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Dyadic Peer Interactions of Mildly Delayed and Nonhandicapped Preschool Children

MICHAEL J. GURALNICK
University of Washington

JOSEPH M. GROOM
The Ohio State University

Mildly developmentally delayed and nonhandicapped 3- and 4-year-old children were paired systematically in a series of dyadic play sessions to evaluate the effects of companion status on important aspects of peer-related social and play behavior. Mildly delayed children were paired with younger nonhandicapped children matched in terms of developmental level, with nonhandicapped children matched in terms of CA, and with other mildly delayed companions. Mixed-age and same-age pairings for the nonhandicapped children were also arranged. Results indicated that mildly delayed children's peer interactions improved substantially when paired with nonhandicapped older children in comparison to pairings with other mildly delayed children. Pairings with nonhandicapped younger children, although matched in terms of developmental level, had no influence on the peer interactions of mildly delayed children. Nonhandicapped children appeared to be able to maintain a consistent level of interaction irrespective of companion status. Explanations for these findings in terms of the directive role adopted by nonhandicapped older children and their developmental implications were discussed.

An important factor governing the quality and quantity of child–child social interactions among age mates is the social behavior and related characteristics of one's companions (Hartup, 1983). Numerous social–cognitive processes are involved that have reciprocal, imitative, and complementary interaction components as coordinated and often symmetrical social exchange patterns develop (Cairns, 1979; Charlesworth & Hartup, 1967; Guralnick, 1986; Kohn, 1966; Leiter, 1977). The selection of compatible companions in unrestricted play situations is one factor that promotes the similar interaction patterns often observed among age-mates. Moment-to-moment adjustments to a companion's social behavior also are apparent at many levels, however, and are essential if successful and sustained social exchanges are to occur among children.

In contrast to unrestricted free play, the systematic pairing of children varying in terms of chronological age (CA), developmental level, or even the existence of a handicap provides a circumstance in which the effects and limits of these processes of accommodation and adjustment can be evaluated. Observations comparing mixed-age and same-age dyads have suggested that the CA of peers does in fact influence the pattern of social and communicative interactions. Lougee, Grueneich, and Hartup (1977) compared the positive social interactions of unacquainted same-age younger (3-year-olds), same age older (4-year-olds), and mixed age (16-month difference) dyads. In general, interactions occurred more frequently in older than younger pairings, with mixed-age dyads holding an intermediate position. The younger members of the mixed-age dyad increased their level of interacting whereas older members reduced their level in comparison to same-age pairings. More detailed analyses of individual children in the mixed age pairs, however, indicated that there was considerable variability in that the accommodations that were made were not consistent in magnitude for either the older or younger members of the mixed-age dyads. Comparisons of mixed-age and same-age dyads of 3- and 5-year-olds yielded somewhat different findings (Langlois, Gottfried, Barnes, & Hendricks, 1978). In this case, both 3- and 5-year-old boys interacted (talked) more in same-age than mixed-age dyads.

Many differences existed between these two

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studies, and it is difficult to determine the source of the discrepancy. One possible explanation for the finding that the 3-year-olds did not increase their interactions in the mixed-age pairs in the Langlois et al. (1978) study was the relatively large age difference. This may have resulted in older boys' dominating and perhaps suppressing the social behavior of their younger companions. Alternatively, familiarity may have played a role as children were unacquainted with one another in the Lougee et al. (1977) study but were part of a larger nursery group in the Langlois et al. investigation, with considerable prestudy play experiences with one another. Doyle, Connolly, and Rivest (1980) found that, in contrast to unfamiliar pairings, familiar dyads engage in more frequent social interactions, are involved in more sustained levels of social participation, and play more constructively. Accordingly, the tendency of children to select age mates in the group setting may have influenced familiarity and consequent social behavior in the dyads.

An additional challenge to children's abilities to adjust to one another occurs when one member of the dyad is handicapped. Vandell and George (1981) observed normal-hearing and hearing-impaired children matched in terms of sex and CA in a playroom setting. The composition of the dyads varied, consisting of both heterogeneous and homogeneous pairings. Sustained and effective interactions were greater in hearing than hearing-impaired dyads, with mixed pairings having the least success. Detailed analyses of hearing-impaired children's initiation strategies revealed that although they actually initiated more interactions to both hearing and hearing-impaired companions, their success rate was lower than that of normal-hearing children. Moreover, normal-hearing children appeared to have difficulty adjusting their initiation strategies to children with hearing impairments. Many initiations were inappropriate, consisting of gestures or vocalizations that could not possibly be responded to by their hearing-impaired partners, and hearing children often failed to select strategies that combined different content categories to improve their chances of success. Similar comparisons involving language-delayed and normally developing children indicated that the relative lack of attempts to initiate interactions by language-delayed children when their partner was not interacting was a prominent social behavior pattern (Siegel, Cunningham, & van der Spuy, 1985). Moreover, when language-delayed children interacted with normally developing companions, they tended to exert less control over the interaction than when their partner was another language-delayed child.

Interest in the nature of social interactions occurring between young handicapped and nonhandicapped children has increased dramatically in recent years as a consequence of efforts to integrate or mainstream handicapped children during the preschool years (Guralnick, 1978, 1982). Thus, the ability to adapt to the characteristics of one's companion and perhaps even to influence various qualitative and quantitative features of a companion's social behavior may have important developmental–educational implications. Children exhibiting relatively mild developmental (cognitive) delays are likely to have frequent opportunities to interact with normally developing children in these mainstreamed settings, yet very limited information is available on the nature of their social interaction patterns. This is especially problematic because even when developmental level is taken into consideration, mildly developmentally delayed children observed in nonintegrated settings appear to exhibit substantial deficits in their peer-related social interactions (Guralnick & Groom, 1985; Guralnick & Weinhouse, 1984). The introduction of normally developing children into a group setting containing mildly delayed children, however, has yielded only nominal changes in the social behavior of both mildly delayed and nondelayed children (Field, Roseman, DeStefano, & Koewler, 1981; Guralnick, 1981).

Group settings do not always yield the same effects as dyadic pairings, even in mixed-age situations (Goldman, 1981; Goldman & Chaille, 1984). In group settings containing delayed and nonhandicapped children, factors related to self-selection, the tendency toward social isolation of the delayed children, and the special difficulties many delayed children experience in complex social environments may operate to limit any effects of the availability of nonhandicapped children (Guralnick & Groom, in press). In contrast, interactions that occur as a result of selective

pairings of children may prove to be of special value. Guralnick (1984) suggested that it is possible to capitalize on various characteristics of the diverse child–child interactions that can occur in mainstreamed settings by systematically pairing children for specific developmental or therapeutic purposes. In certain situations active partners, co-equal in ability, may be most helpful; in others, pairings with more socially competent partners who are highly directive, displaying few egalitarian features, may prove beneficial. In fact, Furman, Rahe, and Hartup (1979) have shown that pairing less socially assertive children with younger, and therefore less developmentally advanced, companions can provide social interaction opportunities and subsequent benefits to the less assertive children that are not likely to result when interactions occur between age mates of equivalent social skill and developmental status. The value of normally developing peers as therapeutic agents for children with significant handicaps has also been demonstrated (Strain, 1986).

If such pairings are to be effective for mildly delayed children, it is essential that the nature of typical social interaction patterns occurring between mildly delayed and nonhandicapped children in dyadic settings be examined. Accordingly, in this study mildly delayed and nonhandicapped children were drawn from a series of mainstreamed playgroups (Guralnick & Groom, in press) and systematically paired to evaluate the effects of one's companion on important qualitative and quantitative aspects of peer-related social and play behavior. Because CA and developmental status appear to be potentially important factors, mildly delayed children were paired with younger nonhandicapped children matched in terms of developmental level as well as with nonhandicapped children matched in terms of CA. Comparisons of social interactions occurring in dyads consisting only of other mildly delayed children served as a framework within which the effects of nonhandicapped companions could be evaluated. Additional pairings allowed an assessment of the impact of the companion's CA and developmental status on the peer-related social interactions of both the younger and older nonhandicapped children.

Method

Subjects

Previously unacquainted groups of nonhandicapped and mildly developmentally delayed preschool-age boys were brought together to form a series of mainstreamed playgroups. Eight such playgroups were established, each composed of three normally developing 3-year-olds, three normally developing 4-year-olds, and two mildly developmentally delayed 4-year-olds. The delayed children were selected to achieve a CA match with the normally developing 4-year-olds and a developmental age match with the normally developing 3-year-olds. Each playgroup operated 5 days per week for 2 hours per day for a 4-week period. Prior to and during the course of the 4-week period, a wide array of demographic and child characteristic information was obtained through inspection of records, individual testing, and interviews with parents and teachers. As described later, within each playgroup selected pairs of children were brought together in a separate experimental playroom for dyadic play sessions.

Normally developing children were recruited through advertisements in local newspapers and newsletters and through direct contact with administrators and teachers of public and private nursery schools. Delayed children meeting specific inclusion criteria (see later discussion) were recruited from the rosters of service programs for developmentally delayed children in a midwestern community of moderate size. The sample of mildly delayed children participating in this study appeared to be highly representative of this population, as they were all served by a limited number of providers in the community, and a relatively low refusal rate (15%) was obtained. Primary reasons for refusal were transportation problems or limited family resources. Parents typically brought their children to the playgroup and were paid $100 plus transportation expenses for their participation.

Specific CA and IQ ranges were established as part of the inclusion criteria for each of the three groups of children constituting the playgroups. Children were screened through individual administrations of the revised Stanford-Binet Intelligence Scale (Terman & Merrill, 1973). For the nonhandicapped older group,

the CA range was 48 to 60 months and the IQ range was 90 to 125. For the nonhandicapped younger group, established ranges were 30 to 42 months for CA and 90 to 125 for IQ. For the mildly delayed group, the CA range also was set at 48 to 60 months, with IQs ranging between 55 and 80. The categorization of children as mildly delayed is generally consistent with the classification scheme of the American Association on Mental Deficiency (Grossman, 1983) and conforms to community practice. Corresponding mental age (MA) ranges for the nonhandicapped older and younger and mildly delayed groups were 49 to 79, 32 to 60, and 32 to 54 months, respectively. Other criteria for participation were that (a) children were not acquainted; (b) had no prior experience in mainstreamed programs; (c) had no handicapped siblings; (d) and exhibited no major sensory, motor, or behavioral impairments. (Criterion A was satisfied completely for the nonhandicapped groups, but it was not possible to assure total lack of contact for the delayed children given that many were served by one agency. With regard to Criterion B, 2 children did participate in a program that included a small number of normally developing children, but the group consisted primarily of other delayed children. Approximately 20% of the children meeting other inclusion criteria were excluded for exhibiting behavioral impairments based on teacher judgments. Their absence of behavioral control and extensive acting out or aggression were the primary reasons cited.)

Available children meeting these criteria were assigned to playgroups on a random basis. On rare occasions nonhandicapped younger children at the extremes of the MA range were excluded to ensure a mean MA match between nonhandicapped younger and mildly delayed groups. Although each of the playgroups was not identical, the established ranges as part of the inclusion criteria and the sampling procedure minimized across-playgroup variability (see Table 1). Within each of the three groups, mean differences across playgroups averaged less than 2 months for both CA and MA, and IQs varied by less than an average of 6 points. Additional information was obtained by administering the Preschool Language Scale (Zimmerman, Steiner, & Pond, 1979) prior to the beginning of the study. An estimate of socioeconomic status (SES) was obtained by using an occupation-based measure derived from the Siegel Prestige Scale (Hauser & Featherman, 1977) as recommended by Mueller and Parcel (1981). Finally, etiologic information was obtained for the mildly delayed children from interviews and records and was classified as follows: 18.75% chromosomal disorders; 0% prenatal infections and intoxications, congenital anomalies and disorders of unknown origin, and inborn errors of metabolism; 12.5% perinatal disorders and trauma; 18.75% postnatal trauma and other causes; and 50% unknown.

As noted, each playgroup consisted of 3 nonhandicapped 4-year-olds (designated Nonhandicapped Older 1, 2, and 3); 3 nonhandicapped 3-year-olds (designated Nonhandicapped Younger 1, 2, and 3); and 2 mildly delayed 4-year-olds (designated Mildly Delayed 1 and 2). At the beginning of each playgroup, children within each group were assigned randomly to one of the two or three subject designations. These were retained throughout the study. Resulting CA, IQ, and MA scores for each of the eight subject designations, averaged across the eight playgroups, are presented in Table 2, along with the language and SES measures. As can

Table 1
Key Subject Characteristics by Group

Group[b]	*N*	CA[a] Mean	CA[a] Range	MA[a] Mean	MA[a] Range	IQ Mean	IQ Range
NHO	24	53.75	48–59	65.50	54–74	110.83	93–124
NHY	24	36.54	31–42	44.83	38–58	106.50	93–123
MD	16	52.25	48–59	43.25	36–53	71.56	59–86

Note. Corrected MAs, designed to restore an MA–CA equivalence for the average child on the revised Stanford-Binet Intelligence Scale (see Shorr, McClelland, & Robinson, 1977) yielded the following for the older nonhandicapped, younger nonhandicapped, and mildly delayed groups, respectively: 59.88 months (range: 48 to 68); 38.92 months (range: 32 to 52), and 37.31 months (range: 31 to 47). Corrected MAs were used for all analyses.
[a] In months. [b] NHO = nonhandicapped older, NHY = nonhandicapped younger, MD = mildly delayed.

be seen from the table, subjects within each of the three groups were highly similar to one another. In addition, as expected on the basis of the selection criteria, mildly delayed children were well matched with the older nonhandicapped group in terms of CA and with the younger nonhandicapped group in terms of developmental level.

Dyad Pairings and Procedure

Each child participated in a series of 15-minute dyadic play sessions. Eight pairings were selected per playgroup to provide opportunities for comparing interactions across the CA and developmental status combinations of interest (see *Results*). The pairings selected were as follows: (1) MD1–MD2, (2) MD1–NHY3, (3) MD2–NHO3, (4) NHO1–NHO2, (5) NHO1–NHY1, (6) NHO2–NHY2, (7) NHO3–NHY3, and (8) NHY1–NHY2. (MD = mildly delayed, NHO = nonhandicapped older, NHY = nonhandicapped younger.) One child did exceed the IQ cut-off of 80 but was included due to the existence of a syndrome (Williams) consistent with the developmental pattern of the other children in the sample. Of the 4 black children in the sample, 1 was mildly delayed; 1, nonhandicapped older; and 2, nonhandicapped younger. The absolute difference scores (means) for each of the eight dyad pairs (for CA, MA, and IQ, respectively) were as follows: (1) MD1–MD2 (2.25, 4.25, 7.13); (2) MD1–NHY3 (15.75, 4.75, 32.63); (3) MD2–NHO3 (3.50, 23.25, 42.00); (4) NHO1–NHO2 (4.75, 7.00, 10.88); (5) NHO1–NHY1 (16.71, 20.29, 9.14); (6) NHO2–NHY2 (17.25, 19.25, 12.13); (7) NHO3–NHY3 (16.75, 21.50, 9.75); and (8) NHY1–NHY2 (3.86, 5.43, 8.57). Due to the random pairing procedure, the direction of these differences varied unsystematically within each dyad, yielding well-matched groups.

As can be seen, each of the 8 children was paired with 2 others from the playgroup. Each pairing was brought together four times (a total of 60 minutes per dyad), twice during the second week (referred to as Time 1) and twice during the final fourth week (referred to as Time 2) of the playgroup. Accordingly, each child participated in a total of eight dyad sessions. The order of each of the eight sessions was random, and no more than one dyad session per pair was scheduled each day.

Dyads were brought from the playgroups to a playroom in an adjoining classroom for all sessions. This playroom consisted of a section of a larger classroom partitioned off by furniture and storage equipment containing toys and materials to create a 2.13 × 3.67 m U-shaped area. Toys available in this area were similar to those in the playgroup classroom, including housekeeping equipment, blocks, pull toys, pre-cast toys, puzzles, and a wide array of small manipulable objects. Children were told that they could play with any of the toys on the shelves for the next 15 minutes and were instructed to remain within the U-shaped area. The experimenter then left and videotaped the session through a one-way mirror

Table 2
Individual Subject Characteristics Within Each Group Averaged Across the Eight Playgroups

	CA		MA		IQ		Language age		SES	
Group	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
NHO										
1	53.88	3.48	66.38	3.16	111.25	9.87	63.46	2.32	46.04	16.28
2	53.88	3.60	64.13	6.58	108.38	8.47	62.94	5.77	42.15	6.73
3	53.50	3.30	66.00	5.32	112.88	6.56	61.88	4.23	59.25	15.28
NHY										
1[a]	36.43	3.95	45.86	6.91	109.43	8.38	48.33	6.58	48.86	12.21
2	36.63	2.33	44.88	4.82	106.50	9.96	48.31	3.98	45.05	8.35
3	36.75	2.25	44.25	5.26	104.88	8.06	45.74	5.70	46.91	11.09
MD										
1	52.50	3.30	43.75	4.83	72.25	8.75	41.28	6.41	39.56	15.42
2	52.00	3.46	42.75	1.98	70.88	3.27	42.13	3.35	40.48	18.90

Note. All data are mean scores based on 8 children, one from each playgroup. NHO = nonhandicapped older, NHY = nonhandicapped younger, MD = mildly delayed.
[a] The NHY1 group consisted of only 7 subjects, as one child was fearful of the dyad playroom.

from an adjacent observation room. One of the children wore a specially designed lightweight vest equipped with a radiotelemetry microphone and wireless transmitter (HME model Wm 225A) secured in a hidden pocket in the vest. The speech of both children could be picked up and transmitted in this relatively small space. Accordingly, visual and auditory records of the interactions of both children were obtained without imposing any restrictions on the normal flow of activities.

As described later, videotaped records were analyzed using two separate scales: one focusing on more global measures of social participation and cognitive play and the other, on individual social behaviors. During coding we reviewed the videotapes and scored them four times, focusing separately on each of the children in the dyad and on each of the two scales.

Observational Measures

Social participation and cognitive play. A time code superimposed on each videotape in conjunction with a remotely controlled tape-stop device allowed observers to view tapes at 10-second intervals. Coders recorded the quality of social participation and levels of cognitive play during each 10-second interval using a slightly modified version of the scale developed by Rubin and his colleagues (Rubin, Maioni, & Hornung, 1976; Rubin, Watson, & Jambor, 1978). This scale consists of 11 mutually exclusive and exhaustive categories. The first 3 were derived from Parten's (1932) social participation categories consisting of the following play classifications: (a) solitary (playing alone), (b) parallel (playing next to another child), and (c) group (playing with another child; a combination of Parten's associative and cooperative play categories). Nested within these 3 social participation categories are four measures of cognitive play based on the work of Smilansky (1968): (a) functional (simple repetitive play), (b) constructive (learns to use materials, creates something), (c) dramatic (role taking and pretend play), and (d) games with rules (child behaves in accordance with prearranged rules). If any 10-second interval was coded as either solitary, parallel, or group play, then 1 of the 4 cognitive play categories was also scored.

The 8 remaining categories consisted of the following: (a) unoccupied behavior (child not playing, (b) onlooker behavior (child watches other children but does not enter into play), (c) reading (reading, leafing through a book, or being read to), (d) rough and tumble (mock and playful fighting, running after one another), (e) exploration (examining physical properties of objects), (f) active conversation (talking, questioning, and suggesting to other children but not playing), (g) transitional (moving from one activity to another), and (h) adult-directed (any activity with an adult). More specific definitions for the social participation and cognitive play categories can be found in Rubin's (1981) manual.[1]

Individual social behaviors. Each videotape was reviewed a second time in order to examine specific peer-related social behaviors. For this purpose, an individual social behavior scale was developed based on the work of White and Watts (1973) and adapted in a manner similar to the scales of Doyle et al. (1980) and Guralnick and Groom (1985, in press). Specifically, observers continuously recorded the occurrence of individual social behaviors organized within 13 major categories. Ten categories were designed to record social interactions of the focal child as directed to the companion. These were as follows: (1) gains the attention of companion, (2) uses companion as a resource, (3) leads companion in activities—positive and neutral, (4) leads companion in activities—negative, (5) imitates companion, (6) expresses affection to companion, (7) expresses hostility to companion, (8) competes for equipment, (9) shows pride in product or attribute to companion, and (10) follows companion's activity without specific directions to do so. Two of the remaining categories focused on the social behaviors of the focal child in response to directed activities of the companion: (a) follows the lead of companion in response to verbal or nonverbal directions, and (b) refuses to follow or ignores companion's directions or requests. The final

[1] Coding rules and related modifications of this scale as well as the coding manual for the Individual Social Behavior Scale can be obtained by writing to the first author. The reading category was omitted as no books were available.

category was one in which the focal child served as a model for the companion.

Seven of these 13 major categories also contained subcategories that were coded separately. The category gains the attention of companion was coded in terms of the form by which that attention was sought. Specific subcategories were: (a) moving toward the other child, (b) touching, (c) calling, (d) telling or showing something, and (e) showing off. When the focal child used the companion as a resource, the specific purpose of that interaction was coded as: (a) seeking explanation or information, (b) seeking help with clothes, or (c) seeking help with equipment. When the focal child followed the explicitly stated or indicated (nonverbal) lead of the companion, the event was coded as to whether the focal child followed in terms of (a) what to do, (b) how to do something, or (c) whether what was complied with was a modification of the original request by the companion. When the focal child followed the activities of the companion without any specific directions to do so, these spontaneous interactions were coded as: (a) involved observation of the companion, (b) verbally supporting the companion's statement, (c) following the companion, or (d) joining companion in a specific activity. Expressing affection to the companion was coded as either (a) verbal/smile, (b) physical, or (c) offering help or sharing. Similarly, expressing hostility was coded as either (a) verbal or (b) physical; and competing for equipment was divided into (a) defending property or (b) taking an unoffered object. When behaviors in subcategories occurred simultaneously, specific priority coding rules were followed.

Accordingly, with the addition of the subcategories, a total of 28 individual behavioral events were available for coding. In addition, Categories 1, 2, 3, 4, and 8 of the 10 categories designed to record the social interactions of the focal child as directed to the companion, including subcategories, were judged as either successful or unsuccessful. Definitions for successful or unsuccessful social interactions were specific to each social behavior category and are included in the coding manual.

Coders were free to review any segment of the tape as often as needed. The coding protocol was divided into 30-second intervals following the time codes superimposed on the tape. Although coding was continuous, these divisions provided a structure for the individual social behavior coding task and served as a framework for establishing reliability (see later discussion) within the event-based system.

Reliability

Prior to the coding of the data, three raters were trained for a period of 6 to 8 weeks on the two observation scales. Following the training program, all raters achieved the minimum average criterion necessary for participation of 80% interobserver agreement for each of the major categories for five consecutive 10-minute segments on each of the two scales. Videotapes of pilot playgroups, rather than dyads, were used for training and final pre-study reliability assessments. The more complex playgroups constituted a more stringent test of reliability than did the dyads; however, reliability was obtained during the course of the study on the dyads themselves, based on 25% of the tapes selected on a random basis.

For the social participation and cognitive play scale, reliability was based on percentage agreement obtained across each of the 10-second observation intervals (number of agreements divided by the total number of observations and transformed to a percentage). Cohen's (1960) Kappa was also calculated where appropriate. For pre-study reliability, raters agreed on a mean of 90% (range 79 to 100%) of the intervals (Kappa = .88) for the 11 categories of the social participation scale. Using only those instances in which observers agreed that a cognitive play coding was required, we found that interobserver agreement averaged 96% (range 86 to 100%) for the four cognitive play categories. Reliability assessments during the course of the study for the dyads were: social participation, 90% (range 87 to 94%), Kappa = .87 (range .82 to .93), and cognitive play, 96% (range 94 to 98%).

For the individual social behavior scale, raters were considered to be in agreement if codes matched exactly within a specified 30-second interval. All 28 individual social behavior categories were included in addition to a "no-interaction" event that completed the

possible options within each interval. Percentage agreement was obtained by taking the total number of agreements, dividing by the total number of observed individual social interactions, and transforming to a percentage. One unit was added if both observers agreed that no interaction had occurred during an entire 30-second interval. Calculated in this manner, the average pre-study agreement for the individual social behavior scale was 86% (range 77 to 100%), Kappa = .85. Given agreement on the occurrence of a particular social interaction, observers further agreed on an average of 84% (range 69 to 100%) of the occasions as to whether the event could be classified as successful or unsuccessful. During the course of the study, reliabilities for the dyads were as follows: individual social behaviors, 88% (range 82 to 92%), Kappa = .85 (range .77 to .90), and successful/unsuccessful, 94% (range 89 to 97%).

Results

In the following analyses, the effects of companion status (mildly delayed, younger nonhandicapped, older nonhandicapped) on the social and play interactions of children representing each of three groups were examined. A set of comparisons was selected from the pairings noted earlier to address questions of interest focusing separately on the mildly delayed, nonhandicapped older, and nonhandicapped younger groups. As described later, depending upon the comparison selected, either within- or between-subject analyses of variance involving the companion status variable were carried out for measures based on each of the two scales. In addition, for each measure, data were summed across the first two (Time 1) and second two (Time 2) observation periods, thereby permitting an assessment of any changes over time. Accordingly, time was added as a within factor for each analysis. In those instances in which multivariate analyses of variance were applied, Wilks' criterion was used (SAS, 1982). Whenever frequency data were transformed to proportions, the arcsine transformation was used. To facilitate interpretation of the results, however, data presented in the tables and text are untransformed scores. Results are organized in terms of the analyses available for children representing the mildly delayed, nonhandicapped younger, and nonhandicapped older groups. An additional comparison permitted an assessment of the social and play interactions of children when paired with companions representing their own group.

Mildly Delayed Children

The effects of companion status on mildly delayed children's social and play interactions were analyzed in two separate comparisons. Simultaneous between-subject comparisons (see later discussion) for all three companion groups for the companion status factor were not possible here because only 2 mildly delayed children were available. In the first comparison, one of the mildly delayed children (Mildly Delayed 2) from each playgroup was paired with the other mildly delayed child (Mildly Delayed 1) as well as with an older nonhandicapped child (Nonhandicapped Older 3). Accordingly, the social and play interactions of mildly delayed children (focal children) interacting with other mildly delayed children were contrasted with pairings with chronologically similar but developmentally more advanced companions.

A 2 (companion status) $\times$ 2 (time) multivariate analysis of variance with repetition across both factors carried out on the frequency of intervals coded for the categories of the social participation scale revealed a significant multivariate effect for companion status, $F(9, 20) = 2.40$, $p < .05$. Separate univariate analyses yielded significant findings for solitary play, $F(1, 28) = 7.76$, $p < .01$, and conversation, $F(1, 28) = 4.79$, $p < .05$. When paired with children similar to themselves in both developmental status and CA, mildly delayed children engaged in more solitary play (mean = 203.50 with mildly delayed, mean = 153.88 with nonhandicapped older) and in less conversation (mean = 14.50 with nonhandicapped older, mean = 6.63 with mildly delayed) in comparison to chronologically similar but developmentally more advanced companions. Although group play just failed to reach significance, $p < .057$, we note that when companions were other mildly delayed children, group play occurred in less than 3% of the intervals. In contrast, when companions were from the

nonhandicapped older group, group play occurred approximately 8% of the time.

As described earlier, the cognitive level of children's play was coded whenever solitary, parallel, or group play was observed. Separate analyses of variance were carried out on the percentages of functional, constructive, and dramatic play (the games with rules category was omitted because it occurred rarely). Overall, constructive play was dominant, occurring in just under 90% of the intervals. No differences were obtained for any of the variables.

The individual social behavior measures (see Table 3) were first reorganized into a negative interaction category (consisting of negative leads, takes unoffered object, defends property, refuses to follow, and hostility) and a positive interaction category (all others). A separate analysis of variance carried out on the number of positive interactions revealed a significant effect for companion status, $F(1, 28) = 5.40$, $p < .05$. Approximately twice as many positive interactions were observed when the companion was an older nonhandicapped child than when the companion represented the mildly delayed group (means = 129.63 and 65.88, respectively). No significant effects were obtained for the frequency of negative interactions.

To evaluate whether specific individual social behaviors were affected, we carried out a 2 × 2 multivariate analysis of variance on the frequency of their occurrence for the 13 major categories. No significant multivariate effects were obtained; however, inspection of the data revealed that a greater frequency of interaction occurred when mildly delayed children were paired with older nonhandicapped children in comparison to other mildly delayed children for virtually every category, especially gains attention, use as resource, positive leads, imitation, and follows lead (see Table 3). To examine whether the mildly delayed children distributed their individual social behaviors in a similar pattern to each of the companions, we transformed the frequency distributions to a measure of the proportion of total interactions coded for each category. A multivariate analysis of variance revealed no significant effects for companion status, time, or the interaction term.

Finally, as noted, 6 of the individual social behavior categories were judged as successful or unsuccessful. The proportion of social bids that were successful were summed across the 6 categories for each child and a 2 (companion status) × 2 (time) analysis of variance was carried out. Overall, children were successful in obtaining an appropriate response to their social interactions on approximately 50% of the occasions; however, no significant effects for any of the variables were obtained.

The second within-subject analysis compared mildly delayed children's interactions with other mildly delayed children in relation to their interactions with chronologically younger but developmentally matched companions. The appropriate dyads for this comparison consisted of Mildly Delayed 1 paired with Mildly Delayed 2 and with Nonhandicapped Younger

Table 3
Peer-Related Social Interactions of Mildly Delayed Children as a Function of Companion Status

	Companion status			
	Mildly delayed		Nonhandicapped older	
Interaction	Mean	*SD*	Mean	*SD*
Social participation				
Solitary	203.50	34.66	153.88	32.68
Parallel	57.13	15.87	73.25	22.63
Group	7.75	7.30	29.63	32.10
Unoccupied	40.25	23.05	38.88	33.10
Onlooker	11.88	13.59	19.25	12.20
Transition	19.88	7.14	18.38	9.36
Conversation	6.63	8.38	14.50	9.12
Ruff & tumble	6.13	6.77	6.38	8.07
Exploratory	3.00	5.40	3.00	2.83
Adult involved	3.88	3.56	2.88	3.72
Individual social behaviors				
Attention	13.25	12.90	30.63	30.96
Resource	15.25	37.55	28.38	41.14
Lead (positive)	16.00	22.96	23.75	17.75
Lead (negative)	4.50	7.45	2.00	2.56
Model	2.25	2.25	2.00	1.85
Follows lead	6.63	5.21	16.63	17.86
Follows activity	9.13	6.81	16.38	7.58
Refuse	13.88	17.84	17.25	13.75
Imitation	2.38	2.50	10.88	13.98
Affection	1.13	1.55	1.75	2.66
Hostility	2.63	4.93	1.88	3.23
Equipment	7.00	5.95	5.25	3.92
Pride	0.13	0.35	0.75	1.75
Total interactions				
Positive	65.88	68.01	129.63	81.82
Negative	28.00	32.10	26.38	19.62

Note. Data consist of mean frequencies summed over the two time periods.

3. In contrast to pairings involving older nonhandicapped children, the social and play interactions of mildly delayed children were unaffected by companion status or time. The social participation scale measures were not significant for any of the variables. Overall, the mildly delayed children engaged in social play to only a limited extent with either group, as group play occurred in less than 3% of the intervals. Despite the general absence of social interactions, the delayed children were nevertheless playing with toys most of the time, and their play was almost always constructive (nearly 90%). Separate analyses of variance carried out on the percentages of functional, constructive, and dramatic play, however, were not significant for any of the variables.

Statistical analyses carried out on the individual social behavior categories, the frequency of positive and negative interactions, and the percentage success measure were all nonsignificant. In general, interactions were positive (approximately 80%), and the mildly delayed children were successful on approximately half the occasions. Accordingly, the consistent pattern indicated that mildly delayed children interacted with developmentally matched but chronologically younger normally developing children in a manner similar to that of other mildly delayed companions. Perhaps the most prominent feature of these dyads, however, was the general absence of social play with peers.

Nonhandicapped Older Children

To evaluate the effects of companion status and time on the interactions of the nonhandicapped older children, we carried out a series of mixed measures analyses. The appropriate dyads for this comparison consisted of Nonhandicapped Older 1 paired with Nonhandicapped Younger 1, Nonhandicapped Older 2 paired with Nonhandicapped Older 1, and Nonhandicapped Older 3 paired with Mildly Delayed 2. A multivariate analysis of variance carried out on the 10 social participation categories revealed a significant multivariate effect for companion status only, $F(18, 24) = 2.26$, $p < .05$. Although none of the univariate tests reached conventional levels of significance, the most notable difference occurred for the group play measure. Nonhandicapped older children engaged in more group play when the companion was another nonhandicapped older child than when with nonhandicapped younger companions (means = 65.0 and 46.72, respectively). The least involvement occurred when the companion was mildly delayed (mean = 27.88). Separate analyses of variance for each of the three cognitive play measures were not significant.

Similar analyses involving the individual social behavior measures, including the frequencies of positive and negative interactions (analyses of variance), the frequency and percentage distribution for the 13 major categories (multivariate analyses of variance), and the percentage success measure (analysis of variance) all failed to reach significance. The only major trend noted for the individual social behavior measure was the observation that mildly delayed children were rarely used as a resource. In addition, interactions were generally positive (approximately 75%), and play was dominated by constructive and dramatic categories (over 90%). Accordingly, nonhandicapped older children, despite extensive variation in the developmental status of their companions, were nevertheless able to engage in similar levels of social interaction. The relative absence of group play when the older nonhandicapped children were paired with mildly delayed children and limited utilization of the delayed children as a resource were the major trends that ran counter to this pattern.

Nonhandicapped Younger Children

Mixed measures analyses involving dyads in which the nonhandicapped younger children participated (Nonhandicapped Younger 1–Nonhandicapped Older 2, Nonhandicapped Younger 2–Nonhandicapped Older 2, and Nonhandicapped Younger 3–Mildly Delayed 1) were carried out in a similar fashion. Statistical analyses revealed that the interactions of the nonhandicapped younger children were unaffected by companion status or time. Analyses based on the social participation and cognitive play scale (frequencies for the 10 categories and percentages of cognitive play) as well as the individual social behavior measures (frequencies and percentages of the 13 major categories, the number of positive and negative

interactions, and percentage success) were all nonsignificant. Following a pattern similar to that of the nonhandicapped older children, the only strong trend in the data was toward less of an involvement in group play when the companion was mildly delayed.

Comparisons With Similar Companions

Each of the preceding analyses focused on comparisons when companions varied in terms of developmental status. Additional information can be obtained from comparisons involving dyads consisting of children from the same CA and developmental level group. Of special interest is the comparison between the dyads involving only the mildly delayed children in relation to the dyads consisting of only nonhandicapped younger children. This comparison of developmentally matched children may provide some insight into the nature of the interactions that would occur in nonintegrated programs.

Comparisons were available for pairs involving Mildly Delayed 1–Mildly Delayed 2, Nonhandicapped Older 1–Nonhandicapped Older 2, and Nonhandicapped Younger 1–Nonhandicapped Younger 2. One member from each dyad was selected randomly from each of the playgroups to serve as the subject in these comparisons. Although both subjects' scores could have contributed to the analysis, thereby increasing the N, the potential interdependencies within dyads suggested that this more conservative approach be followed (Kraemer & Jacklin, 1979). A 3 (dyad status) × 2 (time) mixed measures multivariate analysis of variance carried out on the frequency of occurrence of each of the social participation categories revealed a significant multivariate effect for time, $F(9, 12) = 4.12$, $p < .05$, and the Dyad Status × Time interaction, $F(18, 24) = 3.27$, $p < .01$. The multivariate effect for dyad status approached significance, $F(18, 24) = 1.74$, $p < .11$. Accordingly, separate univariate analyses were carried out for dyad status, time, and the interaction term.

For dyad status, significant effects were obtained for solitary play, $F(2, 20) = 8.52$, $p < .01$, onlooker behavior, $F(2, 20) = 3.78$, $p < .05$, and conversation, $F(2, 20) = 6.79$, $p < .01$. A strong trend was obtained also for the group play measure, $F(2, 20) = 3.37$, $p < .055$. Follow-up tests using the Newman-Keuls procedure, $p < .05$, revealed that the mildly delayed pairing was less socially interactive than either of the other two dyads. Mildly delayed children engaged in more solitary play than either the nonhandicapped younger or the nonhandicapped older dyads (means = 206.38, 120.57, and 117.50, respectively) and in less conversation (means = 8.00, 27.86, and 38.25, respectively, for the mildly delayed, nonhandicapped younger, and nonhandicapped older dyads). The nonhandicapped children participated in group play more than six times as frequently as did mildly delayed children in the dyads. Mildly delayed children also did not observe their companion (onlooker behavior) as frequently as did nonhandicapped younger children (means = 10.00 and 31.00, respectively). The nonhandicapped older group, although more similar to nonhandicapped younger children on the onlooker behavior measure did not differ significantly from either of the other two dyad types (see Table 4).

The significant multivariate time effect was due to the reduction in the frequency of occurrence from Time 1 to Time 2 of the transition category, $F(1, 20) = 6.38$, $p < .05$. In addition, a Dyad Status × Time interaction was obtained for both onlooker behavior, $F(2, 20) = 5.43$, $p < .05$, and conversation, $F(2, 20) = 4.03$, $p < .05$). Follow-up analyses (Newman-Keuls) revealed that the interaction effect for the onlooker behavior was a result of substantial increases over time for pairings involving nonhandicapped children but not for the mildly delayed dyads. For conversation, a lower frequency was obtained from Time 1 to Time 2 for the nonhandicapped younger dyads, with neither the nonhandicapped older or mildly delayed pairings showing any significant changes. Finally, no significant findings were obtained for the cognitive play categories. Similar to the results for both mixed-age and mixed-developmental status dyads, constructive play was dominant, occurring nearly 90% of the time.

Analyses focusing on the individual social behavior measures revealed a number of important differences across dyads. An analysis of variance carried out on the frequency of positive interactions revealed a significant effect only for dyad status, $F(2, 20) = 10.66$, $p < .001$. No significant findings were

Table 4
Peer-Related Social Interactions for Mildly Delayed, Nonhandicapped Older, and Nonhandicapped Younger Dyads

	Dyad status					
	Mildly delayed		Nonhandicapped younger		Nonhandicapped older	
Interaction	Mean	*SD*	Mean	*SD*	Mean	*SD*
Social participation[a]						
Solitary	206.38	40.71	120.57	42.99	117.50	58.77
Parallel	56.13	17.02	48.00	22.01	68.00	43.54
Group	8.50	9.38	54.57	47.76	62.38	60.30
Unoccupied	37.75	20.34	43.57	23.05	24.88	16.44
Onlooker	10.00	8.42	31.00	19.43	26.88	18.08
Transition	19.50	8.00	18.86	7.65	14.13	7.99
Conversation	8.00	10.43	27.86	9.48	38.25	24.63
Ruff & tumble	7.13	7.28	10.86	11.67	6.63	6.82
Exploratory	3.50	5.58	1.43	1.13	0.50	0.53
Adult involved	3.13	2.42	3.29	3.82	0.88	1.25
Individual social behaviors						
Attention	16.63	17.60	29.86	16.88	53.50	30.03
Resource	11.00	16.94	23.86	14.36	30.25	15.74
Lead (positive)	18.13	18.96	45.71	25.16	53.25	26.00
Lead (negative)	2.63	3.85	3.00	2.38	2.88	3.60
Model	2.13	2.64	4.00	4.16	5.50	5.68
Follows lead	6.13	9.17	24.14	14.99	29.88	15.68
Follows activity	15.00	19.86	28.43	23.09	23.75	15.58
Refuse	9.00	15.93	29.14	21.92	26.38	10.78
Imitation	2.13	2.36	5.57	3.26	7.13	7.49
Affection	0.50	1.07	9.00	14.19	2.75	3.62
Hostility	1.50	2.07	5.00	6.22	4.00	3.38
Equipment	7.25	6.39	14.00	12.52	10.50	10.81
Pride	0	0	0.29	0.49	2.13	3.48
Total interactions						
Positive	71.25	70.40	171.14	56.92	207.63	53.81
Negative	20.38	24.30	51.14	33.78	43.75	12.93

Note. Data consist of mean frequencies summed over the two time periods and are based on a randomly selected member of a dyad for each of the eight pairings (Mildly Delayed 1–Mildly Delayed 2, Nonhandicapped Older 1–Nonhandicapped Older 2, Nonhandicapped Younger 1–Nonhandicapped Younger 2).
[a] Data based on the frequency of intervals.

obtained, however, for the frequency of negative interactions. Newman-Keuls tests, $p < .05$, indicated that the mildly delayed pairing yielded significantly fewer positive interactions in comparison to either the nonhandicapped younger or the nonhandicapped older dyads (means = 71.25, 171.14, and 207.63, respectively). The nonhandicapped dyads did not differ from each other. Overall, approximately 80% of the interactions were positive.

A 3 (dyad status) × 2 (time) multivariate analysis of variance carried out on the 13 major individual social behavior categories did not reveal any significant outcomes. As indicated in Table 4, however, the mildly delayed dyads were consistently the least socially interactive, particularly for the gains attention, resource, and positive leads measures. (In fact, significant univariate effects for dyad status were obtained for gains attention, $F(2, 20) = 5.47$, $p < .05$, positive leads, $F(2, 20) = 4.91$, $p < .05$, and follows activity of others, $F(2, 20) = 6.67$, $p < .01$.) A 3 (dyad status) × 2 (time) multivariate analysis of variance carried out on the proportional distribution of individual social behaviors also was not significant for any of the variables. In contrast to the pattern of a lower frequency of interactions for the mildly delayed dyads, children tended to distribute their social interactions in a similar manner in all three pairings. The success rate also was similar for dyad status and time, $p > .05$, averaging approximately 50% for all pairings.

Finally, although seven of the major individual social behavior categories contained subcategories, one generally dominated the

coding. The subcategories coded most frequently for each were as follows: attention (begin an interaction, 73.00%); resource (seek explanation or information, 91.01%); follow lead with directions (what to do, 99.04%); follow companion's activity without directions (involved observation, 83.52%); affection (verbal, 64.57%); hostility (physical, 75.73%); and competes for equipment (takes unoffered object, 51.31%). This pattern was observed across all the different pairings.

Discussion

The results of this study indicate clearly that the developmental status of one's companion can alter important characteristics of preschool children's peer-related social interactions in dyadic settings. Perhaps the most significant findings concerned the effects of companion status for mildly developmentally delayed children. Specifically, when paired with other mildly delayed companions, only limited social interactions were observed. Although the delayed children played with toys frequently and constructively, these pairings were not productive from the perspective of child–child social interactions. In contrast, when mildly delayed children were paired with nonhandicapped older companions (children similar in CA but more advanced developmentally), the frequency and quality of their social play improved substantially. The most marked change was in the frequency of positive interactions, which nearly doubled when their companions were nonhandicapped older children. A decrease in solitary play, a strong trend toward greater involvement in group play, and an increase in the frequency of conversations also were observed.

Although many possible explanations are available to account for the positive effects on mildly delayed children's peer-related social interactions when their companion was a nonhandicapped child similar in CA, it is perhaps most likely due to the more active role taken by these nonhandicapped children in organizing and in generating social interactions in the dyads. This is supported by the fact that the analysis of dyads that focused on the individual social behaviors of the nonhandicapped older children themselves indicated that these children made a considerable effort to engage in social interactions with children from all three companion status groups. Although the nonhandicapped older children tended to be less successful when paired with mildly delayed companions, as suggested by the social participation measures, especially when group play was involved, their overall level of individual child–child social interactions remained at a consistently high level, irrespective of the companion. Moreover, because mildly delayed children generally failed to engage in those peer-related social interactions that have directive functions, a finding reported previously for delayed children in specialized group settings (Guralnick & Groom, 1985), it is not surprising that dyads consisting only of delayed children were not productive. It may also be the case that because the nonhandicapped older children were chronologically similar to the delayed children, they were perceived by the delayed children as more interesting play partners. Despite their limited social skills, the delayed children may have found the play themes more consistent with their own interests, remaining attentive to their more socially competent companions.

In contrast, when mildly delayed children were paired with a developmentally matched group of nonhandicapped but younger children and compared to pairings with other mildly delayed companions, a very different pattern emerged. Overall, the social interactions of the mildly delayed children were not altered by these different companions. Perhaps the most important result was the finding that the primary feature of these dyads was the general absence of peer-related social interactions on the part of the mildly delayed children. Analyses of dyads focusing on the nonhandicapped younger children themselves indicated that these children did attempt to engage in social interactions with all play partners but, as did the nonhandicapped older children, also tended to have difficulty establishing sustained interactions (group play) with mildly delayed companions. Yet despite these efforts, no influence on the delayed children's peer interactions was observed. It is possible that, in contrast to the nonhandicapped older children, the nonhandicapped younger group did not have sufficient skills to organize and involve mildly delayed children in productive social play. Nevertheless, sufficient play skills did exist for the nonhandicap-

ped younger children to engage in extensive social interactions when more responsive partners were involved, as observed in the pairings with other nonhandicapped younger children. In fact, in many respects the peer-related social interactions for dyads involving only nonhandicapped younger children were highly similar to those consisting of only nonhandicapped older children. Finally, it is important to consider the possibility that the nonhandicapped younger children may not have been accorded the same level of social status by the mildly delayed children or engaged in as interesting a set of play activities as did their older nonhandicapped counterparts. If this was the case, it would have contributed to the relative lack of peer interactions of the mildly delayed children when paired with nonhandicapped younger companions.

The implications of these findings for mainstreaming must be considered in the context of the contrived nature of the dyad setting and the pairing procedures. Two issues are involved. The first concerns the extent to which interaction patterns in the dyads are representative of encounters between children that might occur in group settings. As discussed earlier, self-selection factors and numerous other variables will certainly govern the frequency of encounters between children varying in terms of developmental status and even affect the circumstances under which those interactions occur and the quality of the social exchanges. Moreover, patterns of interacting in groups and in dyads can differ (e.g., Goldman, 1981). Nevertheless, many of the important social interaction patterns that bear on issues related to mainstreaming that were observed in the dyads in this investigation were also found in a component of the larger study related to group interactions (Guralnick & Groom, in press). Specifically, in the group setting, the mildly delayed children not only preferred to interact with the nonhandicapped older children when given a choice, but the quality of their social play improved considerably when those interactions took place. As noted, the pattern of improved social play occurred in the dyads as well. In addition, the fact that the nonhandicapped younger children were less preferred play partners than the nonhandicapped older group by the mildly delayed children in the group setting supports the possibility that the nonhandicapped younger children were perceived as less interesting or less competent players by the mildly delayed children.

Furthermore, one can argue that in many respects interactions in the dyad setting may represent a more unbiased reflection of the effects of a companion's developmental status than do group situations. Despite the artificial nature of pairing children with one another and the fact that some of the younger children may have been wary of participating in the more isolated dyad setting, the children were unaware that they were being observed, they were free from the constraints of group pressure and distractions from peers, and their social interactions were not subjected to the influence exerted by the presence of teachers in the room. In fact, Brody, Stoneman, and Wheatley (1984) observed that more directives and social conversation and fewer task-related verbalizations occurred in dyads composed of preschool children in the absence of observers. Overall, the presence of observers tended to suppress interactions.

We also note that although all children in the playgroups were initially unacquainted, they were interacting in the playgroups at the same time the dyads were being established. Accordingly, it is possible that playgroup experiences influenced dyad interactions. For example, because the mildly delayed children tended to prefer older nonhandicapped children as play partners in the playgroups, it is possible that this could account for the improved peer interactions in this pairing. If familiarity was a confounding factor here, however, the outcomes of this study should not have been as apparent during Time 1 when children were just becoming acquainted. This did not turn out to be the case, as differences as a function of companion status emerged early and were maintained throughout the study. In addition, despite the fact that the mildly delayed children preferred to play with the nonhandicapped older children, from the nonhandicapped older children's perspective, the mildly delayed children were the least preferred play partners of this group. Preference patterns were even less marked for the mildly delayed and nonhandicapped younger children. Although the effects of experiences in the playgroup cannot be discounted entirely, it is more likely that the interaction patterns in both the group and dyad settings were linked to the character-

istics of their companions rather than to familiarity.

The second issue concerns the potential developmental value of the dyad setting for promoting the peer-related social interactions of mildly delayed children. Clearly, interactions with nonhandicapped older companions appeared to be most productive. Compared to any other pairing, especially that with other mildly delayed children, the level of involvement in social interactions with nonhandicapped older children provided more opportunities for peer-related social development and may be the ideal social context for initiating intervention programs to improve the peer-interaction skills of mildly delayed children. This can be contrasted with the lack of social interactions that occurred when mildly delayed children were paired with a developmentally similar though younger normally developing companion. Although this latter pairing may have many egalitarian features that are of value to normally developing children who are similar in both developmental level and CA (Hartup, 1983), other factors apparently govern the quantity and quality of social interactions when one of the partners of the dyad is mildly delayed. As noted previously, given the nature of the deficits exhibited by mildly delayed children, unless some external direction is provided by companions, the peer-related social interactions involving mildly delayed children are likely to be limited. As improvements in the social skills of mildly delayed children occur, however, a developmental match may become more appropriate and productive. At even later points in the development of their peer-related social competence, systematic pairings with less developmentally advanced children may prove to be valuable for some mildly delayed children (Furman et al., 1979). Moreover, although other ethical issues must be considered, the fact that the peer interactions of the nonhandicapped children were not affected substantially when paired with the delayed children should make interventionists more comfortable with techniques involving the systematic pairing of children varying in developmental status.

Finally, it is important to note that even though nonhandicapped older children may in fact make skilled adjustments that result in more productive social interactions by mildly delayed companions, very limited information is available about the qualitative nature of those exchanges. Although interactions tend to be overwhelmingly positive, little is known about the content of the social exchanges, the style of interacting (e.g., the use of polite forms of speech or justifying and mitigating requests), or the roles assumed or assigned by the participants. Moreover, as noted, social interactions observed in the same-age and cross-age pairings of the normally developing children were highly similar. Apparently, accommodations were being made in the play themes, rules, or cognitive demands of social interactions. Little is known, however, about the content and other characteristics of these adjustments either. Fortunately, numerous techniques for the analysis of social/communicative patterns are now available to help clarify the nature of these relationships (Guralnick, 1981; Rubin & Borwick, 1984) and should be considered in future research.

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