in Virginia and in June of 1972 he received a Bachelor of Arts Degree in Psychology. In the fall of 1972 he entered the University of Richmond and began study toward a Master of Arts Degree in Psychology. This degree was awarded in May 1976.

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