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Abstract

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Keywords

liking, school, settings, enjoyment, shared, interactions, closest, relationships, between, children, developmental, disabilities, peers, mutual, inclusive

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Mutual Liking, Enjoyment, and Shared Interactions in the Closest Relationships between
Children with Developmental Disabilities and Peers in Inclusive School Settings

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Abstract

Typically analysis of the characteristics of friendships is made on the basis of nomination of a friend or best friend, with the assumption that this nomination reflects actual friendship. While it is possible that this assumption may be valid in typically developing children, this may not be the case for relationships for students with developmental disabilities. The relationships of 16 students with developmental disabilities in grades 1 through 6 and their three closest peers were examined to determine if dyads engaged in behaviors associated with defining components of friendship (i.e. shared interaction, mutual enjoyment, mutual liking) from literature on typically developing children. Interviews were conducted with target students, as well as with their peers, parents and teachers. Interview data indicated that the majority of dyads engaged at least sometimes in behaviors related to each of the defining components of friendship and reported behaviors associated with these components were typically reported as mutual. Additionally, voluntary peer nomination of friends at the beginning of interviews corresponded well with the presence of characteristics of friendship but this was less so when peers needed to be asked directly whether a child with a disability was a friend.

Keywords: friendships, children, developmental disabilities, peers, inclusive schools

Mutual Liking, Enjoyment, and Shared Interactions in the Closest Relationships between
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Researchers generally emphasize that the most important of all peer social relationships is friendship (e.g., Bukowski, Newcomb, & Hartup, 1996; Newcomb & Bagwell, 1996). Friendship has been conceptualized as a bond between two individuals that is characterized by shared interaction, mutual enjoyment, and mutual liking, and is stable across time (Howes, 1983). Friendship is inherently voluntary (Ladd, 1988) and is by definition a reciprocal construct (Furman, 1984) that will cease to exist if either party withdraws (Asher, Parker, & Walker, 1996). Thus, the dimensions of friendship reflect a combination of the expectations and skills of both partners (Asher et al., 1996).

A substantial amount of research has been conducted to investigate and conceptually model the aspects of friendship among typically developing children (e.g., Bukowski, Hoza, & Boivin, 1994; Parker & Asher, 1993). Researchers working within developmental theoretical frameworks have found that children develop different priorities for friendship as they mature, with intimacy becoming much more important in adolescence than in early childhood where shared activities are the focus of most friendships (e.g., Ladd, 1988; Newcomb & Bagwell, 1996). Freeman and Kasari (1998) reported that companionship, stability, and emotional support are more often used in definitions of friendship than affection and intimacy.

Although different stages and aspects of friendship have been well documented in studies of typically developing children, less research has been conducted in which this knowledge and definitions have been applied to examine the friendships of children with developmental disabilities and typically developing peers. Much research has focused on establishing the presence of friendships between children with disabilities and peers in different settings. Many of

these studies have reported on friendships, but have actually utilized sociometric analysis to measure the peer status or acceptance of children with disabilities in inclusive settings (e.g., DiGenaro Reed, McIntyre, Dusek, & Quintero, 2011; Evans, Salisbury, Palombaro, Berryman, & Hollowood, 1992; Hall, 1994; Hall & McGregor, 2000). Peer status measures, however, may not relate to actual shared activities or to friendship (e.g., Evans, et al., 1992; Hall & McGregor, 2000).

While some researchers have described relationships of children with disabilities in inclusive settings as being very ordinary and characteristic of friendships between typically developing children (Staub, 1998; Strully & Strully, 1985), others have suggested that the friendships involving children with developmental disabilities may be different in quality or features (e.g., Bauminger, Solomon, Aviezer, Heung, Gazit, et al., 2008; Chamberlain, Kasari, & Rotherham-Fuller, 2007; Hurley-Geffner, 1995). Thus, it would seem probable that at least some relationships have a different character to those between typically developing children.

Examination of friendships in typically developing children and children with disabilities has often involved nomination of a “friend” and the subsequent examination of characteristics of the relationship on the assumption that nomination reflects actual friendship. For example, friendship scales such as those developed by Parker and Asher (1993) and Bukowski et al. (1994) have been used to describe the characteristics of friendships on the assumption that the relationship exists (Chamberlain, et al., 2007; Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011; Kuo, Orsmond, Cohn, & Coster, 2011; Wiener & Schneider, 2002; Wiener & Tardif, 2004). The assumption that nomination equates to actual friendship in typically developing children may well be reasonable. In children with developmental disabilities, however, friendships and other relationships may possess unusual characteristics and understanding of the term “friend” and

may not necessarily be the same as for typically developing peers. Researchers examining children with disabilities have used a variety of methods to infer the existence or non-existence of friendships, often consisting of a direct question as to whether a peer is a friend (e.g., Evans, et al., 1992; Kuo, et al., 2011; Lee, Yoo, & Bak, 2003; Locke, Ishijima, Kasari, & London, 2010) and have often assumed a preexisting friendship when examining features or interactions between the individuals involved in the relationship (Freeman & Kasari, 2002; Matheson, Olsen, & Weisner, 2007; Morrison & Burgman, 2009). Researchers, however, have not typically attempted to determine the extent to which these relationships actually met the criteria of friendship as it has traditionally been defined and the correspondence between nominations of friends and the expected features of friendship.

In a recent review of the literature on social relations of children with developmental disabilities, Webster and Carter (2007) found that, in contrast to the literature on the relationships of typically developing children, which had extensively examined the defining characteristics of friendships, more limited parallel research has been conducted on the friendships of children with developmental disabilities. Howes (1983) conducted one of the first studies of children with disabilities and typically developing peers in a hospital-based program for children with emotional disturbances. Using traditional definitions of friendship, Howes used the criteria of mutual preference, mutual enjoyment, and the ability to engage in skillful interaction to identify friendships between both toddler and preschool-age children. Howes discovered that mutual preference was the easiest criteria for preschool friendship dyads to meet, whereas mutual enjoyment expressed by positive affect, the most critical aspect of friendship, was the hardest to achieve. Although this study did utilize specific criteria to examine friendships between children with disabilities and peers, it was extremely limited by its artificial setting, narrow age range, and

primary focus on children with emotional disabilities. In contrast, Harry, Park, and Day (1998) found that individual features (reciprocity, liking, affection, and having fun), as identified by Bukowski et al. (1996), as important in the friendships of typically developing children were also present in the relationship of two girls with disabilities. The researchers in this study, however, made this evaluation based on subjective judgment rather than a systematic evaluation of these features. In addition, the researchers only documented the relationship of two girls who both had disabilities and attended a specialized class in a primary school. Freeman and Kasari (2002) utilized systematic criteria from research on friendship of typically developing children (i.e. stability, parent nomination and reciprocal nomination) to examine the friendships of children with Down Syndrome and their peers. After examination of information provided by target children, peers, and parents, the researchers discovered that at least 30% of all the dyads did not meet the stated criteria for friendship. More recently a small number of studies (Bauminger, Solomon, Aviezer, Heung, Brown, et al., 2008; Bauminger, Solomon, & Rogers, 2009; Rossetti, 2011) have used predefined criteria to select friend, but relied on the perceptions of individual students or parents to determine these friendships rather than confirming them through specific criteria traditionally used to define friendships.

Another aspect of friendship that has not been very thoroughly examined for the friendships of children with disabilities is the reciprocity of the relationships. Reciprocity has been considered a critical component in definitions of friendship. Mannarino (1980) stated that reciprocity is the most essential element in a friendship. Reciprocity can involve both mutuality of behaviors in a relationship and reciprocity of friendship nomination. Research on the mutuality of behavior in the relationship of children with disabilities has been very limited and has often only approached the issue indirectly. For example, much of the research examining

reciprocity has focused on mutuality of specific and limited behaviors during defined interactions (e.g., Evans, et al., 1992; Hanline, 1993), and not necessarily on the range of behaviors that are specifically associated with friendships. With regard to reciprocation of friendship nomination, only a handful of researchers (Chamberlain, et al., 2007; Freeman & Kasari, 2002; Wiener & Schneider, 2002) have utilized nomination by target students as well as reciprocation of nomination by peers to examine the friendships of children with disabilities. All of these researchers found that their chosen peers did not necessarily reciprocate the nominations of friends by target students. Although reciprocity of nominations and mutuality of behaviors have been reported between children with disabilities and typically developing peers, researchers have found that, in some cases, reciprocal friendships are more likely between children with disabilities (Cuckle & Wilson, 2002). Recently Kasari, Locke Gulsrud, and Rotheram-Fuller (2011) found that many friendships between children with autism spectrum disorders and their typically developing peers were often described by the individuals as unilateral rather than reciprocal friendships.

Much existing research on children with disabilities has focused on describing the characteristics and features of relationships that are assumed to be friendships on the basis of nomination. Few studies have attempted to examine whether nominated relationships actually include components of friendships as they have traditionally been defined. In addition, few researchers have specifically examined reciprocity of nomination of friendship between children with disabilities and their peers in inclusive settings. The present study was part of a larger investigation of the characteristics of relationships of children with developmental disabilities and examined the following research questions:

1. Do relationships between children with developmental disabilities and peers include the three defining components of friendship (mutual liking, mutual enjoyment, and shared interactions) and thus meet the criteria that have been used in the literature to define friendships between typically developing children?
2. What is the degree of mutuality of behaviors associated with the three defining components of friendship?
3. To what extent does reciprocal peer nomination of friendship accord with the presence of defining friendship components?

Methodology

Setting

The research was conducted in Alice Springs, Australia. Alice Springs has a population of approximately 27,000 people, which includes an estimated 5,000 Aboriginal Australians. Due to various employment and lifestyle opportunities, Alice Springs also has a highly diverse population with immigrants from many countries and cultures. It is located at the center of Australia and is 1300 km from any city with a larger population.

Selection of Target Students

A letter was sent to all area primary schools detailing the basic parameters of the study and outlining the criteria for selection of the target students. Schools were asked to identify any student who: (1) had been identified as having a developmental disability, which was defined as a significant delay in adaptive behavior and at least one other area of functional impairment such as cognitive or communication skills (Centre for Developmental Disability Studies, 2001; Developmental Disabilities Assistance and Bill of Rights Act 2000; National Association of Developmental Disabilities Councils, 2003; Northern Territory Government, 2005); (2) had a

high level of educational need in that s/he had been identified by the Northern Territory Department of Education, Employment and Training as requiring regular and ongoing individual assistance in order to access the curriculum; (3) had a record of regular attendance and/or would be present in school for the entire school year; and (4) had not been identified as a child whose primary disability was a sensory impairment (i.e. impairments in hearing, vision), a physical disability, or behavior problems. Children were also excluded from the study if the primary diagnosis was a learning disability with average intellectual ability, low achievement, and no corresponding significant delays in other areas or adaptive behavior.

This study was a part of a larger investigation (Webster & Carter, 2010a, 2010b, 2010c). In the original study, all 10 area public and private primary schools agreed to participate in the study, but three private schools (two of which were very small) reported that they did not have any students who met the specified criteria. Participating schools nominated all students who met the criteria for the study. Parental consent was obtained for 25 students. Due to the difficulties of children in preschool and transition classes might have in completing the full questionnaire used in this research, the current study was limited to examination of the friendships of the 16 target students in grades 1-6.

Target Students

Nine of the selected students were in the lower primary grades of 1 through 3 (mean age = 7:2, range 5:1-9:4), and seven were in upper primary grades 4 through 6 (mean age =10:9, range 10:0-12:1). Target students were predominately male with three girls and 13 boys. Seven children were identified as being of Aboriginal descent. Based on diagnostic reports of the 16 target students with a developmental disability, nine students had a primary diagnosis of an intellectual disability (five mild, three moderate, and one severe) with compounding disabilities

in communication and motor skills. Three students had a primary diagnosis of an autism spectrum disorder, two students had severe communication disorders with compounding social-emotional and learning delays, and two students had unspecified developmental delays with deficits in multiple areas.

The Vineland Adaptive Behavior Interview (Sparrow, Balla, & Cicchetti, 1985) and the Social Skills Rating System (Gresham & Elliott, 1990) were completed for each student using the teacher as an informant. Table 1 shows the individual component scores for the Vineland Adaptive Behavior Interview and the Social Skills Rating System as well as the ages and grades for each of the target students. The mean score for the Vineland Adaptive Behavior Composite was 62.8 (range 42-73). This score falls in the “low” range as the mean standard score is 100. In addition, 13 students (81%) had a composite score that was less than 70 while three students (19%) had scores that were below 60. Assessment on the Social Skills Rating System (Gresham & Elliott, 1990) produced a group mean standard score of 80.1 (range 62-97) on the Social Skills subtest. This is in the “low” range and reflects fewer social skills than would be expected for students in primary school age groups. A group mean standard score of 117.2 (range 104-137) was found across the 16 target students on the Problem Behavior subtest. This score falls at the high end of the average range. It is important to note that a higher score indicates the child exhibits a *greater number* of problematic behaviors that may interfere with learning. For students in the primary age group, a mean standard score of 80.3 (range 70-106) was found for the academic measure. This score falls within the “below” range when compared to the norm.

Nomination of Peers

Some researchers (Hurley-Geffner, 1995) have suggested that children with disabilities may have relationships that are different from those of typically developing peers. Consequently,

it was determined that peer selection would not be limited by sex, age, or gender, but would be restricted only to peers in the school setting. Nominations were also not limited to the child's class as children may have formed a friendship with a peer in a subsequent year but then have been placed in a corresponding class in the current year. Thus, sociometric analysis was not considered to be appropriate. Furthermore, previous researchers (e.g., Gest, Graham-Bermann, & Hartup, 2001) have questioned the validity of using sociometric instruments to identify friends, indicating they may reflect personal popularity rather than suggesting friendship per se.

The range of ages and communication levels of the target population in the present study made it necessary to find a method of peer nomination that allowed target students to participate in the nomination of peers. Thus, it was decided that target students would be asked "please tell me the names of your three closest friends". Following nomination of peers were by target students, his/her teacher was shown the list of friends and asked to confirm through verbal agreement that these peers were the three who had the closest relationship to the target student. Teachers confirmed the nomination of all 15 target students who were able to verbally nominate their three closest friends. For one student who was nonverbal, the teacher was asked "who are the three peers who are the target students closest friends, or if not friends, are the peers who are closest to the target student?". The target student was then shown pictures of six peers, including the three that had been nominated by the teachers as well as three that were randomly selected, and was asked to point to her friends. The target student confirmed the nominations of her teacher through picture selection.

Three students were initially selected for each of the 16 target students, but after one nominated peer moved during the initial phase of the study, a total of 47 nominated peers participated. Fifteen peers were female and 32 were male. Peers were in grades 1 through 6.

Thirteen nominated peers were of Aboriginal heritage. Eight nominated peers were currently enrolled in classes other than the ones in which the target students were enrolled. Five nominated peers were selected by two different students, and two target students were also selected as nominated peers by other target students.

All nominated peers participated in an interview concerning their relationship with the target student. During these interviews, peers were also asked to nominate their friends. Twenty-nine peers identified the target student as a friend when asked to list their friends at the beginning of the interview. If the peer did not voluntarily nominate the target child, s/he was asked a direct question as to whether the target student was a friend. Thirteen peers confirmed that the target student was his/her friend after being directly asked, and five peers stated that the target student was not a friend when asked. One peer was not able to confirm or deny the target student as a friend due to limited proficiency in English. Peers were interviewed regardless of whether they indicated the target student was a friend as the target student had identified the peer as a friend.

Development of Questionnaire

The questionnaire used in this research contained 77 questions, but only 18 of these were pertinent to the research discussed in this article. Descriptions of the three components of friendship provided by Howes (1983) and Bukowski, Newcomb, and Hartup (1996) were examined to identify the behaviors associated with each component. Thus, questions were included that directly reflected the descriptions provided by the above researchers. The components of friendship and interview questions for each question are presented in Table 2 and will now be overviewed.

Howes (1983) defined shared interactions as the ability to engage in reciprocal and complementary play in which the actions of one child result in a reversal or extension by the

other child and in which both children are aware of and responsive to the roles of the other.

Bukowski et al. (1996; 1983) add that shared interaction includes mutual regard behaviors such as cooperation as well as perceived benefits. Behavior indicators associated with shared interactions include playing together (Q8), sharing things (Q7), sitting around and talking together (Q12), counting on each for ideas (Q11), shared interests (Q10), and working together to come up with ideas on ways to do things (Q13).

Howes (1983) defined mutual enjoyment as the ability to engage in positive affective exchanges during social interactions. Behaviors associated with mutual enjoyment include displays of affection between members of the dyad (Q15, 17, 18), expressions of feelings of happiness (Q2, 3) and enjoyment in activities (Q5) by both members. As stated in a previous section, the reciprocity of enjoyment is a critical aspect of friendship and thus behaviors and feelings of both members of the relationship should be measured.

Mutual liking or preference is described as a high probability that an interaction will follow a social initiation by either participant and suggests an emotional bond between the two persons (Howes, 1983). Bukowski et al. (1996) add that mutual liking suggests that a person wishes to spend time with a particular peer more than he/she wishes to spend time with other peers (Q4). Behaviors associated with mutual liking include calling someone a friend (Q1), asking that person to play (Q6, 9), and spending free time together (Q16).

One specific question (Q1) directly asked respondents whether “the peer called the target student his/her friend”. As target students were asked initially to nominate peers that were their friends at the commencement of the research, the question of whether the target student considered the nominated peer to be his/her friend was already assumed to have been answered.

Cronbach's alpha was calculated to evaluate the internal consistency of questions. The resulting values for shared interaction (0.86), mutual liking (0.85) and mutual enjoyment (0.81) indicated a high level of internal consistency.

Interview Procedures

As it was anticipated that obtaining information from children with developmental disabilities, including communication problems, over a considerable age range, would present a challenge, several strategies were employed to assist in obtaining the most complete data set possible. It was also anticipated that a number of the participants would not be able to complete the interview due to cognitive and/or communication delays. Thus, in order to present the most complete and accurate picture of the relationships, interviews regarding the relationship between each dyad were conducted with target students, nominated peers, classroom teachers (general education), and parents of target students. This is consistent with the suggestion of researchers (Freeman & Kasari, 1998; Kasari, et al., 2011) that multiple sources be used to provide information on relationships of children with disabilities to add support to the information that can be provided by the children themselves. Not all of the target students could provide answers to all of the interview questions. After consultation with classroom teachers, however, it was established that a large number could answer at least the first 10 questions on the interview form, four of which were pertinent to this study, and thus provide some information on their perspective of the relationships. This information was considered important. Five of the 16 target students were able to provide answers to the complete set of interview questions. An additional eight target students were able to answer the initial 10 questions, which included four questions (Q2, 7, 8 and 10), which were relevant to the current study.

In addition, several sample questions were given to students and the different responses were explained and demonstrated at the beginning of the interview. It was considered important to assess the level of reliability of child respondents. Thus, in the full survey of 77 questions, three of the first 10 questions were repeated for child respondents to assess reliability. Two of these three reliability questions were used in the present study. Students were considered to be reliable if they answered all three repeated questions identically. Only two target students were excluded as they did not meet the criteria for reliability and one target student was unable to answer any questions. In all cases, interviews still proceeded with peers, teachers and parents. Photographs of students were available if necessary to remind the target child of whom they were discussing. Adults and all children who could read were given a written copy of the interview format to follow as the interviewer asked the questions. More information on the adaptations to interviews is presented in Webster and Carter (2010a)

Interviews were conducted at schools for all participants with the exception of some parents, where interviews were conducted at community locations. Target students, parents, and teachers were asked each question three times in succession for each of the nominated peers. Parents and teachers were asked questions from the standpoint of the target student.

Interview Completion Rate and Data Sets

Thirty-one per cent of target students, 98% of peers, and 100% of teachers and parents completed the complete full set of interview questions relevant to this study. An additional 80% of target students completed the first 10 questions on the interview form, four of which were relevant to the current study. As mentioned previously, although nine target students and two peers were unable to answer all interview questions, parents and teachers were able to provide data for all questions. It should be noted, however, that parents, in particular, often responded

that did not know the answer to specific questions about their child's relationships with peers. Specific information on the number of dyads for which no data were available for individual questions is provided in the final column of Table 2. Data were provided for all 47 dyads for 13 of the 18 questions, and were provided for all but two dyads for the other five questions.

Data Analysis

A 3-point scale ("always", "sometimes" and "never") was used for all respondents. Further, if the respondent initially answered "yes", s/he was then asked if s/he engaged in the behavior "some of the time" or "all of the time". A "don't know" response option was provided, as it was considered inappropriate to force responses where a participant (such as a parent or teacher) might not have knowledge of the information. Prior to analysis, responses were converted nominally into scores with 3 for "always", 2 "sometimes", and 1 for "never". Responses to individual questions for each dyad were categorized as in the *high range* when the mean response across respondents was in the top range of possible scores (range 2.33 to 3.00). Responses were categorized as in the *low range* when the mean response across respondents was in the lowest possible range of scores (range 1.00 to 1.66). Responses were categorized as in the *medium range* when the mean response across respondents was between these values. If an interviewee failed to respond or responded, "I don't know" to a relevant question, their data were excluded.

Noting that differing numbers of respondents could contribute to each question, it was appropriate to evaluate the consistency of respondent scores for each dyad. Thus, an average deviation was calculated across the respondents for each question. A mean average deviation of 0.35 ($SD = 0.05$, range 0.24 - 0.47) was calculated across all dyads, respondents and questions and questions indicating a reasonably high degree of agreement among respondents.

The individual questions were then initially sorted according to the number of dyads with responses in the *high range*. Where responses in the *high range* were equal, the questions were further sorted by the number of dyads with responses in the *medium range*. Similarly, when the number of *medium range* responses was equal, questions were sorted by the number of responses in the *low range*. Questions were then ranked according to this sort.

Results

All questions were sorted and ranked by the number of dyads with scores in the high, medium and low range. The questions along with the component of friendship (e.g. mutual liking, mutual enjoyment, shared interaction) to which they contribute are presented in Table 2. In addition, the median ranking for each component of friendship was calculated. The median ranking for mutual liking was 7.5. The median ranking for mutual enjoyment was 10.0 and the median ranking for Shared Interaction was 10.5.

As friendship is defined as a reciprocal relationship that is characterized by mutual liking, mutual enjoyment, and shared interaction, results for dyads were examined to determine how many dyads had scores in the high range for the majority of questions. Dyads were sorted into three groups according to the number of questions and associated behaviors that were rated in the high range. Dyads were also sorted into three groups according to the number of questions and associated behaviors that were rated by respondents as in either the high or medium range. These results are shown in Table 3. The majority of dyads had scores in the high or medium range across the majority of questions and behaviors. This indicates that respondents reported that dyads always or sometimes engaged in many behaviors associated with traditional definitions of friendship. Additionally, eight dyads (27%) reported they always engaged in the majority of behaviors associated with friendships.

Mutuality of Behaviors

It has been argued that friendships and behaviors associated with friendships must be reciprocal or mutual. In order to examine the mutuality of behaviors, the responses for target students and peers for questions for each component were compared to see if they agreed that the behavior occurred. In addition, as many target students were not able to respond to all questions, the responses of peers and teachers (who answered questions from the target student's point of view) were compared. The results of these comparisons are presented in Table 3, which indicates the percentage of dyads in which there was total agreement, a 1-point discrepancy, or a 2-point discrepancy. It should be noted that a negative score indicates that the peer reported the behavior occurred more frequently and a positive score indicates that the target student or teacher reported the behavior occurred more frequently. The results indicate that a clear majority of target students and peers as well as teachers and peers agreed that behaviors either did or did not occur. The only exception was that slightly more dyads had a 1-point discrepancy for peers and target students than had total agreement for Shared Interaction. Additionally, the results for dyads with a 1-point discrepancy were examined to determine whether the disagreement was between 3.00 (always) and 2.00 (sometimes) or 2.00 and 1.00 (never). These results are presented in the final two lines of Table 3.

Peer Reciprocation

Peers either voluntarily stated that the target student was his/her friend when asked to list their friends (voluntary reciprocation), confirmed that the target student was his/her friend after being specifically asked (confirmed reciprocation) or stated that the target student was not his/her friend (non-reciprocated). Additionally one peer was unable to answer the question. Descriptive data for the number of questions scored in the high range by reciprocation status are

presented in Table 4. Corresponding data for dyads that had responses in either the high range or medium range are also presented. The results in Table 4 indicate that compared to the other groups, voluntary reciprocated nomination by peers was associated with a higher mean number of behaviors in the high range and a lower standard deviation in proportion to the mean. The range of behaviors in the high range for dyads with voluntary nomination was also quite wide in comparison to dyads with confirmed reciprocated or non-reciprocated nomination. Results for behaviors in the high and medium range were very similar except that dyads in all three nomination groups were linked to a wide range of number of behaviors in the high and medium range.

Discussion

The current study sought to determine whether 16 students with developmental disabilities and their 47 closet peers reported engaging in behaviors associated with mutual liking, mutual enjoyment and shared interactions, which have been identified (Bukowski, et al., 1996; Howes, 1983) to comprise the three critical components of friendship. In addition, mutuality of the behaviors associated with friendship was examined as well as the extent to which reciprocal nomination accorded with the presence of features of friendship.

Components of Friendship

Howes (1983) and Bukowski et al. (1996) have suggested that all three components of friendship must be present if the relationship is to meet the definition of a true friendship. In the current study, the responses of target students, peers, parents and teachers in interviews, indicated that no single component of friendship emerged as being differentially problematic for the majority of dyads. When questions and behaviors were ranked and median rankings were calculated for the three components of friendship, the median rankings were very similar. The

median ranking for mutual liking was slightly lower than the median ranking for the other two components, but the difference was small. This finding is somewhat inconsistent to some degree with the previous research of Howes (1983) who found that young children with emotional disabilities had a difficult time meeting the criteria for mutual preference (liking). This difference may reflect the different samples considered in the studies, emotional disabilities versus developmental disabilities, and preschool versus primary school students. Similarly, these results are somewhat contrasting to those of a more recent study in which Bauminger et al. (2008) found that adolescents with high functioning autism demonstrated less positive affect and shared fun in their relationships than a comparison group of typically developing children did in their relationships. These authors, however, did suggest that similar to the findings in the current study, the adolescents with autism did engage in many of the behaviours associated with friendship, but did so less frequently than typically developing adolescents. Thus, the degree to which children with developmental disabilities demonstrate all three components of friendship in their relationships, warrants more investigation to determine whether these individuals do indeed engage in a balance of these behaviours, but do so to a lesser degree than typically developing children.

To be considered a friendship a relationship should possess all three components of friendship. Thus, the results for dyads were also examined to determine how many dyads had scores in the high range across all three components of friendship. Eight dyads (17%) had scores in the high range for the majority of the questions and associated behaviors. While this figure was quite low, 79% of dyads had scores in the high or medium range for the majority of questions and behaviors. This indicates that the majority of dyads reported that they always or sometimes engaged in most of the behaviors associated with traditional definitions of

friendships. This is consistent with the findings of Webster and Carter (2010c) who found that during observations of children with disabilities and peers in playground settings, many of the children with disabilities engaged in frequent behaviors such as talking together, playing together and showing enjoyment, which are often associated with traditional definitions of friendship. Furthermore, one dyad reported that they always engaged in all but one of the behaviors associated with friendship and nine dyads reported that they engaged in all behaviors associated with friendship at least some or all of the time. This should be regarded as an encouraging finding and to some extent addresses the question of previous researchers (Bauminger, Solomon, Aviezer, Heung, Gazit, et al., 2008; Chamberlain, et al., 2007; Hurley-Geffner, 1995) whether the friendships of children with developmental disabilities look similar to friendships between typically developing children. In broad terms, there is evidence that for a majority of dyads, relationships were reported to possess the basic behavioral features associated with friendship, at least some of the time. It was also interesting to note that only four dyads had low scores for the majority of behaviors and nine dyads did not have low scores for any question and associated behavior.

Results also indicate that a small number of dyads were found to have scores in the high range across the majority of behaviors associated with friendship and a considerable majority number of dyads reported they always or sometimes engaged in most of behaviors associated with friendship. This result is somewhat surprising given the fact that dyads were identified based on the peers who had the three closest relationships with target students. It can therefore be argued that if these dyads represent the target student's strongest relationships, then at least four target students did not have any relationships that possessed the critical features associated with a friendship.

Mutuality of Behaviors

Reciprocity has often been defined as a key feature of friendship. One aspect of reciprocity is mutuality of behaviors in dyads. Thus responses for target students were compared to responses of peers for questions associated with the three components of friendship. The results for all three components of friendship indicate that at least 33% of target students and peers agreed exactly and 88% agreed within one point. Furthermore, disagreements between target students and peers of one point were more typically disagreements of whether the behaviors occurred all of the time or most of the time rather than whether behaviors were absent or present. These data would therefore suggest that target students and peers tended to agree about the presence of behavior and disagreements primarily reflected the extent to which behavior occurred. This would be consistent with the findings of Bauminger et al. (2008) that adolescents with autism spectrum disorders and their friends often agreed about the presence of certain features of their friendship including, mutuality, closeness, and help, but disagreed about how much these aspects were present in their relationship.

As some target students were not able to respond to all or even some questions, responses of peers were also compared to the teacher's responses. The teacher was asked questions from the viewpoint of the target student. The results of this comparison were very similar to that of target students and peers. Over the three components of friendship, at least 41% agreed exactly and 90% of teachers and peers agreed within one point. Teacher-peer 1-point disagreements were more evenly split as to whether the behaviors occurred all of the time or most of the time or whether behaviors were absent or present, perhaps reflecting the less direct access of teachers to some information on the relationships. It is important to note that neither comparisons between target students and peers or between teachers and peers revealed many 2-point discrepancies in

responses. Few researchers have examined relationships from both members. Mutual agreement as to whether behaviors occurred indicates that target students and peers in the present study often had similar perceptions of their relationship. This contrasts with the finding of Bauminger and Kasari (2000) that children with autism spectrum disorders often had a very different perspective of the relationship than their peers, perhaps reflecting the more diverse nature of the sample in the present study

Reciprocal Nomination and Characteristics of Friendship.

In previous research (Chamberlain, et al., 2007; Schneider, Fonzi, Tani, & Tomada, 1997; Wiener & Schneider, 2002) friendship was often determined only by asking target students and/or peers to nominate their friends or single best friend and then by comparing these results to determine reciprocation of friendship nomination between the two children. This process was approximated in the current study in two ways. First, after initial nomination of friends by target students and teachers, the three nominated peers were asked at the beginning of interview sessions to identify their friends at school (voluntary nomination, confirmed nomination or non-reciprocated nomination). Second, a question was included on the interview that asked respondents “if the peer considered the target student his/her friend” (Q1). As mentioned previously, as target students in conjunction with teachers were asked initially to nominate peers that were their friends at the commencement of the research, the question of whether the target student considered the nominated peer to be his/her friend was already assumed to have been answered.

Approximately 60% of peers voluntarily stated that the target student was his/her friend when asked to name friends. Another 25% of peers confirmed that the target student was his/her friend when directly asked and only 10% of peers indicated that the target student was not a

friend. With regard to the number of behaviors in the high range for dyads, the range data suggests that neither voluntary nor confirmed reciprocated nomination of target students as friends by peers necessarily indicated that dyads reported they engaged in behaviors associated with components of friendship. Voluntary reciprocation by peers, however, was associated with a reported greater number and lower standard deviation of behaviors in the high and high/medium range. Correspondingly, confirmed reciprocation was associated with a lower mean and greater variation in number of behaviors in the high and high/medium range. Predictably, non-reciprocated nomination by peers was associated with the lowest level of reported behaviors associated with friendship but friendships were not reciprocated in only a small number of instances. This finding would suggest that peers in dyads who were reported to frequently engage in behaviors associated with friendship were most likely to voluntarily nominate a target student as a friend or confirm the target as a friend if not initially nominated, but that nomination of friends by either target students or peers did not mean that dyads engaged in behaviors associated with friendship.

In particular, these data would suggest that a direct question directed to a peer regarding whether a child with a disability is a friend may not necessarily reflect the nature of the relationship, as indicated by more detailed behavioral questioning. Consistent with the suggestion of Bukowski et al. (1996), peer nominations may well reflect peer acceptance rather than “true friendship” as it has been defined in the literature. This result also supports the finding of Evans et al. (1992) that students in elementary school often associated a friend with just playing with someone. These data are also consistent with the finding of Freeman and Kasari (2002) that 30% of target students and peers in their study who nominated each other as friends did not report engaging in many behaviors associated with friendship.

The findings in the present study are of interest given that few researchers (Chamberlain, et al., 2007; Freeman & Kasari, 2002; Matheson, et al., 2007; Wiener & Schneider, 2002) have utilized reciprocal nomination of friends by both target students and peers and many have relied on only simple nomination of friends by target students (e.g., Bauminger & Kasari, 2000; Hall, 1994; Hall & McGregor, 2000) or only by peers (Evans, et al., 1992) to determine friendship between dyads. In contrast, some researchers (e.g., Gest, et al., 2001; Schneider, et al., 1997) have used reciprocal nomination by both peers and target students as well as supporting data to determine friendships between typically developing children. Similarly, in the present study, when stringent criteria involving multiple behaviors are applied, fewer numbers of dyads were actually considered to frequently engage in behaviors typically associated with friendship. These findings would also support the contention of Freeman and Kasari (2002) that quantitative measurement of specific and multiple criteria can and should be used to determine friendship between children with disabilities and peers. Freeman and Kasari utilized the criteria of reciprocal nomination, parent nomination, and stability. In the current study, criteria previously linked to the definition of friendship and its components as well as peer reciprocation were used to evaluate the presence of friendships between dyads. The present findings suggest that directly asking students if a specific peer is a friend (confirmed nomination) represents the least stringent criteria for friendship and such declarations are less likely than voluntary nomination to reflect the presence of expected engagement in multiple behaviors associated with mutual liking, mutual enjoyment and shared interactions.

Limitations and Future Directions

A number of limitations of the present study should be acknowledged. While information was collected from multiple sources (target students, peers, teachers and parents), the data

presented here was exclusively based on interviews. The present research was part of a larger study that included an observational component, but while observational data did provide information on dyads' interactions, observational data were insufficient to allow meaningful judgements regarding the type of relationships existing between dyads (Webster & Carter, 2010c). Additionally the research was conducted in Alice Springs, which is an urban community with its own unique characteristics. Further research should be conducted to check whether the results generalise to other settings. The present study is preliminary and provides a descriptive study of friendships. The nature of friendships would be expected to fluctuate, (Cutts & Sigafoos, 2001; Meyer et al., 1998) change and evolve over time and an important focus for future research should be to examine these longitudinal changes.

The current study extended previous research (e.g., Bauminger & Kasari, 2000; Hall, 1994; Hall & McGregor, 2000) in which peer nomination by target students was the primary means utilized to infer the existence of a friendship. While behavior in the high range in the current study were fairly strongly related to voluntary reciprocated nomination by peers, this was not the case with confirmed reciprocated nominations following direct questioning. Given this limitation, more extensive investigation of strategies to identify friendships between children with disabilities and peers appears warranted. In contrast with the research of Howes (1983), there was no clear evidence that behaviors associated with any component of friendship was more problematic for the dyads. This difference may have been a product of the different samples under consideration but additional investigation of this issue would seem justified. In addition, further comparisons of the friendship descriptions utilized in the current study could profitably be conducted with additional populations of students in the future evaluate the characteristics of these friendships.

Summary and Conclusion

The present study sought to determine whether relationships between children with developmental disabilities and peers included friendship as it has traditionally been defined. Interview questions associated with shared interaction, mutual enjoyment, and mutual liking, were used to evaluate the dyads' relationship for each component of friendship as well as to examine the relationship of dyads across 18 behaviors traditionally associated with definitions of friendships. A small number of dyads were found to have scores in the high range across the majority of behaviors associated with friendship and a considerable majority number of dyads reported they always or sometimes engaged in most of the behaviors associated with friendship. There was some evidence that voluntary peer reciprocation was associated strongly with the presence of reported behavioral indicators of friendship. Direct questioning of peers (i.e., "do you call the target student a friend?"), a common strategy in friendship research, may not reflect the true complexity of the friend relationship and may be more related to peer acceptance.

In conclusion, the present study sought to investigate the question of whether relationships between children with developmental disabilities and peers include friendship as it has traditionally been defined and whether these friendships are comparable to those of typically developing children and their peers. The results of interviews indicate that the relationships of some dyads did possess all the features of friendship and that these friendships were characterized by the same components of shared interaction, mutual enjoyment, and mutual liking that have traditionally been used to define the friendships of typically developing children.

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Table 1

Target Student Demographics and Assessment Scores

Student's Name	Age	Grade	Vineland						
			Composite	Communication	Daily Living	Socialization	Social Skills	Behaviour	Academic
Adam D	12.1	6	57	44	63	70	95	113	82
Adam N	10.8	5	61	65	69	64	62	133	72
Eldin	9.4	3	61	52	64	74	91	113	78
Gary	8.5	3	65	66	70	66	79	131	86
Harriet	11.4	6	42	22	43	60	62	112	72
Ingrid	5.7	1	67	69	71	69	69	110	76
Jacob	6.1	1	73	66	76	85	77	110	82
Jayden	10.9	5	67	61	67	81	86	118	76
Kira	7.0	1	62	68	52	74	86	118	70
Lucien	10.0	4	57	51	63	63	73	117	72
Martin	10.8	5	65	70	69	64	85	130	99
Mitchell J.	8.4	2	66	60	70	65	68	137	72
Payne	8.1	2	58	63	59	58	85	106	79
Scooter	7.8	2	71	71	75	75	90	113	82
Shawn	9.1	2	62	61	64	68	77	110	82
Tod	10.3	4	70	72	72	76	97	104	106
Mean	9.2	3.3	62.8	60.1	65.4	69.5	80.1	117.2	80.4

Table 2

Ranked Questions Associated with Three Components of Friendship

Ranking	Question	High Range	Medium Range	Low Range	Friendship Component	No Data
1.	^c Does ___ call you his/her friend?	37	8	2	ML	
2.	^c Do you feel happy when you are with ___?	35	11	1	ME	
3.	^d Do you think ___ is happy when he/she is with you?	33	9	3	ME	2
4.	^c Do you want to spend time with ___?	29	13	3	ML	2
5.	^a Do you and ___ do fun things together?	25	14	6	ME	2
6.	^c Do you ask ___ to play/talk to you?	22	19	6	ML	
7.	^a Do you and ___ share things with each other?	18	24	5	SI	
8.	^a Do you and ___ play together at recess and lunch?	18	22	7	SI	
9.	^d Does ___ ask you to play/talk to him/her?	15	23	9	ML	
10.	^c Do you and ___ like the same things	12	28	7	SI	
11.	^a Do you and ___ count on each other for good ideas about games to play	12	16	17	SI	2
12.	^b Do you and ___ just sit around and talk about school, sports, and things you like?	11	17	19	SI	
13.	^a Do you and ___ come up with good ideas on ways to do things?	11	16	20	SI	
14.	^a Do you and ___ pick each other as partners?	10	20	17	ML	
15.	^d Does ___ hug or wrestle with you?	10	11	24	ME	2
16.	^b Do you and ___ spend your free time together?	9	25	13	ML	
17.	^c Do you hug or wrestle with ___?	6	14	27	ME	
18.	^d Do you and ___ hug or wrestle with each other?	5	18	24	ME	

^a indicates item taken from the Friendship Quality Questionnaire (Parker & Asher, 1993)

^b indicates item taken from the Friendship Quality Scale (Bukowski, et al., 1994)

^c indicates items that were derived from descriptions of behaviors by Howes (1983) and Bukowski, Newcomb, and Hartup (1996)

^d indicates items that reflect reciprocity of behaviors

^e indicates item reflecting reciprocity of friendship

SI – Shared Interaction, ME – Mutual Enjoyment, ML – Mutual Liking

Table 3

High and High/Medium Responses Across Components of Friendship

	>2/3 of Questions	1/3 – 2/3 of Questions	<1/3 of Questions
Dyads with behaviors in high range	8	18	21
Dyads with behaviors in high/medium range	35	8	4

Table 3

Mutuality of Friendship for Components of Friendship Across Dyads

Discrepancy	Mutual Enjoyment		Mutual Liking		Shared Interaction	
	Target	Teacher/Peer	Target	Teacher/Peer	Target	Teacher/Peer
	Student/Peer		Student/Peer		Student/Peer	
-2	0%	1%	0%	5%	4%	7%
-1	16%	17%	13%	21%	16%	29%
0	48%	52%	44%	49%	33%	41%
+1	29%	24%	37%	23%	39%	20%
+2	7%	5%	7%	3%	8%	4%
<u>Always/Sometimes</u>						
<u>Discrepancy</u>	28%	21%	42%	25%	34%	22%
<u>Never/Sometimes</u>						
Discrepancy	17%	20%	7%	18%	20%	26%

Table 4

Number of Behaviors in the (1) High range and (2) High/Medium Range by Nomination Status

Behaviors in High Range	Mean	Standard Deviation	Range
Voluntary Nomination (n = 28)	8.43	3.68	2 to 17
Confirmed Nomination (n = 14)	5.46	4.74	0 to 12
Non Reciprocated Nomination (n = 5)	2.20	2.39	0 to 6
Behaviors in High/Medium Range	Mean	Standard Deviation	Range
Voluntary Nomination (n = 28)	15.00	2.48	9 to 18
Confirmed Nomination (n = 14)	11.46	5.68	2 to 18
Non Reciprocated Nomination (n = 5)	9.60	5.18	2 to 16