

# Peer Social Networks of Young Boys With Developmental Delays

**Michael J. Guralnick**

University of Washington

---

Community-based peer social networks of young boys with developmental delays and parental arranging and monitoring of their child's peer contacts were examined. Comparisons were made to matched groups of children who were developing typically and to children with communication disorders. Results showed more limited peer social networks for both groups of children with disabilities based primarily on the frequency of contacts with peers and linkages established across school and community settings. All three groups were indistinguishable from one another on numerous measures of peer social networks, including duration and quality of individual relationships and participation in organized group activities with peers. Groups also differed on parental arranging and monitoring, which appeared to be related to children's developmental level.

---

The participation of young children with their peers in home-based informal playgroups, in play activities with individual children in their neighborhood, or in organized group programs in their general community constitutes an important element of a child's social life. These social activities with peers are generally encouraged by parents and serve to complement and extend those peer relationships and friendships formed while participating in preschool or daycare programs. From a developmental perspective, in a manner similar to experiences with peers in preschool and daycare programs (Guralnick, 1990; Howes, 1988), these community-based peer social networks appear to provide a context for furthering the development of children's peer-related social competence (Ladd & Price, 1987; Newcomb & Bagwell, 1995). Moreover, the scope and specific features of peer social networks provide useful indicators of a child's social integration in the neighborhood and larger community.

Descriptive analyses of the peer social networks of preschool-age children who are developing typically have revealed the existence of an extensive set of community-based child-child relationships that increase even across the preschool period, especially with peers who are not relatives (Feiring & Lewis, 1988; Ladd, Hart, Wadsworth, & Golter, 1988). In general, community-based peer social networks of preschool children are composed of similar-age, same-sex peers; relationships tend to be longer-term (often a year or more); contacts with peers are frequent (a substantial proportion of peers in the immediate network are in contact with one another several times a week); and play occurs about equally often in each other's homes (Ladd et al., 1988).

In view of the importance most parents attach to young children's peer relationships (e.g., Mize, Pettit, & Brown, 1995), it is not surprising that parents often play an active role in both arranging and monitoring their child's peer social

---

contacts (Ladd, Profilet, & Hart, 1992). In fact, children whose parents initiate more peer contacts have larger peer social networks, as reflected by the number of peer contacts and the number of frequent play companions in the neighborhood (Ladd & Golter, 1988). Moreover, particularly for boys, children of parents who arrange contacts more frequently tend to be more socially competent, at least as evaluated by peer sociometrics obtained while participating in preschool programs (Ladd & Golter, 1988; Ladd & Hart, 1992). Although alternative explanations for the direction of these effects are possible, these and related findings are consistent with the proposition that children's peer social networks contribute to their peer-related social competence.

In some respects, the association found between parental initiations of social contacts for their child and their child's social competence is counter-intuitive. It is reasonable to expect that parents might attempt to compensate for children with less effective social skills (and perhaps fewer peer social contacts) by arranging playgroups or social play opportunities more frequently. Interestingly, as just noted, although this turns out to not be the case for arranging social contacts with peers, the actual behavior of parents during their child's play with peers does reveal that parents adopt a more directive role for children who are less socially competent with peers.

Specifically, results of research suggest that it is the manner in which parents monitor their child's activities with peers that appears relevant here, particularly their degree of involvement (i.e., ranging from monitoring from a distance, to directly checking on children, to directly participating in play activities) (Ladd & Golter, 1988). These results were confirmed in a recent study by Mize et al. (1995), in which parents who perceived their children to be less socially competent (a perception that corresponded to teacher judgments) were rated during a playroom session to be more active and

directive in their child's play with a peer than were parents of children judged to be more socially competent.

Although our knowledge of the peer social networks of young children who are developing typically is rapidly emerging, only limited information is available for children with general developmental (cognitive) delays. This omission is potentially a serious one, as the peer-related social competence difficulties that have been identified in preschool settings for this group of children (Guralnick & Groom, 1987; Guralnick & Weinhouse, 1984) may contribute to creating an unusual degree of social isolation within the peer community. Similarly, the additional stresses and demands placed on families to care for a child with a disability (Dyson, 1993), concerns about shared stigma (Goffman, 1963), and the often subtle negative attitudes towards children with disabilities that remain despite important advances in this regard (Stoneman, 1993) may further limit opportunities for children with developmental delays to establish an extensive and diverse peer social network. It is also possible, however, particularly in view of the importance that parents of children with disabilities place on social skills development (Booth, 1994; Guralnick, Connor, & Hammond, 1995), that these parents may take a more aggressive approach to both arranging and monitoring peer contacts to ensure the availability of an adequate peer social network.

Available research does suggest the existence of a more limited peer social network for young children with developmental delays than for similar-age children who are developing typically, at least for those with more severe disabilities. Specifically, children with moderate, severe, and profound disabilities have proportionally fewer peer contacts relative to adult contacts than do children without disabilities, a circumstance that does not appear to change over the preschool period (Lewis, Feiring, & Brooks-Gunn, 1987). Similarly, Stoneman, Brody, Davis, and Crapps (1988) found that a

---

group of children with predominantly moderate delays, including many with Down syndrome, had more restricted peer social networks than did a comparable group of children who were developing typically. Results of these investigations involving etiologically heterogeneous groups of children with substantial developmental delays are consistent with reports by parents of children with Down syndrome with respect to the child's increased social isolation in the peer community (see Byrne, Cunningham, & Sloper, 1988).

However, whether the peer social networks of the far larger number of young children with mild developmental delays are similarly affected is an important issue that has not yet been examined. Even the most basic of information on the scope and frequency of community-based peer social contacts is not available for this group of children. Absent as well for children with developmental delays in general is sufficient information about the details of their peer social networks, such as the quality of the children's relationships, the developmental characteristics of their playmates, or linkages across the peer network (e.g., between peer relationships established in preschool or daycare and similar relationships in the neighborhood). Also unexplored for any group of young children with developmental delays are the efforts that parents make to arrange contacts with peers in nonschool settings and the way they monitor their child's informal play activities with peers. In view of earlier discussions, of special interest is whether the arranging and monitoring roles of parents of children with developmental delays differ from those of parents of children who are developing typically.

Accordingly, in the present investigation, mothers of boys whose developmental delays were predominantly mild provided information with respect to their child's peer social network and their role in arranging and monitoring their child's play with peers. For peer social networks,

detailed information was first obtained with respect to each child's participation in nonschool or nondaycare group activities. Next, mothers reported on their child's peer social network, focusing on children their child played with regularly in neighborhood and community settings. For each child identified as part of the network, parents judged the quality of that relationship (e.g., best friends) and provided information about the characteristics of the playmate, the extent to which the children played together, and the existence of network linkages between peer contacts in preschool or daycare and peer contacts in the community. Finally, for parental arranging and monitoring of their child's peer contacts, parents provided information with respect to how often they were responsible for arranging play with another child and the degree to which they monitored their child's play when another child was playing at their home.

For comparative purposes, identical information was obtained from a group of children who were developing typically matched to the developmentally delayed group on family demographics and child chronological age (CA). Children who were developing typically were matched on CA rather than developmental level because the reference group for their child's peer relations and friendships for parents of children with developmental delays is children similar in CA (Guralnick et al., 1995). In addition to the comparison with children who were developing typically, a similarly matched group of children with communication disorders was included to determine whether any differences in peer social networks and parental arranging and monitoring were unique to children with developmental delays or were more generally associated with the existence of a child's special needs. The fact that young children with communication disorders are more socially competent with peers than are similar-age children with developmental delays (Guralnick, Connor, Hammond, Gottman,

& Kinnish, 1996b) should provide insight into the vulnerability of a child's peer social network and corresponding parental behaviors to a child's relatively minor developmental problems.

The sample selected for this investigation was drawn from a larger, more representative sample of children with disabilities that included both boys and girls. However, the preponderance of children identified as having communication disorders during the preschool years are male (American Speech-Language-Hearing Association, 1995; Whitehurst, Fischel, Arnold, & Lonigan, 1992). As a consequence, with such a relatively small number of girls available in the larger sample and the expectation of gender differences (see earlier discussion), the present sample was composed exclusively of boys. Specifically, 75% of the children with communication disorders identified through the recruitment process (see later discussion) were male. Moreover, 69% of the larger sample of children with developmental delays also were male. Of note, the higher prevalence of boys with mild mental retardation as identified by administrative systems is a generally common finding (e.g., Murphy, Yeargin-Allsopp, Decoufflé, & Drews, 1995). Only boys were recruited for the typically developing group.

## Method

### *Participants*

A recruitment process ultimately yielded 210 boys who met criteria for classification as either having developmental delays ( $n = 75$ ), communication disorders ( $n = 69$ ), or as developing typically ( $n = 66$ ). Children were recruited from local school districts, preschool and daycare programs, and community agencies that provided services to young children with disabilities in a large metropolitan community in the northwestern United States. No at-

tempt was made to recruit from programs serving children with severe or multiple disabilities. Children who were legally blind, had major uncorrected hearing loss, had a primary diagnosis associated with a physical disability, lived with the primary caregiver for less than 6 months, or currently lived in a home without a female caregiver were excluded from the sample. Non-English-speaking families also were excluded. The CA range for all children was established at 48 to 71 months.

Records of children with disabilities whose parents consented to participate were carefully reviewed as part of an initial screening process. Subsequently, for classification purposes only, the revised version of the Wechsler Preschool and Primary Scale of Intelligence—WPPSI-R (Wechsler, 1989) was administered to all children individually. Full-Scale IQ (FSIQ) as well as performance (PIQ) and verbal (VIQ) scores were obtained. The revised version of the Test for Auditory Comprehension of Language (Carrow-Woolfolk, 1985) also was administered individually to all children. This test consists of scales for word classes and relations, grammatical morphemes, and elaborated sentences, but only the total score (standard score) was used for categorization purposes in the present study.

On the basis of this information, children meeting established criteria were placed into one of the three groups differing in developmental status. Specifically, children were classified as developmentally delayed if they obtained an FSIQ ranging between 45 and 80 but were excluded from this category if they obtained a PIQ or Test for Auditory Comprehension of Language score greater than 90. The group of children classified as have communication disorders consisted of children who completed a community-based comprehensive speech and hearing assessment administered by qualified professionals resulting in a categorical diagnosis of communication disorder and a recommendation for regular therapy. In addition, to be classified as having com-

munication disorders, children must have obtained a PIQ of 90 or greater or an FSIQ greater than 85 on the WPPSI-R and met one of the following criteria: (a) PIQ > VIQ differential of at least 15 points, (b) a Test for Auditory Comprehension of Language total score of 90 or less, or (c) a diagnosed articulation disorder.

Boys who were developing typically were included in the study if they achieved an FSIQ between 90 and 130. Children were excluded, however, for any of the following reasons: (a) VIQ or PIQ lower than 90; (b) Test for Auditory Comprehension of Language less than 90, and (c) a Child Behavior Checklist (Achenbach, 1991) Total Problem Score greater than the 90th percentile (see later discussion). None of the children who were developing typically were enrolled in programs that included a substantial number of

children with disabilities or had a sibling with a disability.

Responses to a parent questionnaire provided basic demographic information on marital status, child's ethnicity, maternal age, and the parents' employment status, occupation, and education. The Hollingshead Four Factor Index of Social Status (Hollingshead, 1975) was used to calculate a measure of family status (range 8 to 66).

As noted earlier, the recruitment process resulted in a sample of 210 boys representing all three developmental status groups. In eight instances, children of mothers with low education from the two disability groups were excluded to ensure that all three groups were equivalent on the basis of family demographics and child CA (see Table 1). Comparisons among the three groups with respect to demo-

**Table 1**  
**Characteristics of the Sample by Group**

Characteristic	Developmentally delayed (n = 75)		Communication disordered (n = 69)		Typically developing (n = 66)	
	Mean or %	SD	Mean or %	SD	Mean or %	SD
<b>Family demographics</b>						
Child's age <sup>a</sup>	58.63	7.20	57.70	5.23	56.42	3.84
Child's gender <sup>b</sup> (%)	100.0	—	100.0	—	100.0	—
Child's ethnicity <sup>c</sup> (%)	92.0	—	91.3	—	100.0	—
Mother's age <sup>d</sup>	35.19	5.26	34.74	6.79	34.26	4.62
Mother's education <sup>d</sup>	14.40	1.91	14.17	1.63	14.92	1.92
Marital status <sup>e</sup> (%)	97.3	—	88.4	—	86.4	—
Family social status <sup>f</sup>	45.44	12.86	46.62	13.10	48.40	10.74
<b>Child developmental characteristics</b>						
WPPSI-R <sup>g</sup>						
Full-Scale IQ <sup>h</sup>	64.82	9.82	97.32	11.07	111.18	9.88
Performance IQ <sup>h</sup>	66.22	11.10	105.39	11.13	111.36	12.28
Verbal IQ <sup>h</sup>	68.82	10.28	91.10	12.49	108.65	10.34
TACL-R <sup>i</sup>						
Total scale <sup>h</sup>	66.76	14.90	92.55	13.18	106.23	9.13
PLS <sup>j</sup>						
Verbal ability <sup>h</sup>	18.64	8.62	27.74	6.93	36.95	4.52
Articulation <sup>h</sup>	11.46	6.39	14.06	4.01	20.96	2.80
Vineland <sup>k</sup>						
Total adaptive behavior <sup>h</sup>	66.05	10.47	84.96	12.24	95.73	10.41
Communication <sup>h</sup>	70.80	12.03	82.68	9.71	96.62	8.06
Daily living skills <sup>h</sup>	68.93	11.39	89.42	13.43	93.55	11.75
Socialization <sup>h</sup>	80.03	11.56	92.58	12.96	99.61	9.77
Motor skills <sup>h</sup>	65.06	14.94	89.44	16.85	98.76	12.17
CBCL <sup>l</sup>						
Total behavior problems <sup>m</sup>	55.83	10.25	54.54	10.57	47.47	7.80
Externalizing	51.47	10.76	52.29	11.03	48.58	8.91
Internalizing <sup>n</sup>	48.72	9.62	52.01	10.23	47.24	8.23

<sup>a</sup>Calculated in months. <sup>b</sup>Percentage male. <sup>c</sup>Percentage Caucasian. <sup>d</sup>Calculated in years. <sup>e</sup>Percentage partnered. <sup>f</sup>Hollingshead Four-Factor Index of Social Status. <sup>g</sup>Wechsler Preschool and Primary Scale of Intelligence-Revised. <sup>h</sup>Typically developing > communication disordered > developmentally delayed. <sup>i</sup>Test for Auditory Comprehension of Language-Revised. <sup>j</sup>Preschool Language Scale. <sup>k</sup>Vineland Adaptive Behavior Scales. <sup>l</sup>Child Behavior Checklist. <sup>m</sup>Communication disordered, developmentally delayed > typically developing. <sup>n</sup>Communication disordered > typically developing.

---

graphic and child CA measures did not yield any significant differences.

Finally, other child characteristic measures were obtained in addition to the WPPSI-R and the Test for Auditory Comprehension of Language. First, to supplement the receptive language assessment of the Test for Auditory Comprehension of Language, the expressive components of the Preschool Language Scale (Zimmerman, Steiner, & Pond, 1979) were administered. Because of the lack of standardization, only raw scores were used (range 0 to 48 for verbal ability and 0 to 23 for articulation). Second, the Vineland Adaptive Behavior Scales Survey Form (Sparrow, Balla, & Cicchetti, 1984) was administered to mothers by trained interviewers. Standard scores were obtained for each of the four domains (Communication, Daily Living Skills, Socialization, and Motor Skills) as well as for the total adaptive behavior score. Third, the mother's assessment of her child's behavior problems was obtained from the Child Behavior Checklist (Achenbach, 1991). Mothers rated the frequency of different behavior problems from a 118-item questionnaire using a 3-point scale. Only the broad band internalizing and externalizing scales (T scores), in conjunction with a total behavior problem score, were used. Higher scores indicate greater perceived behavior problems.

As can be seen in Table 1, individual child characteristics differed across groups for most measures, consistent with developmental expectations. Approximately 70% of the children with developmental delays had an FSIQ of 55 or above.

## **Procedure**

Families who agreed to participate in the study received a packet of materials in the mail containing questionnaires related to their child's peer social network, parental arranging and monitoring of their child's peer contacts, the Child Behavior Checklist, and consent forms. Two separate appointments with the mothers were then

arranged to administer the Vineland Adaptive Behavior Scales and to carry out interviews (see later discussion). Questionnaires and consents also were collected during these visits.

During this period, individual testing of children was carried out primarily at their preschool or daycare program by research assistants trained and supervised on the various assessment instruments by licensed psychologists and a communication disorders specialist. Training staff made periodic observations of assessment sessions during the course of the study, and each measure was rechecked for accuracy and correct use of tables before final entry for analysis.

## **Questionnaires and Interviews**

*Peer Social Network.* To gain information about each child's peer social network, I utilized a combined questionnaire and interview format. Mothers were sent a questionnaire that was focused on information about three aspects of their child's current peer social network: (a) participation in general group activities—regular participation in nonpreschool or nondaycare group activities with peers, including routinely scheduled playgroups, swimming lessons, religious activities; (b) participation in groups for special services—regular participation with peers to receive special services such as speech or physical therapy (only obtained for the two groups of children with disabilities); and (c) social contact with individual children—identification of regular playmates (minimum contact once every 2 weeks) outside of preschool, daycare, or group activities. For the general and special services group activities, information was obtained on the questionnaire with respect to the type of each group activity, the approximate number of children in each group, and the number of times each group met per month. For participation with individual peers (social contact),

---

mothers were asked to list the three children their child played with most frequently. In addition to playmates' names, information was obtained on the questionnaire with respect to the peers' gender, CA, and relationship (e.g., neighbor, cousin). No information was collected regarding siblings. A final question concerned the frequency with which each child played with other children outside of preschool, daycare, or group activities within the last month (five options were provided, ranging from four or more times per week to less than once per month).

After the questionnaire information was received, interviews were scheduled with mothers at their homes. Trained interviewers asked mothers to expand on their responses to the questionnaire following a structured format. For participation in group activities, mothers confirmed or clarified the primary purpose of the activity and were asked to estimate the approximate number of children with and without special needs in the group. Information with respect to the linkages between general group participation and the child's preschool or daycare in the child's peer social network was obtained through asking mothers to indicate whether their child's peers (and how many) were part of both activities. The linkage question also was asked for children participating in special services (and for individual children as well, see later discussion).

Details were then obtained through the interview process of the social contacts with individual children who were played with regularly as identified on the questionnaire (maximum of three children). The same information was obtained for each of the playmates listed by mothers. Specific questions focused on where the children played (own home, other child's home, both homes, outdoors); how the children met (through friends, neighbors, relatives, religious activities, or preschool/daycare); average length of time playmates had known one another (assessed in annual increments); average number of hours per week spent

together (1 to 7, 8 to 14, 15 to 21, >21 hours/week); the strength of the relationship between the two children (best friends, like each other a lot, neutral but still play together often, just tolerate one another); whether the playmate had any special needs and, if so, what they were (developmental delay, speech or language difficulties, physical disability, other); and whether the identified playmate was also in the child's preschool or daycare program (yes, no). Information obtained from these interviews was highly specific and easily placed into one of the categories available for each question listed in the parentheses above.

*Arranging and Monitoring.* The Arranging and Monitoring questionnaire consisted of a series of questions in which mothers were given five mutually exclusive options for each question. First, mothers were asked to note how often in a typical month they were responsible for arranging for their child to play with another child (range = *four or more times per week to less than once per month*). Next, if mothers reported that they did have one of their child's playmates at their home in the past month (approximately 86% did), they were asked to evaluate their degree of involvement in the play activities of the children (i.e., monitoring). First, mothers were asked to note the percentage of time they were in the same room with the children or could see them (range = *all of the time to never*). Second, if applicable, when children were playing where mothers could not see them, they were asked how frequently they checked on the children (range = *very often*—defined as every 2 or 3 minutes—to *one time or less in an hour*). Finally, mothers were asked how frequently they decided on games or other activities for the children (range = *all of the time to never*).

### ***Plan of Analysis***

Separate analyses of peer social networks were first conducted comparing children

across the three developmental status groups in relation to participation in group activities and participation with peer groups in special services. A similar set of analyses was conducted for social contact with individual children. This was followed by analyses of the extent to which mothers arranged and monitored their child's interactions with individual children in the community. Nonparametric tests were used to evaluate differences among the three developmental status groups on the individual items relating to participation in group activities and social contact with individual children and for differences between the two groups of children with disabilities for items relating to participation in groups for special services. The chi-square statistic was used for dichotomous items (e.g., yes/no responses). When a 2 (dichotomous item)  $\times$  3 (group) chi-square was significant at the .05 level, three preplanned follow-up tests were performed comparing the two disability groups and comparing each disability group to the typically developing group with 2  $\times$  2 chi-square tests. For the three preplanned follow-up tests, alpha was set at .017 according to the Bonferroni method for controlling Type I error rate. For items with ordinal scales (i.e., ratings), differences among the three groups were tested using the Kruskal-Wallis analysis of variance by ranks (chi-square statistic for large samples) and differences between two groups were tested using the Mann-Whitney test (z statistic for large samples). When a 3-group Kruskal-Wallis test was significant at  $p$  less than .05, three preplanned follow-up comparisons were performed using the Mann-Whitney test, with alpha set at .017.

## Results

### *Participation in Group Activities and Special Services*

Descriptive analyses of the data revealed that approximately half of the children

(mean = 52.4%) in the sample ( $N = 210$ ) participated in one or more group activities outside of preschool or daycare programs. The primary group activities involved religious organizations and physical activities (means = 67.3% and 40.9%, respectively); groups met weekly and 27.8% of the groups included children with disabilities. Of importance, no significant differences were obtained across the three developmental status groups for these items. However, for the linkage item (between preschool/daycare and community activities), a significantly smaller percentage of peers from the preschool or daycare program of the children with developmental delays participated in group activities than did children who were typically developing (means = 9.40 and 34.4%, respectively); overall,  $\chi^2(2) = 6.22$ ,  $p < .05$ ; follow-up,  $\chi^2(1) = 5.85$ ,  $p < .017$ . The children with communication disorders had linkages similar to those of the children who were developing typically (mean = 31.6%) but did not differ significantly from either of the other two groups on follow-up tests.

Data on participation in groups providing special services were obtained only for the two groups of children with disabilities. A larger percentage of children with developmental delays participated in these groups than did children with communication disorders (12% and 2.9%, respectively),  $\chi^2(1) = 4.22$ ,  $p < .05$ . No further statistical comparisons were carried out for related items (e.g., type of special services) because of the small number of participating children. However, for those who did participate, groups met weekly on average, contained approximately four children per group, and involved a substantial percentage of children (50%) from their preschool or daycare program.

### *Social Contact With Individual Children*

Table 2 presents the data representing social contact with individual children in



**Table 2**  
**Social Contact With Individual Children by Group**

Social contact	Developmentally delayed		Communication disordered		Typically developing	
	Mean or %	SD	Mean or %	SD	Mean or %	SD
<b>Extent of regular contact</b>						
Have individual playmate (% yes)	94.7	—	100.0	—	100.0	—
No. of playmates (if yes)	2.23	0.87	2.38	0.77	2.45	0.81
Time spent with playmate (rating <sup>a</sup> )	1.83	0.99	1.68	0.93	1.90	1.02
Frequency play with peers (rating <sup>b</sup> ) <sup>c</sup>	3.42	1.32	3.49	1.28	4.16	0.95
Peer plays your home (%) <sup>c</sup>	76.8	—	82.6	—	98.3	—
Play both homes (%) <sup>c</sup>	60.0	—	59.1	—	83.1	—
<b>Characteristics of playmates</b>						
<b>Gender (%)</b>						
Male	84.6	—	91.0	—	N/A	—
Female	69.2	—	55.2	—	N/A	—
Age of playmates (months)	57.52	22.95	63.72	21.72	N/A	—
Playmate with disability (%) <sup>d</sup> (at least one)	29.2	—	39.4	—	7.7	—
<b>Relationship</b>						
Time know playmate (rating <sup>a</sup> )	3.33	1.25	3.15	1.28	3.25	1.26
Quality (rating <sup>f</sup> )	3.01	0.56	3.02	0.60	3.09	0.36
No. of best friends	0.58	0.71	0.73	0.73	0.71	0.65
At least one best friend (%)	46.9	—	57.6	—	60.0	—
Best friends with a disability (%) <sup>d</sup>	30.0	—	26.3	—	5.1	—
<b>Linkage</b>						
Met in preschool/daycare(%) <sup>g</sup>	10.8	—	25.8	—	44.6	—
In same preschool/daycare(% yes) <sup>c</sup>	20.0	—	28.8	—	53.8	—

\*1 = 1 to 7 hours per week; 2 = 8 to 14 hours per week; 3 = 15 to 21 hours per week; 4 = > 21 hours per week. <sup>b</sup>1 = less than once per month; 2 = less than once per week; 3 = 1 to 2 times per week; 4 = 2 to 3 times per week; 5 = 4 or more times per week. <sup>c</sup>Significant effect: typically developing (TD) > developmentally delayed (DD), communication disordered (CD). <sup>d</sup>Significant effect: TD < DD, CD. <sup>e</sup>1 = < 1 year; 2 = 1 to < 2 years; 3 = 2 to < 3 years; 4 = 3 to < 4 years; 5 = 4 to < 5 years; 6 = 5 to 6 years. <sup>f</sup>1 = just tolerate; 2 = neutral; 3 = like a lot; 4 = best friends. <sup>g</sup>Significant effect = TD > DD.

the child's community. With respect to the extent of regular social contacts, mothers reported that virtually all children, irrespective of developmental status, played with at least one child on a regular basis (mean = 98.1%). The average number of playmates identified was 2.35 (maximum possible was 3) and, based on ratings of total time spent together, the average rating was 1.8 (rating of 1 = 1 to 7 hours/week; 2 = 8 to 14 hours/week, see Table 2). No significant differences were obtained across groups differing in developmental status for these items.

However, the frequency with which children played with their peers did differ across groups. Specifically, as indicated by the average ratings in Table 2, children who were developing typically played more frequently with individual children than did children with developmental delays or communication disorders, overall  $\chi^2(2) = 12.17, p < .01$ ; follow-up:

typically developing versus developmentally delayed and communication disordered groups,  $z_s = 3.19$  and  $2.04$ , respectively,  $ps < .017$ . The two disability groups did not differ from one another. Similar results were obtained for the question asking whether other children played at their home in the past month, overall  $\chi^2(2) = 12.31, p < .01$ . Follow-up tests revealed a higher percentage for children who were developing typically than for either children with developmental delays,  $\chi^2(1) = 12.76, p < .017$ , or communication disorders,  $\chi^2(1) = 8.59, p < .017$ . Finally, for the item assessing the location in which children played together (i.e., child's home, playmate's home, both homes, outdoors) within the last month, the same pattern was obtained, overall  $\chi^2(2) = 10.95, p < .05$ . Specifically, play for a larger percentage of children who were developing typically occurred at both children's homes in comparison to the

group of children with developmental delays, follow-up  $\chi^2(1) = 8.50, p < .017$ , and communication disorders,  $\chi^2(1) = 9.15, p < .017$ . The two disability groups did not differ from one another.

Analyses of the characteristics of the child's playmates were then carried out (see Table 2). These data revealed that 87.9% of the children for the two disability groups identified at least one male playmate, and 62.1% identified at least one female playmate (maximum of three children), and the CA of playmates was similar to the CA of the children in the sample for these two groups. Comparisons across developmental status groups for these items did not yield any significant differences. For the last item in this grouping, as might be expected, the percentage of children having at least one playmate with a disability differed across the three groups, overall  $\chi^2(2) = 18.03, p < .001$ . Follow-up tests revealed that the children who were developing typically had a smaller percentage than did either the developmentally delayed or communication disordered groups,  $\chi^2(1) = 10.02$  and  $18.22$ , respectively,  $ps < .017$ . The two groups of children with disabilities did not differ from one another. Nevertheless, it is important to note that the overwhelming majority of playmates identified for the children with disabilities were children who were developing typically. In fact, only 16% of the playmates identified for children from the two disability groups were reported to have special needs.

With respect to the relationship between children, mothers reported that playmates typically had longer-term relationships, averaging between 2 and 3 years, but no differences were obtained across groups. Similarly, the quality of the relationship (ratings ranging from *best friend* to *just tolerate*), the number of best friends identified, and the percentage of children with at least one best friend (see Table 2) did not differ across developmental status groups. To examine the relation between the existence of a disability of best friends and children's de-

velopmental status, I conducted a separate overall analysis for those with best friends. This analysis did produce a significant effect,  $\chi^2(2) = 8.32, p < .05$ , and follow-up tests indicated that more children who had developmental delays,  $\chi^2(1) = 7.83, p < .017$ , or communication disorders,  $\chi^2(1) = 6.57, p < .017$ , had at least one best friend with a disability than did children who were developing typically. The two disability groups did not differ from one another. From an alternative perspective, approximately 70% of children with disabilities who had a best friend had at least one best friend who did not have a disability.

The two questions designed to address the issue of linkage revealed a number of interesting differences among the groups. Although children met primarily through relatives, neighbors, and family friends, patterns that did not differ significantly across groups, the analysis of the extent to which preschool or daycare programs served as a place in which playmates first met (at least one child) did differ significantly, overall  $\chi^2(2) = 18.95, p < .001$ . Follow-up comparisons revealed that only the typically developing and developmentally delayed groups differed significantly from one another,  $\chi^2(1) = 8.59, p < .017$ . The question designed to determine whether the child's current playmates were also in the same preschool or daycare produced a significant overall effect as well,  $\chi^2(2) = 17.84, p < .001$ . As can be seen from Table 2, over half of the playmates identified for children who were developing typically were in the same preschool or daycare, but only approximately one quarter were similarly linked for children in the two disability groups. Follow-up analyses indicated that this percentage was significantly higher for the typically developing group than for either the children with developmental delays or communication disorders,  $\chi^2(1) = 15.99$  and  $8.94$ , respectively,  $ps < .017$ . The two disability groups did not differ from one another.

## Arranging and Monitoring

Four items addressed mothers' arranging and monitoring of their child's play activities with individual children in the community. As noted earlier, each question consisted of five ordinal arranged options (see bottom of Table 3). As indicated in Table 3, mothers arranged play approximately once a week on average. Overall analyses indicated a significant difference across groups,  $\chi^2(2) = 10.00, p < .01$ . Follow-up analyses revealed that the mothers of children who were developing typically arranged play more frequently than did mothers of children with communication disorders,  $z(1) = 3.28, p < .017$ ; no other comparisons were significant.

**Table 3**  
Ratings for Arranging and Monitoring Play Activities by Group

Activity	Developmentally delayed		Communication disordered		Typically developing	
	Mean	SD	Mean	SD	Mean	SD
Arranges play <sup>a,b</sup>	2.55	1.30	2.30	1.12	2.93	1.02
Monitors children <sup>c,d</sup>	3.57	0.89	3.07	0.86	2.90	0.77
Checks on children <sup>e,f</sup>	3.88	0.96	3.26	1.06	3.03	1.03
Suggests activities <sup>g,h</sup>	2.57	0.69	2.30	0.65	2.22	0.56

<sup>a</sup>1 = less than once per month; 2 = less than once per week; 3 = 1 to 2 times per week; 4 = 2 to 3 times per week; 5 = 4 or more times per week. <sup>b</sup>Significant effect: typically developing (TD) > communication disordered (CD). <sup>c</sup>1 = never; 2 = little of the time; 3 = half the time; 4 = most of the time; 5 = all the time. <sup>d</sup>Significant effect: developmentally delayed (DD) > CD, TD. <sup>e</sup>1 = once per hour or less; 2 = 2 times per hour; 3 = every 10 to 20 minutes; 4 = every 5 to 10 minutes; 5 = every 2 to 3 minutes/always. <sup>f</sup>1 = never; 2 = little of the time; 3 = half the time; 4 = most of the time; 5 = all the time. <sup>g</sup>Significant effect: DD > TD.

The three questions that addressed mothers' monitoring behavior when children were playing in their home yielded a consistent pattern. As illustrated in Table 3, mothers of children with developmental delays monitored their children to a greater extent than did mothers in either

of the other two groups. For all three items, overall analyses were significant (watches:  $\chi^2(2) = 15.58, p < .001$ ; checks:  $\chi^2(2) = 19.05, p < .001$ ; suggests activities:  $\chi^2(2) = 7.83, p < .05$ ). For both the watches and checks items, follow-up tests indicated that mothers of children with developmental delays monitored children's activities to a greater extent than did mothers in either the communication disordered group (watches:  $z = 2.72, p < .017$ ; checks:  $z = 3.09, p < .017$ ) or the typically developing group (watches:  $z = 3.88, p < .017$ ; checks:  $z = 4.22, p < .017$ ). No differences were obtained between the children with communication disorders and the children who were developing typically. For the suggests activities item, follow-up analyses indicated only a significant effect for the comparison between children with developmental delays and children who were developing typically,  $z = 2.72, p < .017$ .

## Comparisons Between Mainstreamed and Specialized Placements

The primary placement for preschool services for most children from both disability groups was a specialized program (i.e., one containing only other children with similar disabilities) rather than mainstreamed preschools that contained primarily children who were developing typically. In fact, only 16.2% of the children with developmental delays and 32.3% of the children with communication disorders were enrolled in mainstreamed preschool programs. To examine whether type of preschool placement was associated with the peer social networks or parent arranging and monitoring, I formed equivalent mainstreamed and specialized groups separately for the two disability groups through a matching process. Specifically, all children enrolled in the mainstreamed preschools were matched on a case-by-case basis with children from specialized placements from their respec-

---

tive disability group using the following matching criteria: (a) child CA within 6 months, (b) WPPSI-R FSIQ within 10 points, (c) Vineland total score within 10 points, (d) social status within 10 points, and (e) mother's age within 9 years.

Following this procedure, I found no differences (two-tailed *t* tests) for the family demographic (mother's age and education, family social status) and child characteristic (CA, WPPSI-R FSIQ, Test for Auditory Comprehension of Language total scale, Vineland total score, Child Behavior Checklist total behavior problems) measures. In subsequent analyses for each of these two matched samples, I compared all measures from the participation in group activities, social contact with individual children, and parental arranging and monitoring as described previously for the complete sample. However, too few children in the matched samples participated in special service groups to yield a meaningful analysis. Results revealed that none of the comparisons for either of the disability groups produced a significant effect, suggesting that type of preschool placement was not responsible for the differences among the developmental status groups noted earlier.

### ***Correlations With Family Demographics and Child Characteristics***

In the final set of analyses, I examined whether a child's peer social network, mother's arranging, and mother's monitoring were related to family demographic and child characteristic measures. To accomplish this, I created a peer social contact composite and a parental monitoring composite. Four measures were selected for the social contact composite, each established to yield possible scores ranging from 0 to 3. These measures consisted of (a) number of group activities the child participated in, (b) number of individual playmates, (c) number of best friends, and (d) total time spent with

playmates. Each child received a composite score based on the mean of these measures. Similarly, the monitoring composite consisted of the mean of the three monitoring items (watches, checks, suggests activities). The arranging measure consisted of only the single item.

Correlational analyses were then carried out for each of the two composite scores and the arranging item with all measures found in Table 1 separately for the three developmental status groups. Only one of these correlations was significant. Specifically, the social contact composite correlated with CA for children with developmental delays,  $r = .36, p < .01$ . However, given the large number of correlations conducted and the absence of any patterns, it appears that knowledge of family demographics or child characteristics for any of the developmental status groups does not contribute to our understanding of the variation in children's peer social networks or maternal behavior of arranging and monitoring their child's play with peers.

## **Discussion**

The central focus of this study was to examine the community-based peer social networks of young boys with developmental delays. Results from our sample consisting primarily of boys with mild developmental delays was consistent with the general findings of previous research involving children with more severe delays, suggesting the existence of a more limited peer social network for children with developmental delays in comparison to children who are developing typically and were similar in CA. In particular, in comparison to a carefully matched sample of children who were developing typically, mothers reported that children with developmental delays played with other children less frequently overall and other children played less often in the homes of children with delays. There also appeared to be less reciprocity in that children with

---

delays, when they played, did not play as often in their own homes and in playmates' homes as did children who were developing typically. Of note, precisely the same pattern was found for children with communication disorders, despite the extensive differences in developmental level and peer social competence that exist between these two groups of children with disabilities. This suggests that at least for networks assessed in terms of the extent of regular social contact with individual children in the community, limitations in peer social networks may be imposed by factors such as social skills difficulties or negative community attitudes associated with the existence of a child's special needs (see subsequent discussion).

Nevertheless, despite these differences in the extent of the peer social networks of children with disabilities, detailed assessments for these children of both participation in group activities and social contacts with individual children revealed the existence of a network of peers within their neighborhood and community comparable to a matched group of children who were developing typically. Specifically, children in all three developmental status groups participated equally often and in the same types of group activities. Moreover, also similar across groups were the number of peers played with regularly, the duration of the relationship, time spent with playmates, and the quality of the relationship as reflected by "likability" ratings and the number of best friends identified. Although the gender and CA of playmates were similar for the two groups of children with disabilities, as might be expected, a greater proportion of children with disabilities identified at least one friend with a disability and had more playmates with a disability than did children in the typically developing group.

The linkage between peer relationships in the child's preschool/daycare and in the community constitutes one index of the degree to which children are inte-

grated within the community at large and perhaps serves to index the depth of the relationship as well. Data from this study revealed that, in fact, linkages were not as strong for children with disabilities. Specifically, in comparison to the group of children who were developing typically, a smaller percentage of the playmates of children with disabilities in the community were also in the same preschool/daycare, and peers identified as regular playmates did not initially meet as often in the preschool/daycare setting. It is important to recall that the vast majority of regular community playmates identified were typically developing, even for children with developmental delays (85.1%) and communication disorders (82.6%).

Differences in linkage patterns cannot be attributed to the fact that most of the children with developmental delays and communication disorders participated in specialized programs. As noted, comparisons between matched samples of children in mainstreamed and specialized settings for both disability groups did not yield differences for any of the peer social network or other measures. In many respects, the absence of linkage differences between children enrolled in specialized and mainstreamed settings is surprising given the fact that specialized programs are less likely to be located in the child's immediate community and do not permit contact with the far larger number of children who were developing typically available in mainstreamed settings. Moreover, results of previous research suggest that mainstreamed programs do support linkages in some form. Specifically, Guralnick et al. (1995) found that approximately 65% of parents of children with disabilities reported that their child had a typically developing friend in a mainstreamed preschool, and social contact with that friend also occurred outside of the preschool setting for about half of the children. Perhaps it is the case that although the prospects for increased community-based friendships are found in

---

social relationships formed in mainstreamed preschools, they do not often result in *regular social contacts* with those children in the community. In fact, Bailey and Winton (1989) and Stoneman (1993) have observed the separation that readily forms along child disability lines even among parents in mainstreamed settings, and the absence of community-school social contact linkages between children with and without disabilities enrolled in mainstreamed preschool/daycare settings. Nevertheless, additional research involving larger samples of children enrolled in specialized and mainstreamed programs may reveal differences not detected in this investigation.

Assuming that the less extensive linkage demonstrated by children with disabilities in this study accurately represents the current state-of-affairs, it is essential to examine the bases for this potential barrier to more complete social integration. Perhaps children who are developing typically have greater opportunities to develop deeper relationships and more extensive linkages because many spend more time in daycare programs than do children with disabilities. Correspondingly, opportunities for children with disabilities to include potentially large numbers of children who are developing typically in their community-based peer social network may be limited by negative attitudes highly resistant to change (Stoneman, 1993) or simply limited access and contact. Linkage was, in fact, stronger when playmates identified had special needs. Specifically, for children with developmental delays, 45.4% of their special needs playmates were in the same preschool/daycare program whereas this was the case for 35.7% of the children with communication disorders.

Another possibility may be that the more limited peer social network linkages between preschool/daycare and community activities for children with disabilities can be attributed to the unusual peer social competence difficulties and corresponding lack of social integration in

inclusive early childhood programs experienced even by children with mild disabilities (Guralnick, 1990; Guralnick et al., 1996b), particularly children with developmental delays (Guralnick, Connor, Hammond, Gottman, & Kinnish, 1996a; Guralnick & Groom, 1987, 1988). That is, because of these difficulties, the peer relationships of many children with disabilities may be more fragile and, therefore, not as easily maintained across settings. As a consequence, separate sets of relationships may tend to form in preschool/daycare and in community settings for children with disabilities more frequently than for children who are developing typically. If this is the case, successful interventions to foster the peer-related social competence of children with disabilities are likely to produce widespread benefits (Guralnick & Neville, 1997).

Mothers of children from all developmental status groups played an active role in arranging for their child to play with other children in the community, with approximately half reporting that such arrangements occurred 1 to 2 times per week or more for at least one playmate. However, arranging occurred most often for children in the typically developing group. Although a strong trend for the group of children with developmental delays was observed,  $p = .053$ , a significant difference was obtained only between the typically developing group and children with communication disorders. It is certainly possible that the overall lower level of arranging of peer social contacts by mothers of children with disabilities contributed to the peer social network differences for children with disabilities obtained in this study. It is not the case that parents of young children with disabilities value interactions with peers less (Booth, 1994; Guralnick et al., 1995). However, children with disabilities, particularly children with developmental delays, participated with peers in groups for special services (12% of the sample), thereby reducing the time available for

arranging individual social contacts. Other pressures, perhaps related to arranging individual therapies, child health issues, or difficulties finding available playmates could also restrict opportunities for parents to arrange regular social contacts. Moreover, more competent or sociable children may also encourage their parents to initiate peer play activities more frequently (Ladd & Hart, 1992). Nevertheless, as discussed earlier, whether through parental design or child initiative, despite the overall lower level of arranging, many important aspects of the peer social networks of children with disabilities were indistinguishable from those of children who were developing typically.

Monitoring in the form of watching, checking, and suggesting activities for children when playing in their home occurred far more extensively for mothers of children with developmental delays than for either of the other two groups. Mothers appeared to be responding in a manner consistent with their child's developmental level, presumably providing the degree of structure and direction needed to maximize the quality of the play activity. Previous work by Bhavnagri and Parke (1991) has indicated that younger preschoolers benefit more from direct supervision by parents than do older preschoolers. The greater similarities between the developmental levels (and corresponding levels of peer-related social competence) of the children with communication disorders and the children who are developing typically may account for the similarities in reported monitoring behavior by mothers from those two groups.

Finally, although differences as a consequence of a child's membership in one of the three developmental status groups were obtained for both the peer social network and arranging and monitoring measures, no within group associations between family demographics or child characteristics and the composite measures were found. Perhaps a sample containing a more diverse group of fami-

lies will yield reliable associations with our measures (see Ladd & Hart, 1992). The absence of a relation between the severity of a disability, assessed in terms of either cognitive or language level, and the composite measures, is especially noteworthy. It may well be the case that children with more significant disabilities than those who participated in the present study do have a more restricted peer social network (e.g., Stoneman et al., 1988). However, for children with mild delays, results of previous research have indicated that only modest relations exist between cognitive or language level and children's peer-related social competence (Guralnick et al., 1996a, 1996b). To the extent that peer social networks and parental arranging and monitoring are closely linked to the child's peer-related social competence for this group of children (see Ladd & Golter, 1988; Mize et al., 1995), the absence of an association between the severity of a child's disability and the composite scores can be understood. Nevertheless, the possible associations between children's peer-related social competence, their peer social networks, and parental arranging and monitoring for children with disabilities remain important issues for future research.

Because only minimal previous work has been carried out in the domains of interest to this investigation, there is little information available to evaluate the extent to which our results are compatible with an extant literature or the degree to which the approaches taken in this study may limit the validity of our findings. In particular, only boys participated in this study for the practical reasons noted earlier. Whether these findings apply to girls as well remains to be determined. Of interest, data for the girls in our larger sample for the two disability groups were compared on all outcome measures ( $n_s = 36$  for children with developmental delays and 21 for children with communication disorders). Results revealed only minor differences between boys and girls in the two disability groups. Specifically, the

gender of playmates selected by the children differed (girls selected other girls more often), and mothers of boys watched or checked on their children more frequently than did mothers of girls. Nevertheless, larger and carefully matched samples will be required to address the important issue of possible gender differences in the peer social networks of young children with disabilities.

Moreover, we did not directly observe the quality of the relationships between children (e.g., best friends), but relied upon parental reports. Whether the characteristics of a "best friendship" are the same for children representing different developmental status groups constitutes an important question. It is possible that the degree of "closeness" or related relationship characteristics, even after accounting for developmental level, may alter both the social meaning of a child's social network and the developmental implications of the relationship (see Guralnick & Groom, 1988). Finally, the dependence of these analyses on parental reports is of potential concern. However, the nature and specificity of the questions, and reliance on knowledge of either their child's close relationships (children played with regularly) or regular participation in groups, increases the likelihood that maternal reports are accurate. Even if mothers depended to some extent on their child's reporting of social contacts, available data indicate substantial agreement (Feiring & Lewis, 1988; Zelkowitz, 1989).

## References

- Achenbach, T. M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington: University of Vermont, Department of Psychiatry.
- American Speech-Language-Hearing Association. (1995). Prevalence of communication disorders among children in the United States. In *Communication facts (Science and Research Department Rep.)*. Rockville, MD: Author.
- Bailey, D. B., Jr., & Winton, P. J. (1989). Friendship and acquaintance among families in a mainstreamed day care center. *Education and Training in Mental Retardation, 24*, 107-113.
- Bhavnagri, N. P., & Parke, R. D. (1991). Parents as direct facilitators of children's peer relationships: Effects of age of child and sex of parent. *Journal of Social and Personal Relationships, 8*, 423-440.
- Booth, C. L. (1994). *Beliefs about social-skills development among mothers of preschoolers with disabilities*. Paper presented at the meeting of the International Society for the Study of Behavioral Disorders, Amsterdam, Netherlands.
- Byrne, E. A., Cunningham, C. C., & Sloper, P. (1988). *Families and their children with Down's syndrome: One feature in common*. London: Routledge.
- Carrow-Woolfolk, E. (1985). *Manual for the Test for Auditory Comprehension of Language-Revised*. Allen, TX: DLM Teaching Resources.
- Dyson, L. L. (1993). Response to the presence of a child with disabilities: Parental stress and family functioning over time. *American Journal on Mental Retardation, 98*, 207-218.
- Feiring, C., & Lewis, M. (1988). The child's social network from three to six years: The effects of age, sex, and socioeconomic status. In S. Salzinger, J. Antrobus, & M. Hammer (Eds.), *Social networks of children, adolescents, and college students* (pp. 93-112). Hillsdale, NJ: Erlbaum.
- Goffman, E. (1963). *Stigma*. Englewood Cliffs, NJ: Prentice-Hall.
- Guralnick, M. J. (1990). Peer interactions and the development of handicapped children's social and communicative competence. In H. Foot, M. Morgan, & R. Shute (Eds.), *Children helping children* (pp. 275-305). Sussex, England: Wiley.
- Guralnick, M. J., Connor, R., & Hammond, M. (1995). Parent perspectives of peer relations and friendships in integrated and specialized programs. *American Journal on Mental Retardation, 99*, 457-476.
- Guralnick, M. J., Connor, R., Hammond, M., Gottman, J. M., & Kinnish, K. (1996a). Immediate effects of mainstreamed settings on the social interactions and social integration of preschool children. *American Journal on Mental Retardation, 100*, 359-377.



- Guralnick, M. J., Connor, R., Hammond, M., Gottman, J. M., & Kinnish, K. (1996b). The peer relations of preschool children with communication disorders. *Child Development, 67*, 471-489.
- Guralnick, M. J., & Groom, J. M. (1987). The peer relations of mildly delayed and nonhandicapped preschool children in mainstreamed playgroups. *Child Development, 58*, 1556-1572.
- Guralnick, M. J., & Groom, J. M. (1988). Friendships of preschool children in mainstreamed playgroups. *Developmental Psychology, 24*, 595-604.
- Guralnick, M. J., & Neville, B. (1997). Designing early intervention programs to promote children's social competence. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 579-610). Baltimore: Brookes.
- Guralnick, M. J., & Weinhouse, E. M. (1984). Peer-related social interactions of developmentally delayed young children: Development and characteristics. *Developmental Psychology, 20*, 815-827.
- Hollingshead, A. B. (1975). *Four factor index of social status*. Unpublished manuscript, Yale University, Department of Sociology, New Haven.
- Howes, C. (1988). Peer interaction of young children. *Monographs of the Society for Research in Child Development, 53*(1, Serial No. 217).
- Ladd, G. W., & Golter, B. S. (1988). Parents' management of preschooler's peer relations: Is it related to children's social competence? *Developmental Psychology, 14*, 109-117.
- Ladd, G. W., & Hart, C. H. (1992). Creating informal play opportunities: Are parents' and preschoolers' initiations related to children's competence with peers? *Developmental Psychology, 28*, 1179-1187.
- Ladd, G. W., Hart, C. H., Wadsworth, E. M., & Golter, B. S. (1988). Preschoolers' peer networks in nonschool settings: Relationship to family characteristics and school adjustment. In S. Salzinger, J. Antrobus, & M. Hammer (Eds.), *Social networks of children, adolescents, and college students* (pp. 61-92). Hillsdale, NJ: Erlbaum.
- Ladd, G. W., & Price, J. M. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58*, 1168-1189.
- Ladd, G. W., Profilet, S. M., & Hart, C. H. (1992). Parents' management of children's peer relations: Facilitating and supervising children's activities in the peer culture. In R. D. Parke & G. W. Ladd (Eds.), *Family-peer relationships: Modes of linkage* (pp. 215-253). Hillsdale, NJ: Erlbaum.
- Lewis, M., Feiring, C., & Brooks-Gunn, J. (1987). The social networks of children with and without handicaps: A developmental perspective. In S. Landesman & P. Vietze (Eds.), *Living environments and mental retardation* (pp. 377-400). Washington, DC: American Association on Mental Retardation.
- Mize, J., Pettit, G. S., & Brown, E. G. (1995). Mothers' supervision of their children's peer play: Relations with beliefs, perceptions, and knowledge. *Developmental Psychology, 31*, 311-321.
- Murphy, C. C., Yeargin-Allsopp, M., Decouflé, P., & Drews, C. D. (1995). The administrative prevalence of mental retardation in 10-year-old children in metropolitan Atlanta, 1985 through 1987. *American Journal of Public Health, 85*, 319-323.
- Newcomb, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin, 117*, 306-347.
- Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales*. Circle Pines, MN: American Guidance Service.
- Stoneman, Z. (1993). The effects of attitude on preschool integration. In C. A. Peck, S. L. Odom, & D. D. Bricker (Eds.), *Integrating young children with disabilities into community programs* (pp. 223-248). Baltimore: Brookes.
- Stoneman, Z., Brody, G. H., Davis, C. H., & Crapps, J. M. (1988). Childcare responsibilities, peer relations, and sibling conflict: Older siblings of mentally retarded children. *American Journal on Mental Retardation, 93*, 174-183.
- Wechsler, D. (1989). *Wechsler Preschool and Primary Scale of Intelligence-Revised*. San Antonio: Psychological Corp.
- Whitehurst, G. J., Fischel, J. E., Arnold, D. S., & Lonigan, C. J. (1992). Evaluating outcomes with children with expressive

---

language delay. In S. F. Warren & J. Reichle (Eds.), *Causes and effects in communication and language intervention* (Vol. 1, pp. 277-313). Baltimore: Brookes.

**Zelkowitz, P. (1989).** Parents and children as informants concerning children's social networks. In D. Belle (Ed.), *Children's social networks and social supports* (pp. 221-237). New York: Wiley.

**Zimmerman, I. L., Steiner, V. G., & Pond, R. E. (1979).** *Preschool Language Scale* (rev. ed.). Columbus, OH: Merrill.

---

*Received 1/24/96, first decision 6/23/96, accepted 9/21/96.*

---

**This research was supported by Grant No. H024K90002 from the Department of Education, Office of Special Education Programs. Appreciation is expressed to R. Connor and M. Hammond for assistance with data collection and data analysis. Requests for reprints should be sent to Michael J. Guralnick, Center on Human Development and Disability, University of Washington, Box 357920, Seattle, WA 98195.**