Characteristics and Qualities of the Play Dates of Children With Down Syndrome: Emerging or True Friendships?

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Abstract

Although research on typical development suggests that friendship is a social relationship based on interactions with certain criteria, the qualities, definitions, and characteristics of friendship are not well-understood among children with atypical development. In this study, the interactions of 27 dyads of children in a play-date situation were examined; one dyad member had Down syndrome. The peers brought were more often the same gender, age, and ethnicity. Dyads who were similar in gender, CA, and classroom experiences had better quality interactions. Twenty dyads met strict friendship criteria and, thus, could be classified as friends. These friend dyads were more positive in affect, more often involved in turn-taking, and played at higher levels than did children categorized as simply playmates.

In contrast to research on friendships of typically developing children, the importance, functions, and qualities of friendship for children with atypical development are not well-documented. Friendships may or may not be the same for both types of children. For typical children, friendships with peers are important for the development of sensitivity, the exploration of identity, and the validation of the self (Sullivan, 1953). Although the theoretical constructs of friendship are established, researchers still struggle with how to identify friendships behaviorally, especially in younger children. Some investigators use direct observation of play to define friendships because very young children may be unable to verbally nominate a friend. Young children may use social pretend play with their friends to experience intimacy in contrast to older children, who can verbally self-disclose. Other functions (e.g., companionship) are also expressed differently in young children (Furman & Buhrmester, 1985; Howes, 1996). The behaviors involved in younger children's friendships may be different than those exhibited by older children, but the qualities of friendship (intimacy, companionship, and affection) are the same (Howes, 1996).

When children with atypical development, particularly children with mental retardation, are examined, none of the preceding constructs, definitions, or identification processes are as well-established as they are in the typical literature. For children with mental retardation, researchers began the exploration of friendships by examining whether friendships exist and whom these friendships are with. For example, Siperstein and Bak (1989) found that 81% of adolescents questioned mentioned someone outside of class as a friend, and almost half of the outsiders mentioned were adults, often paid tutors or friends of their parents. Unlike typical children, then, children with mental retardation generally nominated non-peers as friends.

Using observational measures, Field (1984) examined friendships in children with mental retardation in a mainstreamed setting. She found that fewer than half of 16 had friendships. Only 2 had friends who did not have disabilities.

Also using observational methods in a mainstreamed setting, Guralnick, Gottman, and Hammond (1996) defined two types of "friendships" among children with developmental disabilities. *Unilateral friendships* (i.e., friendships identified by only one dyad member) were defined when 33% of the child's total positive social interactions occurred with a specific companion. *Reciprocal friendships* were defined when a specific companion engaged in at least 33% of positive social interactions back towards the target child after an initiation. The authors found high proportions of unilateral friendships for preschoolers with developmental disabilities. They also found fewer reciprocal friendships in the group with developmental delays than in the typical group or a group of children with communication disorders. Unilateral friendships would not ordinarily be considered friendships among typically developing children.

Although the foregoing studies of atypical children's friendships in relation to class placement are important, there are some limitations. One is combining children from different disability categories in a single study. The type of disability a child has may affect friendship formation. For example, in Guralnick et al.'s (1996) study, children with communication disorders had more reciprocal friendships than did those with mental retardation. Also, children with different etiologies of mental retardation may vary on aspects of sociability that affect friendship development (Kasari & Sigman, 1996). Those with Down syndrome, for example, are perceived by others as pleasant and cheerful (Capps, Kasari, Yirmiya, & Sigman, 1993; Hornby, 1995; Kasari, Freeman, Sigman, & Mundy, 1995). Such sociable behavior and interest may facilitate more positive contact with others.

Indeed, in a study of children with Down syndrome at ages 11 and 21, Carr (1995) found that nearly two thirds had at least one friend. Over half of the 11-year-olds with friends had a friend who did not have a disability (mostly relatives and family friends). Most friends were from their day placement or school, but outside contact was unusual. Parents acknowledged that most friends of their 21-year-old adult children with Down syndrome were "acquaintances really, they're friendly, not friends" (p. 103). In terms of best friends, three quarters of the 11-year-olds said that they did not have a best friend and for those who did, it was most often a child with a disability. At age 21, most adults did not have a best friend. Thus, friendship appeared to exist, but all of these data were collected through parent report, and the construct "friend" was not specified.

Byrne, Cunningham, and Sloper (1988) found that about 60% of the 2.5- to 10-year-old children with Down syndrome in their study had at least one friend, mostly children of neighbors. Other friends included parents' friends, relatives, and friends of siblings. Friends increased with age; 66% of children under age 5 and 81% of the children over age 5 had more than one friend. Qualitatively, parents noted that the gap between the children with Down syndrome and their peers without handicaps seemed to widen with age and, in turn, friendships suffered. In terms of school-based friendships. About 58% of children with Down syndrome had one or more best friends at school, but only 17% played with those friends outside of school. Friends were established through parent report and broadly defined as any child with whom the child with Down syndrome played with regularly.

In summary, the previously mentioned studies suggest that children with atypical development, particularly those with Down syndrome, do have friends. Definitions of those friendships, however, are not consistent among studies or with the literature on typical development. Indeed, the people considered friends were often adults or other children who did not necessarily reciprocate. Furthermore, only one measure of friendship was generally employed to establish the existence of friendships.

Given the extant literature, there are three main issues addressed in the current study. First, we examined the characteristics of the peers that children with Down syndrome consider as their friends. According to several theories in typical child development (Farmer & Farmer, 1996), children choose friends who are similar to themselves in gender, age, and developmental level (Gottman & Parker, 1986; Hartup & Sancilio, 1986). Children also select play partners based on common interests, abilities, experiences, and interaction (Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). In addition, the classroom and its social structure can influence the characteristics of both peer interactions and friendships (Parker & Asher, 1988, 1990).

In terms of children with atypical development, however, it is unclear what individual child characteristics relate to the selection of peers and whether those characteristics lend themselves to

better quality interactions. There is virtually no research in mental retardation that addresses this question. Also not known are the dyadic characteristics that might contribute to better quality relationships.

The second issue addressed is whether we can classify the peers of children with Down syndrome as friends, given the most stringent criteria of friendship from typical development (stable, reciprocal, and parent-confirmed). Because children with Down syndrome are delayed in language and mental abilities, they may not be able to nominate their friends reliably; parents may not always be accurate in determining their child's friendships (Buysse, 1993); and a short or inconsistent peer relationship is unlikely to transform into a quality friendship. Thus, although studies of typical children may rely on only one or two criteria, due to the aforementioned limitations, all three criteria may be necessary to confirm the presence of friendships in children with Down syndrome.

A final issue we examine is whether we can distinguish friends from nonfriends on the basis of the quality of the dyad's interactions. Or, perhaps, the relationships of children with mental retardation should be considered as friendships that serve different purposes given chronological versus developmental age differences.

In order to examine these issues, we employed a procedure (the play date) that is more ecologically valid and suspends classroom structure. This methodology takes into account the idea that children with disabilities may have multiple contexts where friendships can begin and develop. To eliminate the confound of disability type, we examined children with a single etiology of mental retardation—Down syndrome. Thus, we identify the peers of children with Down syndrome and the individual and dyadic characteristics, examine the quality of the peer interaction, determine whether the peers brought to the play date can be considered friends, and if this was established, we examine what defines the friendship interaction.

Method

Participants

Participants were 54 children, 27 with Down syndrome and 27 who were their chosen friends. The children with Down syndrome were recruited from the local association for parents of children with Down syndrome, the local Regional Center, and local school districts. Flyers briefly describing the study were sent to parents of children with Down syndrome who were between the ages of 5 and 11 years (K to 5th grades). Parents and children were asked to participate in a study on children's social development, and in return they received developmental assessments at no cost. When parents phoned, they were asked whether their child was diagnosed with Down syndrome and the age of their child. The first 30 parents who called with a child within the age range agreed to participate. All parents confirmed the diagnosis. Each family was then asked to bring a friend to one play date/research session. The only requirement was that this identified friend must not be a sibling or other relative living in the same household as the target child. Otherwise, any child that the parent and target child considered to be a friend was permitted. However, 3 of these families brought a sibling to the play date situation. They were dropped from analyses because they did not identify or bring a friend.

The 27 children with Down syndrome had an average chronological age (CA) of slightly over 8 years (98.1 months, standard deviation [*SD*] = 16.7, range 60 months), mental age (MA) of slightly over 4 years (50.5 months, *SD* = 15.4, range 70 months), and developmental quotient of 51.6 (*SD* = 11.6, range 50 points) as measured by the Stanford-Binet Intelligence Scale: Fourth edition–Stanford Binet–IV (Thorndike, Hagen, & Sattler, 1986). The Reynell Developmental Language Scales (Reynell, 1977) were used to measure language; the children had an average receptive and expressive language age of about 4 years, or 48.1 months (*SD* = 19.2, range 65 months) and 48.3 months (*SD* = 20.7, range 70 months), respectively. There were 10 males (37%) and 17 females (63%).

The mean CA of the 27 children brought by the children with Down syndrome was about 7.5 years (91.2 months, *SD* = 22.1, range = 78 months). There were 9 boys and 18 girls; 19 European American children, 1 African American child, 5 Latin/Latin American children, and 2 Asian American children; 6 children had Down syndrome. The children brought to the play date who also had Down syndrome were slightly over 8 years of age (100.4 months, *SD* = 18.8) with an MA of 49.8 (*SD* = 9.2) and a mean IQ of 50.6 (*SD* = 2.7). The gender breakdown of all 27 dyads was as follows: 13 female/female dyads, 5 male/male dyads, and 9 mixed dyads (5 where the target child was a male; 4, a female).

Procedure

The research room used for the procedure was completely empty, except for tables, chairs, and two chalkboards. Parents were able to observe the entire procedure through a one-way mirror located within the room. When the parent, target child, and identified friend arrived at the research room, the children were escorted to a play area while the parent/s remained in the adjoining room.

Two play situations, one limited and the other expanded, were used to examine and describe friendships of the children with Down syndrome. The limited play situation consisted of a 1.0 m $\times$1.5 m mat showing a roadway and a town setting with associated manipulatives (e.g., cars, people, airplanes). The mat set could be used in a variety of ways but was the only toy present. In the expanded play situation, there were a variety of toys that could be manipulated by two people but did not *require* two people (i.e., play dough, markers and paper, dolls, cars, and puzzles). Both situations were videotaped for 20 minutes, and the expanded situation always followed the limited situation. Two different situations were used to examine whether the children's quality and level of play was associated with the inherent structure of the activity.

The children were instructed to play with the toys in any manner they liked. The children were informed that a researcher would be in the room to videotape but would be completing paperwork. They were permitted to play as they liked with redirection by the researcher only if there were safety concerns.

After the dyadic play sessions, children were separated and the revised Stanford-Binet–IV and the Reynell Developmental Language Scales were used to assess the target child. The Stanford-Binet provides a standardized measure of the child's MA and IQ. The Reynell directly assesses language skills and generates language age equivalent scores for both receptive and expressive language skills. If the accompanying friend also had a disability, the Stanford-Binet and Reynell Developmental Language Scales were given to the friend. In addition, a simple friendship questionnaire was administered orally to both children, independently of one another.

During this time, the parent(s) completed a demographic information form. Also, another researcher conducted a semi-structured interview asking parents about (a) the history of the dyad's friendship and (b) their child's other peer relationships. These measures are described later.

Measures

Friendship questions. Both the target child and his or her friend were independently asked to verbally nominate their best friends and friends. If the child with Down syndrome did not or was unable to name any child as a friend (either as a best friend or just a friend), they were asked whether or not the accompanying child was their friend. Thus, because children with Down syndrome often have language delays, the question was modified to a yes/no format. If a typical child did not identify the child with Down syndrome who brought them, they were also asked in a yes/no format whether or not the accompanying child was their friend. No typical child named the child with Down syndrome after the prompt when they did not name them before the prompt. These questions were read aloud, and both the videotape and the researchers recorded the children's responses.

The parents were also asked to nominate their child's best friends and friends. With specific reference to the child brought for the play date, parents were asked how long their child had been friends with him or her. Parents were also asked how frequently they played together and how they became friends (i.e., how they met).

Quality of play. The Dyadic Relationships Q-Set (Park & Waters, 1989) was used to rate the dyad's quality of play. The total 40 minutes of limited and expanded videotaped play was rated. The Q-Set consists of a set of items, with each item on a card, designed to describe behaviors of dyads of children. The deck of cards can be used to describe the interactions of typically developing 3- to 10-year-old children. The Q-Set has been shown to discriminate between the interactions of friends and nonfriends (Hartup, 1983; Howes, 1988).

The items are sorted into a fixed distribution. The 55 items are sorted into 7 piles arranged in a 5-7-9-13-9-7-5 distribution. The 7-pile forced-choice format ranges from behavior *least characteristic* (Pile 1) to *most characteristic* (Pile 7) for each dyad, and the middle category is reserved for items not characteristic of the dyad.

Undergraduate psychology students blind to the our study hypotheses were recruited and trained on the Dyadic Relationships Q-Set. Each undergraduate established adequate reliability

(percentage agreement at least 70%) using a correlation of the observers' scores (Park & Waters, 1989). For this analysis, the sorters were the variables and the items were the cases. To determine agreement, we computed a correlation of the scores of the two observers across all items, and the mean correlation coefficient for 23% of the sample was .82 (range = .76 to .89). Each dyad used for reliability was coded by at least two observers.

The 55 items were grouped to form the following seven clusters: positive social orientation, cohesiveness, harmony, control, responsiveness, coordinated play, and self-disclosure. On the Dyadic Relationships Q-Set, a dyad received a score from each observer for each item, depending on the pile in which the item was placed. For example, if an item was placed in Pile 5, the score assigned was "5." Each cluster was measured by four to eight individual items in the Dyadic Relationships Q-Set. Scale scores for the eight relationship variables were created by summing a dyad's score across all the items in the cluster. Therefore, each dyad had one score for each cluster.

Play. In working with very young preverbal children, Parker and Gottman (1989) determined that social pretend play was a means to measure intimacy. Other researchers (Howes, Matheson, & Wu, 1992) have also argued that younger children with less-developed cognitive and language skills explore trust and intimacy through social pretend play. Because younger children are unable to use high level conversation to communicate their fears and intimate feelings to one another, they use fantasy play instead. In addition, a child must be initiating, flexible, and responsive to the others in order to develop complex play or the play will end. Importantly, children with Down syndrome can engage in constructive and imaginative play (Beeghly, Weiss-Perry, & Cicchetti, 1990) and can use play as a means to express intimacy as well. Thus, it is important to examine the ability of the child with Down syndrome to initiate and respond to play and their levels of play with friends as they relate to intimacy and trust in that friendship.

Children's dyadic play behavior was coded during the full 40 minutes of limited and expanded play. Using the categories of play from Howes and Matheson (1992), we marked any sustained play between partners for frequency and duration. The five scale points taken from Howes and Matheson (p. 964) were used to code episodes of play. *Solitary play* occurs when the target child and the peer are playing beyond 1.0 m from each other and do not acknowledge each other. *Parallel play* occurs when the target child and the peer are within 1.0 m of each other and engage in the same activity but do not acknowledge each other. *Parallel aware play* is parallel play with eye contact. *Simple social play* occurs when the children engage in the same or similar activity and talk, smile, offer, and receive toys or otherwise engage in social interaction. *Complementary and social pretend play* occurs when the children demonstrate action-based role reversals in social games and/or when the target child and another child enact complementary roles within social pretend play. The roles do not have to be explicitly named but must be clear from the actions of the children. A more complex level of social pretend play can occur when children metacommunicate about the play. This includes naming roles, providing scripts, and prompting the peer.

Within each of the preceding episodes of play that lasted longer than 5 seconds, peer-directed behaviors were coded. Nonconsummated initiations and consummated initiations were coded. *Nonconsummated initiations* were coded as any attempt by the target child to initiate an episode of play with the peer that does not result in play. For example, a child pushes a car towards the other child to initiate simple social play or a child verbally or physically requests play with the other child. The initiations could be positive (as in the preceding example) or negative (e.g., a child throws a toy towards the other). The response can also be positive (child pushes car back) or negative (child ignores), but then no further action or play results. *Consummated play* was coded at a minimum as a three-exchange procedure: one child initiates, the other responds positively (a negative response generally ends the procedure), and the initiator then responds again and the children engage in play.

Affect was coded as either positive (smiling, laughing), negative (frowning, crying, and tantrums), or neutral. *Affect,* in this study, related to companionship as it is defined by "having fun" (Furman & Buhrmester, 1985). Thus, children who were expressing more positive affect in the play situation appeared to be having fun with one another.

Interrater reliability was calculated on 15% of the sample using generalizability coefficients between two raters on frequency and duration of

play levels, initiations and responses within the level of play, and affect. Generalizability coefficients utilize analyses of variance (ANOVAs) procedures to estimate reliability (Algina, 1978). This method has the advantage of evaluating both the consistency across a variable for each rater and the variance across subjects for the variables in the analyses. It is recommended for studies with behavioral observation data that are continuous in nature (Frick & Semmel, 1978; Mitchell, 1979). The G-coefficient is considered superior to other reliability indices for continuous data sets because it simultaneously considers multiple sources of error variance (Berk, 1979). Coefficients approach 1.0 when the variance associated with subjects is large and the variance associated with raters is small. Coefficients above .50 indicate adequate reliability (Mitchell, 1979).

For play levels, the average G-coefficient was .96. The breakdown by level was as follows: solitary = .99, parallel = .85, parallel aware = .99, simple social = .99, and complementary/social pretend = .97. For the frequencies of consummated and nonconsummated initiations within play, G-coefficient ranged from .97 to 1.00, with an average of .99. For affect, the average G-coefficient was .96, with a range from .89 to 1.00. Such coefficients are typical of good reliability (Kasari & Sigman, 1997; Landry, Miller-Loncar, & Swank, 1998).

Results

Who are the Peers Brought to the Play Date Situation by the Children With Down Syndrome?

As shown in Table 1, children with Down syndrome generally brought typically developing children, children of the same gender, and children from different classrooms. In addition, the children with Down syndrome more frequently brought a child matched within one year chronologically but not mentally and of the same ethnicity. About half of these children were introduced by their parents, and half met through school or communities. The mean length of the dyadic relationship was 51.44 months (SD = 33.56), or just over 4 years. Dyads containing children of the same ethnicity had significantly longer reported relationships than dyads not of the same ethnicity (mean length of relationship = 64.9 months vs. 28.6 months), $t(25) = 3.14$, $p < .01$. Also, children who were introduced by their parents had significantly longer reported relationships than did dyads who met through the school or community (mean length of relationship = 74.5 months vs. 30 months), $t(25) = 4.56$, $p < .001$.

Do Children Who Bring Peers More Similar to Themselves Have Better Quality Playmate Interactions?

To examine the play interaction, we combined the two different play situations (limited and expanded) as a result of two preliminary findings. First, no significant differences were found on the target variables by type of play situation in any multivariate analyses. Second, there was no consistent deterioration time between play situations or at the end of the 40 minutes across the

Table 1. Peers Brought by the Children With Down Syndrome

Variable	*n*	%
Presence of a disability in the peer		
Typical development	21	78
Down syndrome	6	22
Gender		
Same	18	67
Opposite	9	33
CA-match within 1 year		
Matched	17	63
Not matched	10	37
MA match within 1 year		
Matched	10	37
Not matched	17	63
Ethnicity		
Same ethnicity		
Different ethnicity		
Classroom	17	63
Child from the same classroom	10	37
Child from a different classroom	8	30
Method of meeting	19	70
Parent introduced/initiated		
Through school/community/child initiated	13	48
	14	52

sample. Taken together then, the children's play was not affected by the different toy situations.

All of the descriptive dyad characteristics from Table 1 (both members have a disability, have the same gender, have CAs within one year, have MAs within one year, have the same ethnicity, come from the same classroom, and were child introduced) were examined to determine whether dyads with certain similarities scored higher on quality of play (Q-Set), level of play (Peer Play Scale), and consummated and nonconsummated initiations. The following sections describe the results based upon the matching characteristics.

Gender. In terms of quality of play, no significant differences were found between children who had same-sex peers versus children who had opposite-sex peers. However, in the dyad's level of play, significant differences emerged. To examine this relationship between similarities of dyad members and levels of play, we conducted a 2 (group) $\times$5 (play level) repeated measures ANOVA for opposite-gender ($n = 9$) versus same-gender dyads ($n = 18$). Results yielded a significant main effect for play level and a significant interaction of play level and gender. Dyads who were of the same gender spent significantly more time in simple social play (44% vs. 29%) and complementary/social pretend play (2% vs. 0%) than did dyads who were not of the same gender, $F(4, 22) = 3.41$, $p < .05$. Dyads who were not of the same gender were spending more time in parallel aware (57% vs. 43%) and parallel play (9% vs. 1%). The interaction effect is depicted in Figure 1, which shows the proportion of play spent in the lower three levels of play combined (solitary, parallel, and parallel aware) compared to the higher levels of play (simple social and complementary/social pretend). In general, dyads who were of the same gender spent significantly more time in the higher levels of play (48%) than did those who were not of the same gender (20%), $t(25) = -2.42$, $p < .05$.

In addition, significant differences were found when nonconsummated interactions were examined. A regression analysis was conducted on positive initiations where the response ended the interaction (nonconsummated). The model was significant for dyad members of opposite gender, $F(1, 24) = -3.29$, $p < .01$. Thus, these dyads had significantly more initiations where the response ended the interaction, even though the initiation was positive (31% of the variance accounted for). Overall, children in opposite-sex dyads had significantly more nonconsummated interactions ($M = 11.22$) than did children in same-sex dyads ($M = 6.94$) where there was an initiation and then a response that ended the interaction, $t(25) = 2.22$, $p < .05$. Thus, opposite-sex dyads were initiating positively, but the bids did not lead to extended or higher levels of play.

CA/developmental level. In terms of the quality of the relationship, *t*-test analyses on dyads matched or not matched on CA revealed that dyads matched on CA received significantly higher scores on the responsiveness cluster than did dyads not matched on CA, $t(25) = 2.26$, $p < .05$. In addition, dyads who were matched in CA, $t(25) = -2.99$, $p < .01$, were involved in more consummated play interactions (Ms = 2.8 and 1.0, respectively) that led to higher levels of play (child initiates, friend responds, play results). No differences on the level of play were found related to similarities between dyad members on MA or IQ.

Do Individual Characteristics of Each Dyad Member Relate to Better Playmate Interactions?

Child with Down syndrome. The quality of the interaction (Q-Set) was examined in relation to each child's personal characteristics. Table 2 shows the correlations between the child with Down syndrome's characteristics and each of the seven qualitative clusters from the Q-Set. Higher scores on the positive clusters (cohesiveness, coordinated play, harmony, positive social orientation, and responsiveness) were significantly related to higher developmental scores of children with Down syndrome. Lower scores on the negative cluster (control) were significantly related to lower

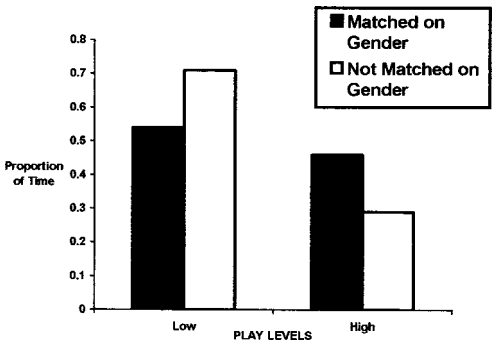

Figure 1. Level of play for the child with Down syndrome in dyads matched on gender and dyads not matched on gender.

Table 2. Relationship Between Q-Set Scores and the Child With Down Syndrome's Developmental Characteristics

	Q-Set clusters						
	Positive						
Developmental characteristic	Cohesiveness	Coordinated play	Harmony	Positive social orientation	Responsiveness	Self-disclosure	Negative Control
CA							
MA	.24	.39*	.08	.19	.36†	−.31	−.23
Developmental quotient	.45*	.60***	.24	.33†	.44*	−.09	−.35†
Receptive language	.29	.51**	.39*	.35†	.45*	.13	−.45*
Expressive language	.17	.47*	.22	.23	.40*	−.22	−.39*
General education	.23	.43*	.27	.27	.50**	−.18	−.40*
	−.33†	−.53**	.08	−.19	−.15	.13	.02

†$p = .10$. *$p = .05$. **$p = .01$. ***$p = .001$.

developmental scores of children with Down syndrome. Self-disclosure rarely occurred, and there was no association to developmental characteristics.

To determine the association between the child with Down syndrome's individual developmental characteristics and level of play (Peer Play Scale), we conducted Pearson product-moment correlations. Due to slight variations in the amount of time that dyads played together during the 40-minute play session, the total time in each level of play was converted to a proportion score. Significant correlations with the child's characteristics emerged for the highest level of play, complementary/social pretend. More time in complementary/social pretend play was positively related to the child with Down syndrome's MA, $r = .61$, $p = .001$, developmental quotient, $r = .53$, $p < .01$, expressive language age, $r = .45$, $p < .05$, and receptive language age, $r = .50$, $p < .01$.

The total duration of positive affect within the five levels of play was examined in relation to the child with Down syndrome's developmental characteristics. Pearson-product moment correlations revealed that more positive affect within complementary/social pretend play was associated with higher developmental quotients, $r = .53$, $p < .01$, higher MAs, $r = .61$, $p = .001$, higher receptive language ages, $r = .50$, $p < .01$, and higher expressive language ages, $r = .45$, $p < .05$, in the child with Down syndrome. Pearson product-moment correlations were carried out for consummated and nonconsummated initiations and the children with Down syndrome's developmental characteristics. Nonconsummated initiations were significantly associated with lower developmental quotient scores, $r = -.44$, $p < .05$, and lower expressive language scores, $r = -.45$, $p < .05$, in the child with Down syndrome.

Classroom placement. The child with Down syndrome's current classroom placement was examined in terms of quality of play, level of play, affect, and initiations. Children with Down syndrome in general education were rated as less cohesive, $r = -.33$, $p < .10$, and less coordinated, $r = -.53$, $p < .01$, in their quality of play than were children in special education. To ensure that children in general education were not characteristically different from children in special education, we conducted two group t tests (general education vs. special education) on demographic variables and developmental characteristics. No significant differences were found. In addition, a 2 (classroom placement) × 5 (levels of play) ANOVA was conducted, yielding a main effect for play level, $F(4, 22) = 32.51$, $p < .001$, and an interaction effect of placement and play level, $F(4, 22) = 3.41$, $p < .05$. Children who were in general education spent more time in lower levels of play whereas those in special education spent more time in the higher level of play—simple social play. Neither group spent much time in complementary/social pretend play (Figure 2).

Nonconsummated and consummated inter-

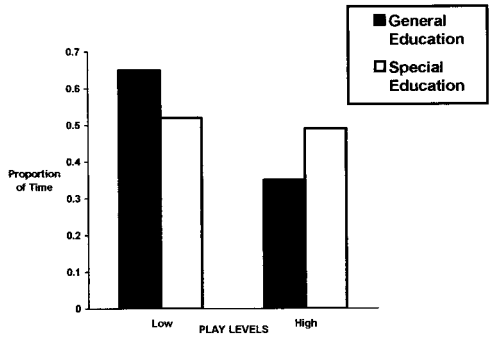

Figure 2. Play level by classroom placement.

actions were examined in relation to dyad characteristics. When both friends came from the same classroom, $t(25) = -3.37$, $p < .01$, they were involved in more consummated play interactions that led to higher levels of play than were friends from different classrooms (Ms = 3.6 and 1.5, respectively). The regression analysis model was significant for children from the same class, $F(1, 25) = 11.35$, $p < .01$, with 31% of the variance accounted for. Interestingly, when the special education group and the general education group were split and the same analysis was run, the differences within the special education group were significant, $t(9) = -4.76$, $p < .001$. Children in special education who were from the same class had significantly more consummated play interactions that led to higher levels of play than did children in special education from different classes (Ms = 4.67 and 1.25, respectively). In the general education group, the trend was in the same direction, but the differences were not significant.

Peer characteristics. The Q-Set clusters were also examined with the three available characteristics of the peer brought: age, gender, and presence of a disability (Table 3). When the peer was older, dyads were rated higher on cohesiveness, coordinated play, responsiveness, positive social orientation, and lower on control. In addition, if the peer was female, dyads were rated higher on harmony, positive social orientation, and responsiveness. If the peer was male, dyads were rated higher on control. None of the clusters were related to the presence of a disability in the invited peer.

In terms of level of play, the examination of the peer's individual characteristics yielded significant findings for both age and gender, whereas presence of a disability in the invited peer approached significance. Dyads with an older peer spent more time in simple social play, $r = .48$, $p < .05$, whereas those with a younger peer spent more time in parallel play, $r = -.42$, $p < .05$, and parallel aware play, $r = -.41$, $p = .05$. Dyads with a male peer spent more time in lower levels of play—parallel and parallel aware, rs = .43 and .42, respectively, ps $< .05$. Correlation analyses for presence of disability revealed that children with Down syndrome who had a friend with Down syndrome spent more time in complementary/social pretend play—the highest level of play, $r = .32$, $p < .10$.

Pearson product-moment correlations were carried out for consummated and nonconsummated initiations and the peers' characteristics (age, gender, and presence of a disability). In terms of consummated initiations, dyads where the peer was a female engaged in more turn-taking, which resulted in a higher level of play, $r = .47$, $p < .05$.

Can We Classify the Children Brought by the Children With Down Syndrome As Friends?

To determine friend status, we examined the 27 dyads according to three criteria used with typical samples (Dunn, 1993; Furman & Buhrmester, 1985; Howes, 1983; Parker & Gottman, 1989): length of friendship (stability), parent nomination, and reciprocal nomination.

All 27 children with Down syndrome agreed that the child they brought was their friend. However, in 6 cases the peer they brought denied the friendship, in spite of the fact that the parent and the child with Down syndrome nominated the peer as a friend and that the dyad had known each other for over 6 months. In the remaining 21 cases, all participants agreed that the children were friends; however, in one case the dyad had been friends only a brief period of time, thus failing to meet the stability criterion. Twenty dyads, then, met all three criteria (parent nomination, reciprocal nomination, and stability). Of the 20 meeting the three criteria, 14 dyads met the reciprocal nomination criteria after a prompt (e.g., when the child with Down syndrome did not name anyone, they were asked, "What about __?" (the friend's name was used). Even though the question was modified to fit these children who had language delays, the dyads were still considered to have reciprocally nominated one another (especially given that the friend and the parent had nominated the Down syndrome child). Thus, it appears that most participants brought a peer that the child

Table 3. Relationship Between Q-Set Scores and the Friends' Individual Characteristics

	Q-Set clusters						
	Positive						Negative
Developmental characteristic	Cohesiveness	Coordinated play	Harmony	Positive social orientation	Responsiveness	Self-disclosure	Control
CA							
Gender[a]	.39*	.39*	.32†	.40*	.50**	−.37†	−.40*
Presence of a disability[b]	.30	.29	.51**	.49**	.56**	−.22	−.38*
	.04	.12	−.11	−.20	.06	−.08	.09

[a]0 = boy, 1 = girl. [b]0 = no, 1 = yes.
†p = .10. *p = .05. **p = .01.

with Down syndrome thought was a friend. Prompted and nonprompted subjects, then, were combined into a single group of friends (n = 20, 74%). Dyads meeting only one or two criteria were combined into a single group of playmates (n = 7, 26%).

Analyses were conducted to ensure that extraneous characteristics did not influence any further analyses. The friend and playmate groups did not differ on any family background characteristics as reported on the demographic form (e.g., who responded to the questionnaire, age or birth order of child, marital status, child care arrangements, mother's age, mother's education level, age of first intervention experience, and total hours per week in extracurricular activities). Thus, these variables did not contribute to being categorized "friend" or "playmate."

Nomination of all friends. The mean number of best friend and friend nominations was also examined as reported by the parents and the children with Down syndrome. Parents and children were asked, "Who are ___ (your child's) best friends?" and "Who are ___ (your child's) friends." These friend nominations were in addition to the friend the children brought. Parents of children with Down syndrome nominated more best friends than did the children with Down syndrome themselves, an average of 1.19 (SD = .62) versus .78 (SD = .75) and more friends, average of 1.26 (SD = 1.13) versus .11 (SD = .58). Thus, some children with Down syndrome identified only one additional friend, and some were unable to identify a friend at all. The parents and their child with Down syndrome nominated the same friends (beyond the one the child brought) only about 30% of the time.

What Characterizes the Interactions of Friend Dyads Versus Playmate Dyads?

Friend dyads were compared to playmate dyads with respect to the child with Down syndrome's individual characteristics and the dyad characteristics. Friendship status (friends vs. playmates) was not related to any individual characteristic of the children, including CA, MA, developmental quotient, expressive and receptive language, and contact with typical peers. However, dyads from the same classroom were more often ranked as friends (30%) as compared to dyads from different classrooms (0%), $\chi^2(1, N = 27) = 3.98$, $p < .05$. Very few dyads showed the highest level of complementary/social pretend play. The 4 that did were identified as friends.

Because of the low amount of time in both the lowest and the highest levels of play, independent sample t tests were carried out on the two combined highest levels of play (simple social and complementary/social pretend) and the three combined lower levels (solitary, parallel, and parallel aware). Dyads that were ranked as friends spent significantly more time in higher levels of play (47% vs. 24%) than did those that were ranked as playmates, $t(25) = -2.07$, $p < .05$.

In examining friend versus playmate dyads, positive affect within simple social play was significantly related to being ranked as friends, r = .38, $p < .05$. When positive affect was collapsed across all five play levels and examined according to friends versus playmates, friends (.36) were sig-

nificantly more positive than playmates (.17) overall, $t(25) = 2.37$, $p < .05$. In terms of consummated and nonconsummated initiations, peers in the playmate dyads were significantly more likely to engage in nonconsummated initiations (e.g., ignore the initiations of the child with Down syndrome) than did peers in the friend dyads, $t(25) = 2.34$, $p < .05$.

Discussion

Friendships are assumed to be important for all children, including those who are delayed in their development (Freeman & Kasari, 1998; Stainback & Stainback, 1987; Strully & Strully, 1985). Until now, however, studies of friendships in children with atypical development have been focused more on whether children have friends, not whether they have quality friendships (Buysse, 1993; Field, 1984; Gottlieb & Leyser, 1981; Gottlieb, Semmel, & Veldman, 1978; MacAndrew & Edgerton, 1966; Siperstein & Bak, 1989; Zetlin & Murtaugh, 1988). In the first major question in this study, we addressed whom the children with Down syndrome played with (their characteristics) and whether certain characteristics of the individual children or the dyad related to better quality interactions. The second question addressed whether we could categorize the playmate dyads as friend dyads based upon stringent reporting criteria. The final question addressed whether the friend dyads had better quality interactions (based on observational judgments) than did playmates.

Like typical children, children with Down syndrome chose playmates who were, in many respects, just like themselves. Their playmates were more frequently the same gender, ethnicity, and age. Such findings suggest some universality in playmate selection across varying levels, ages, and types of children. However, there were also differences. Unlike typical children's friends, the playmates of the children with Down syndrome were not closely matched to them in developmental level (differing by more than 1 year), and they were not often from their same class at school. The majority of the playmates of children with Down syndrome were typical children; fewer than a quarter of the children brought children who also had a disability. Such differences in the playmate's abilities raise questions as to the long-term stability of such relationships. Given the increasing discrepancies between age and ability for children with Down syndrome, it is unclear whether they would continue relationships with same-age, typically developing children when they become adolescents. Future researchers should examine long-term stability in children's relationships when one member of the dyad has a developmental disability.

Children with Down syndrome who brought children of the same gender as themselves played at higher levels and had less nonconsummated play. Having a playmate who was female was related to higher scores on the positive qualitative clusters and more turn-taking, whereas having a playmate who was male related to higher scores on the control cluster. When the playmate was a male, the dyad spent more time in the lower levels of play. These findings are similar to those for typical children's relationships. In studies of typical children, investigators have found that girls tend to be more intimate and exclusive (Berndt, 1981, 1982) and more agreeable and acknowledging in their speech (Maltz & Borker, 1983). Boys, on the other hand, tend to be more controlling, often issuing more orders (Sachs, 1987).

Playmates matched on CA were more responsive and involved in more consummated play interactions. Higher developmental scores of children with Down syndrome were related to positive scores on the Q-Set, more positive affect, and more time in complementary/social pretend play. Further, when the playmate was older, dyads were rated higher on positive Q-Set clusters, and the dyad spent more time in higher levels of play.

The classroom experience of the child with Down syndrome was also a contributing factor to better interactions. Children with Down syndrome who were educated in special education classes were playing better with their peers (same classroom or not, peer was disabled or not) than were children with Down syndrome in general education classes. In addition, children from similar classrooms were generally involved in more consummated initiations, but it was especially apparent in the dyads where both members came from special education classes.

Thus, gender, CA, and classroom experience all seem important to quality playmate interactions. Whether the children share a disability seems less important because children with Down syndrome have playmates with and without disabilities. The findings from this research then, suggest that certain individual and dyadic child characteristics may lend themselves to better in-

teractions in school-age children with Down syndrome.

The current study also raises another issue. On the basis of widely accepted criteria for defining friendships in typical children, could the children brought to the play date be classified as "friends" of the children with Down syndrome? Indeed, two thirds of Down syndrome children could be classified as having brought a friend. Thus, for the majority of Down syndrome children, all three reporting criteria for defining friend dyads were met: children reciprocally nominated each other, parents also nominated the friend, and friendships were stable for at least 6 months. One third of the children with Down syndrome, however, failed to meet the stringent criteria of all three reporting methods, in spite of bringing someone they and their parents considered a "friend" to a play-date situation.

For almost a third of the sample, then, the failure to meet all three criteria was due to the lack of reciprocal nomination. Even though the child and parent identified the peer as a friend, the peer him or herself did not identify the child with Down syndrome as a friend. Given that perhaps the most important criterion (reciprocal nomination) was not met, one might question the reliability of parent report and the child with Down syndrome's report.

Nonetheless, all of the children with Down syndrome claimed to have brought friends to the play date. Although both the parents and children took part in choosing the peer, the parents may actually have directly or indirectly influenced the decision more than the child did. Even if they had some influence, this pattern is likely a reflection of what children experience when they have play dates at home, after school, or on weekends. The experimental situation used in this study was our attempt to simulate the naturalistic play-date situation by controlling for availability of toys and to not limit the child to school-based friends. The parents and the children arranged for peers to come to the laboratory just as they arranged for a home play date. Although this appears to be what happened, school friends may be even more similar to the child with Down syndrome. An extension of this study could be to examine interactions, through observation, between nominated friends in school play settings.

In this study, the traditional nomination criteria discussed were supplemented by observational data to examine the qualities of friendship. Importantly, observational data were collected from play dates rather than from class or school observations. Using the observational measures, we found a number of noteworthy results. Friends differed from playmates in their levels of play, amount of affect, and consummated initiations. Friends played at higher levels, displayed more positive affect, and responded to one another.

One exception—the observational measure of the quality of the dyadic relationship (Q-Set)—did not differentiate friends from playmates. These results contradict findings in the typical literature where the Q-Set has successfully distinguished friends and playmates on the quality of their relationship. Indeed, Park, Lay, and Ramsay (1993) used the Q-Set measure on typical children at an average age of 46.7 months, the same developmental age of the children with Down syndrome in the current study (50.2 months). The problem, then, may relate to the use of this measure with a developmentally delayed sample. The coding of the particular qualitative variables (i.e., verbal self-disclosure) may be more sensitive to developmental level than to quality of behaviors in children with developmental problems. Indeed, higher quality interactions were related to higher MA, language age, and developmental quotient in children with Down syndrome.

Given the strength of the developmental findings, it appears that the quality of the dyad's play interaction was influenced by the individual's characteristics and the blend of the dyad's characteristics (e.g., two children matched on gender). However, the constructs within the play measure also defined friendships of children with Down syndrome in that through play, affect, and initiations, the qualities of the friendship are apparent. The deficiency of the qualitative measure may be that it was meant for children with typical development, and the behavioral statements used to sort the cards were not appropriate. Indeed, certain variables from the Q-Set approached significance but were not defined specifically enough to tap into less obvious behaviors that might differentiate groups (e.g., although coordinated play was higher for friends vs. playmates, it was not significant). In addition, other variables were completely inappropriate; there was virtually no variation in scores on the self-disclosure variable because it was primarily a measure of verbal behaviors.

The implications of this interpretation are

critical. First, it may be that different behaviors and qualities actually describe the friendships of children with Down syndrome, qualities that the Q-sort was unable to distinguish. It was clear that the 20 children with Down syndrome, their parents, friends, and the researchers believed that friendships existed between the children. However, based upon observation, the importance and functions of that friendship were not quite the same as for typical children's friendships, which may imply that this type of friendship is actually a precursor friendship relationship for elementary-school-age children with Down syndrome in the development of "true" friendships. Thus, these "emerging friendships" would fall developmentally right after "unilateral" friendships and right before "true" friendships that contain all the qualities and purposes that have been established in the literature on typical development. It may be that when one child has Down syndrome, friends play better together than playmates, with higher levels of play, more positive affect, and positive initiations; however, as they experience this together, they grow and learn to have deeper concern for one another, stick together, and possibly use more language to share their thoughts; and, if not, the friendship fades. Children with typical development may also go through this type of an emerging friendship but much earlier and at a much faster rate. One of the contributions of this study is the potential illumination of the process of friendship development for all children. Future researchers may want to take a closer look at early emerging friendship in both typical and atypical children.

In conclusion, these results suggest a number of research and practice-related implications. In terms of research on friendships of children with Down syndrome, the constructs may be defined by slightly different behavioral indices given the qualitative measure (Q-Set). Alternative measures may be needed to further explore friendship constructs of children with Down syndrome. Researchers who study typically developing children may want to examine friendships that are in their beginning stages (children who have been friends a shorter period of time).

Practitioners may want to especially consider friendship development when determining placement for children in certain educational contexts. Although the majority of parents and professionals seem to believe that inclusive classrooms facilitate friendship development (Freeman, Alkin, & Kasari, 1999; Guralnick, Connor, & Hammond, 1995), our data show some strengths for children in specialized classrooms. In addition, the data also suggest that other factors may be important. For example, many of these children brought children who were similar to themselves in terms of gender and ethnicity. Children who had friendships of longer duration had parents who were in contact with one another. Children from the same classroom (regardless of special education or general education) were more often ranked as friends.

In addition, a child's friendship may be important for practitioners to consider as they actually place or change the placement of a child with Down syndrome. Howes (1988) noted that children were rated by teachers as more sociable and more complex in play when day care transitions were made with friends. Indeed, many school teachers help choose a child's subsequent classroom with the child's friends in mind. Friends, then, may serve as important emotional supports for children with Down syndrome as well.

In summary, the results suggest that certain characteristics (e.g., gender, CA, classroom experience) relate to better quality playmate interactions in children with Down syndrome. In addition, most peers that children with Down syndrome consider friends are truly stable, reciprocally nominated, and parent-validated friendships. The friend dyads interact with higher levels of play, greater positive affect, and are responsive to initiations similar to dyads of children with typical development. Some aspects of quality appear more related to the developmental characteristics of the child with Down syndrome. These findings suggest both similarity and difference in the friendship relationships of children with Down syndrome compared to typical children.

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