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Friendship in Children with Anxiety Disorders: A Longitudinal Examination

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Special Education

by

Clare Williamson Larkins

2014

ABSTRACT OF THE DISSERTATION

Friendship in Children with Anxiety Disorders: A Longitudinal Examination

by

Clare Williamson Larkins

Doctor of Philosophy in Special Education

University of California, Los Angeles, 2014

Professor Jeffrey Wood, Chair

There is a need for study on high quality friendship and its effects on children with special needs, specifically. One primary goal of this study was to examine the effect of anxiety on friendship over the course of three years. Participants were 172 children with and without anxiety disorders at a “laboratory” school who completed an interview on their best friendships. These interviews were analyzed with a new instrument, the Friendship Quality Coding Scale, which was found to be a valid tool with good interrater reliability and correlations to other metrics of friendship. For both children who met criteria for diagnosis with anxiety and those who did not, friendship quality was found to have a negative relationship with anxiety over time. When looking at individual types of anxiety, specifically Social Anxiety/Social Phobia, a negative relationship was found with friendship, again for both children with clinical levels of anxiety and those without. However, individuals without clinical levels of anxiety who nonetheless displayed elevated levels of Harm Avoidance showed increased friendship quality

over time. A qualitative analysis revealed some differences in the way children without anxiety characterized their friends; they often described them as “nice,” a term not often used by children with anxiety. Children with anxiety, also tended to give shorter and less-detailed responses to interviewer questions, and when asked to make wishes for their friends, they made wishes that would benefit themselves. These findings did not change over time.

The dissertation of Clare Williamson Larkins is approved.

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Think where man's glory most begins and ends
And say my glory was I had such friends.
- William Butler Yeats

Friendships, deep and meaningful relationships, have been of interest to philosophers of the human condition since ancient times. In childhood, friendships have been linked to developing self-esteem and skills in social adjustment (Berndt, 2002.) Additionally, they are associated with providing individuals with emotional and cognitive resources and forming a buffer against negative experiences (Hodges, Boivin, Vitaro & Bukowski, 1999.) Friendships are related to the development of self-confidence and self-efficacy, which can even affect success in later life (Hartup, 1992). Research has demonstrated some biological effects of friendship, as having more or better friendships has been associated with decreased levels of cortisol in children who were otherwise often excluded from activities with peers (Peters, Riksen-Walraven, Cillessen, & de Weerth, 2011.)

Some children, however, have difficulty with friendships, either making friends or keeping them. Children with anxiety disorders tend to have difficulty making friends for a variety of reasons tied to their diagnosis, including low confidence in social skills and poor social adjustment (Cartwright-Hatton, Tschernitz & Gomersall, 2005; Craig, 1998), as well as the ways in which anxiety as a disorder can have an overall effect on all domains of functioning (Kashani & Orvaschel, 1990). Additionally, children who are shy or withdrawn may experience lower friendship quality (Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006.) An examination of the way anxiety and friendship interact with each other, over time, may reveal more about the nature of each, such as whether elevated levels of anxiety at a younger age is correlated with later friendship development or the lack thereof, and whether having a high-quality friendship at one time is associated with continued friendship for children with anxiety.

Elementary school is a place where, in addition to mastering learning skills and content knowledge, children learn social skills and develop personal interaction experience. There, children with solid networks of friendship and support tend to fare better than those without when it comes to several important qualities, including adaptability and sense of self-worth (Bagwell, Newcomb & Bukowski, 1998). Simply having a friend often helps children to feel supported, and can provide support through validation as well as aiding in adjustment at school (Ladd, 1990; Ladd, Kochenderfer & Coleman, 1996). Wentzel, Barry and Caldwell (2004) found support that such outcomes may exist beyond elementary school. Their research indicated that having a reciprocated friend led to better social and academic adjustment in middle school. Additionally, Hartup (1992) has suggested that a positive impact continues later in life, through adulthood.

To date, the majority of studies on the importance of friendship and the impacts that it has on personal characteristics and achievement have been focused on or conducted with typically-developing children. The result is a dearth of information on the impact of having a high quality friendship on atypically developing children. Further research is needed on the complex issue of friendships and how it relates to the unique needs of atypically developing children. Specifically, children with anxiety disorders face unique challenges when it comes to friendship. Individuals with social anxiety tend to misread social situations; children with anxiety tend to interpret even neutral conversations in a negative way (Cartwright-Hatton, Tschernitz & Gomersall, 2005.) Those with separation anxiety find it difficult to be away from their loved ones, and often worry that harm might come to them as a result of the separation. Children with generalized anxiety disorder have excessive anxiety that is difficult to control (Silverman & Ollendick, 2005), and as a result they may be fearful of everyday occurrences in life, such as

attending school, interacting with others, or concerns about what is going on in the world. What all of these disorders have in common is the disruption of normal functioning as anxiety interferes with school and home life, thereby affecting the ability to make and keep friends, and impeding the development of all of the research-identified benefits associated with supportive friendships.

It is expected that a longitudinal analysis of friendship and anxiety will illuminate changes the two variables undergo over time. By collecting longitudinal data, it is possible to assess larger trends as they occur over time (Cole, Maxwell, Martin, Peeke, Seroczynski, Tram, Hoffman, Ruiz, Jacquez & Maschman, 2001.) Longitudinal studies, especially those which utilize multiple sources of information (i.e. self-report, parent report) also provide a clearer picture of potential reciprocal influences (Hodges, Boivin, Vitaro & Bukowski, 1999.) This is important, specifically, when considering a disorder such as anxiety along with the construct of friendship, as levels of anxiety both influence and are influenced by having quality friendships. With longitudinal data, it is possible to create a model whereby an individual's levels of each are established at multiple times and then compared to each other, nested within the individual, over time. It is hypothesized that, within an individual, as anxiety increases, the quality of friendship decreases, as the anxious thinking, expectations and behaviors of a child may wear on his or her friendships over time. Conversely, it is also expected that lower levels of friendship may be associated with higher levels of anxiety over time.

Theoretical Framework

Friendship quality in childhood can be explained with an integration of two models of development: an ecological framework and constructivist theory. The study of the relations

between a human being and the changing environments in which he or she lives, the ecology is affected by both the immediate relations in which the person engages as well as the influence of the larger community and society (Bronfenbrenner, 1977). In short, the ecological framework holds that outcomes are a result of the interaction of factors and no one single factor can explain the outcomes for an individual. This suggests that positive relationships and support from significant others such as peers and family can have a productive influence on children's development; this is supported by the prevailing research (Woolley, Kol & Bowen, 2008; Gonzales, Cauce, Friedman & Mason, 1996). The more supportive and beneficial relationships the child experiences, the better the effects upon the child may be.

Constructivist theory addresses, among other things, peer social interaction as it facilitates cognitive development in young children (Dewey, 1990; Piaget, 1983; Wood, 2007). According to this theory, rooted in both psychology and philosophy, in general children learn when given the opportunity to interact hands-on in their environment and participate actively in new experiences. This allows them to construct first-hand knowledge and it transpires for multiple individuals working within the same context. As Dewey said, "A being connected with other beings cannot perform his own activities without taking the activities of others into account...When he moves he stirs them and reciprocally." He looked at the schools, specifically, as places that nurture the capacities of children, as they facilitate these interactions and aid in mature development.

This theory extends to social behaviors, social learning, and social support. As explained by Piaget, the interactions that children have with their peers expose them to the new words, ideas, and concepts of their social partners. These constructive experiences also afford children the opportunity to practice modeling and taking different viewpoints within a variety of

situations. So, the more varied and high quality the experiences, the more social learning and social support a child receives. A quality friendship is a key building block of social development.

Friendship Quality

Since the beginnings of philosophy, people have sought to understand friendships as some of the most basic of human relationships. Socrates opined on the necessity of mutual liking in a friend relationship. Today, researchers reiterate that opinion, suggesting a bilateral dynamic of mutual liking which relates to acceptance (Bukowski, Pizzamiglio, Newcomb & Hoza, 1996). One modern and dynamic working definition of friendship identifies it as a relationship in which two individuals engage voluntarily, and the friendly gestures of each are reciprocated by the behavior of the other (Waldrup, Malcom & Jensen-Campbell, 2008). Berndt (2002) defines a high quality friendship as, "...characterized by high levels of prosocial behavior, intimacy, and other positive features, and low levels of conflicts, rivalry, and other negative features." In friendships, children experience feelings of intimacy and satisfaction (Ladd, Kochenderfer & Coleman, 1996.)

The benefits of such relationships are numerous, and include social confidence, self-esteem and self-knowledge, all within an environment of security and social support (Berndt, 2002; Hodges, Boivin, Vitaro & Bukowski, 1999). Friends also serve as a sort of social and cognitive scaffolding (Hartup, 1992), and having friends supports good outcomes in times of transition. Hodges et al. also support the notion of friendship as a buffer against rejection and loneliness, and others have found evidence that friendships may offer protection against the ill effects of peer victimization (Ladd, 1990; Ladd et al. 1996.) Conversely, without reciprocal

friendships or with low rates of peer acceptance, children may be at risk for negative outcomes such as criminal activity and dropping out of school (Parker & Asher, 1987) and may be more vulnerable to being victimized or bullied by their peers (Hodges et al.)

While it is important for children to have friends in general, it has been demonstrated that the real issue of importance is having a high quality friendship. It is not necessary to have a large group of friends, but the experience of having at least one high quality friendship can provide the benefits of social support and buffer against the negative effects of bullying (Bollmer, Milich, Harris & Maras, 2005.) In this study, self-report as well as parent-report questionnaires were used to explore the relationship between variables including bullying, and internalizing and externalizing behaviors. Among other interesting findings, it was found that having high quality best friendships protected children against being bullied, and this protection was not found when simply looking at overall friendship quality. Additional research by Woods, Done and Kalsi (2009) highlights the importance of having a quality friendship, not just a friend to name. In their research on loneliness and emotional problems experienced by the victims of bullies, they found that when victims of direct bullying have a high quality of friendship with a peer, as measured by self report on instruments concerning the strengths and difficulties of their friendships as well as friendship activities, they tend to experience reduced levels of loneliness. Similarly, with regards to victims of relational victimization, where social relationships and social standing are attacked, having lower quality friendships could actually precipitate bullying for the individual in question (La Greca & Harrison, 2005.) In fact, this study found that relational victimization, when occurring with a negative interaction with a best friend, was associated with high social anxiety and depression. It has been found, however, that having a quality friendship attenuates the effects

of bullying that would have been otherwise worsened by internalizing behaviors (Hodges, Boivin, Vitaro & Bukowski, 1999).

In studies of friendship over time, it is found that the characteristics of a friendship and the priorities of the friends may change. In his study, Bigelow (1977) sampled nearly 1,000 6 to 14-year-olds in two different cultures (Anglo-Canadian and Scottish). Participants were asked to write essays about their expectations for their friends and friendships. In analyzing the themes over time, these results illustrate how expectations and preferences shift, beginning with an emphasis on engaging in common activities at a young age, which the author notes as a more superficial conceptualization of friendship. This progresses to a second stage which values character admiration and rejects violations of friendship expectations. Though children are, of course, still engaging in play activities, this suggests a more complex conceptualization of the friend relationship. Finally, the ultimate stage presented is that where children value empathy, understanding, self-disclosure and commitment, among other characteristics.

Similarly, Mathur and Berndt (2006) found changes in the activities that children engage in as part of a quality friendship. In this pair of studies, the researchers took a cross-sectional sample of fourth and eighth graders and surveyed them on activities they like to do with their friends. From this, a list of common activities was compiled and another sample of same-aged children from the same schools completed a written questionnaire rating how often they participated in these activities with one friend or with a group of friends, and how important these activities were to their friendship. Overall, both ages of students reported Socializing as most important to their friendship, above all other activities, and the importance of this increased from fourth to eighth grade. Engaging in activities together related to School was perceived to be of second-most importance to both groups, and it, too, increased in importance from fourth to

eighth grade. The activities which decreased in importance across the grades were Play and Games and Sports. Both of these categories, however, were rated as of least importance to friendships by both age groups. The authors suggest, among other things, that this evidence is further support for the importance of socializing in building and strengthening friendships across all ages, but increasingly as children age. Further, they state that socializing, along with the other top priorities of students, namely spending time engaged in school activities and maintenance activities (eating, carpooling) are significantly related to the positive features of friendship. That is, engaging in these behaviors can support and improve the friend relationship for children across ages. Berndt (2004) also found changes in friendship over time, namely that children develop higher quality friendships as they age.

As shown in Bagwell, Schmidt, Newcomb and Bukowski (2002), patterns set in childhood can remain as a person reaches adulthood. In this study, sixty children who had participated in a friendship study in fifth grade were followed up as young adults of 23, thirteen years later, and again five years after that at age 28. They were assessed on multiple domains of adjustment, such as life status adjustment and psychopathological symptoms. Perhaps unsurprisingly, the researchers found that individuals who were rejected by peers in the study when they were children tended to demonstrate poorer adjustment on the measures as a young adult. Other findings of interest include that children who were rejected tended to report that they had had problematic family relations in their late teens and early 20's, and children who were not rejected reported more positive family relationships for this same period of time. The researchers posit that, because peer rejection is associated with so many other negative behaviors, including school problems and aggression, these issues may have been carried into the home life causing tumult there. During that same time period, rejected peers tended to have a poorer social life and

difficulties with romantic relationships, however this no longer seemed the case by age 28. Just this small sampling of findings from this study indicates the continued importance of friendship, as revealed by longitudinal studies.

These findings have been repeated across fields. Research in sociology, for example, has focused on the ways in which peer experiences shape individual development (Corsaro, 2006). Corsaro posits that children make persistent efforts to gain control of their lives, and then strive to share that control with peers, though it occurs in a constant state of negotiation and re-definition. He emphasizes the recent shift towards a process approach towards friendship. Notably, he identifies the role of conflict in close friendship relationships, where children attempt to get their peers to change their behavior and may withhold friendship or invitations until peers concede. In his work, a micro-ethnography of the social, communicative and interactive processes of a nursery school, he describes the active role that children take in constructing their society and the importance of friendships therein.

Similarly, another sociologist, Fine (1979) has traced friendship in the context of Little League through rich, qualitative observations. He believed in examining all cultural behavior in situ, and as such undertook a study to exemplify core features of culture content which affect the content of group cultures in three years of participant observation research. Specifically with regards to friendship, Fine found that it gave order to the groups, allowing the participants to structure the team's behavior more than even the coaches on specific activities, such as batting practice. Additionally, the boys on the team looked out for one another, such as when they instituted a rule against gum-chewing when playing when an outfielder choked during a game. This was not a league-wide rule, but the power of the social group compelled it. This research also underscores the importance of status to friendship, where Fine found that those boys with

better skill on the ball field tended to receive higher numbers of peer nominations. Additionally, making an important play could elevate the status of a boy, and even get peers to drop an unflattering nickname.

Additionally, in the field of anthropology, Ahn (2011) has elaborated on the way friendship development occurs in childhood by studying children over the course of a year in a preschool setting. She was able to sit in, to look closely at the children and to learn from their interactions and conversations which she reports in the rich detail that anthropological qualitative data analysis allows. While teachers may define friendship as, “people with whom they make stable and enduring relationships based on kindness, compassion, and sharing,” she says children tend to view friendship through their own reality, which means it may be more fleeting or situational. She notes that friendships are ways for children to create alliances, leading to build a stable, trusting relationship, as well as to exclude others. This definition of friendship is as shaped by what it is as much as by what it is not, or rather who is not included. In identifying key elements of friendship, Ahn reiterates many of the categories from Bukowski, Hoza, and Boivin (1994), including companionship, balance, and conflict. She found that through these, children learn to replicate and practice the values of the larger social culture. This enables them to assimilate the values of the culture into their own behavior and perform the acts of friendship.

As evidenced by the literature, the presence of friendships is assessed in a number of ways; peer nominations, observations and rating scales are among the most common. Each of these methods has its strengths, though they have liabilities when it comes to assessing the more complex idea of friendship quality. Conceptually, nominations may provide an idea of the existence of social links, but they do not reveal more about the nature of the interactions of the individuals. Observations give an idea of the exterior features of the relationship, but they do not

allow for understanding some of the deeper features such as motivations and feelings. To understand friendship quality requires that raters attempt to get a sense of the intensity and affect of the relationship, which is an advantage of rating scales, though they have their limitations in terms of restricted topics and level of detail.

A number of instruments have been designed to capture the quality of a friendship, notably among them the Friendship Quality Questionnaire and the Friendship Quality Scale. The FQQ, developed by Parker and Asher (1993), was designed to assess children's perceptions of the qualitative features of their friendships. The key constructs, the elements of friendship picked up by this scale, are: Validation and Caring; Conflict Resolution; Conflict and Betrayal; Help and Guidance; Companionship and Recreation; and Intimate Exchange. In early research on the FQQ, the instrument was tested with over 400 third through sixth grade students. When it is administered, the rater asks the child to name his or her very best friend, and then this is verified through the sociometric assessment also taken to ensure that it is a mutual friend. The friend's name is then added to 40 actions or characterizations of the friend or friend pair (such as, "Makes me feel good about my ideas," and, "Go to each others' houses.") The child must indicate on a 5-point scale, where 0 is "not at all true" and 4 is "really true," how much each statement describes their friendship.

The Friendship Quality Scale (FQS) (Bukowski, Hoza & Boivin, 1994) is another instrument, designed to evaluate friendship quality in children and early adolescents. These authors state that they sought to create an instrument which would represent multiple, independent dimension of friendship based on what researchers and children have stated are central to that relationship, and one that was flexible enough to allow for the addition or deletion of individual items. Additionally, they prioritized the questionnaire format given its consistency

of administration and advantageous assessment of its psychometric properties. Based on a thorough research into extant friendship literature at the time, the authors found that the descriptors and behaviors associated with friendship tended to fall into one of six distinct categories. These six key components, which comprise the subscales on this instrument, are: companionship, balance, conflict, help, security and closeness. As with the FQQ, when the FQS is administered, first the child is asked to name his or her best friend, which provides a reference to which the child and interviewer can refer. Next, the child is asked to indicate their agreement with the statements about their best friend in the scale, indicating their agreement from 1, “not true” to 5, “really true.” Sample statements include, “Sometimes my friend does things for me, or makes me feel special,” and, “My friend and I go to each other’s houses after school and on weekends.”

In comparing the FQQ to the FQS, it is apparent that the researchers agree in what they consider some of the key elements of a quality friendship. For example, Companionship and Recreation on the FQQ aligns closely with Companionship on the FQS. Conflict on the FQS incorporates both Conflict and Betrayal and Conflict Resolution from the FQQ. Help is identified on both measures (though on the FQQ it is called Help and Guidance.) This overlap is significant because it triangulates the evidence and supports the idea that these are true and independent constructs which exist in friendship relationships. Differences arise on the remaining subscales, however. On the FQS, the construct of Security tends to incorporate items which would reveal whether the friends confide in each other, talk about serious problems, and whether they can make up easily after disagreements. On the FQQ, this is similar to elements of Intimate Exchange, which concerns sharing secrets and talking about difficult topics, and also the construct of Validation and Caring, which includes apologizing for hurt feelings and keeping

confidences. The construct of Closeness on the FQS uncovers the feelings a child has about their friend, including feeling happy with them, missing them if they went away, and feeling special because of their friend. This overlaps to a degree with Validation and Caring from the FQQ, which gathers information on how the friend makes the child feel, but the majority of this construct is not picked up by that instrument. So, it is apparent that even within the field and even among researchers who work closely and reference each other, there remain some disagreements as to the essential definitions.

Thus, as shown by the existing research, friendships provide children with support, allow for the development of a variety of essential, and protect against the ill effects of loneliness and peer victimization (Ladd, Kochenderfer & Coleman, 1996; Berndt, 2002; Hodges, Boivin, Vitaro & Bukowski, 1999; Ladd, 1990.) Over time, friendships strengthen and provide children with stability and support. One important note is that the majority of studies on childhood friendship study only typically developing children. It is important to consider, however, the effects of friendship on individuals not typically studied, such as those with special needs. Children with anxiety disorders, for example, behave socially quite differently from typically developing children, and this may extend to their behavior within a friend relationship. Further study is needed to examine the relationship between anxiety and quality friendships in childhood.

Atypically Developing Children

For a long time, research on friendship development has indicated that the ability to build friendships depends upon an individual's social skills (Gottman, Gonso & Rasmussen, 1975). In this study, 198 children were given a wide range of tasks designed to test social skills, such as ability to recognize emotions in pictures of faces, perspective-taking and communication.

Children were also assessed on making friends, giving help, and classroom behavior. The results indicated that popular and unpopular children differed in their knowledge of how to make friends, with popular children demonstrating more skill and knowledge regarding how to make friends. Additionally, more popular children gave and received higher levels of positive reinforcement with peers. This study shed some light on the ways in which children who more easily make and keep friends differ from those who do not, but it is just the beginning. As it was conducted with typically developing children, the results cannot necessarily be extended to explain social difficulties for children with disabilities.

Approximately six million students in the United States, which is nine percent of all students, are diagnosed with a disability of some sort that impacts them in school, according to the Department of Education (Hunt & Marshall, 2007). Legally, all children are entitled to receive a free and appropriate public education. This began with the Education for All Handicapped Children Act of 1974, and continued with the Individuals with Disabilities Education Act (IDEA) of 1975. This law has been re-ratified and reaffirmed at every opportunity, which is evidence of how important it is to ensure this access to education for all. With regards to identifying these children, assessment often begins with global assessments of functioning. Measures such as the Child Assessment Schedule, used by Kashani and Orvaschel (1990) are given to children to ascertain overall functioning and whether or not problem behaviors that may exist interfere with the child's ability to succeed in a variety of different settings, including home and school. This instrument is a semi-structured diagnostic interview that allows for the diagnoses of mental disorders as identified by the DSM-III. In the school setting, children who are identified with such measures as having special needs, if they do interfere with the child's ability to succeed, are often eligible for special education services.

Emotional Disturbance (ED) is one category under which children can receive special education services. Children with ED have one or more of the following characteristics:

- a) An inability to learn that cannot be explained by other factors
- b) Difficulty building and maintaining personal relationships
- c) Inappropriate behavior or feelings under normal circumstances
- d) A general mood of unhappiness or depression
- e) A tendency to psychosomatize

over a long period of time, to a marked degree, to the extent that it interferes with his or her academic performance (Hunt & Marshall). Estimates vary, however it is widely held that ED affects somewhere between 5-12% of students in special education. Emotional Disturbance, it must be noted, is not a clinical diagnosis; it is an educational one. A child with ED might be one diagnosed with Oppositional Defiant Disorder, Obsessive-Compulsive Disorder, or an Anxiety Disorder, or not with a clinical disorder at all. In general, however, it is clear from the disorder, that children with ED have needs and behaviors that impact their ability to make friends and succeed in a social environment.

When it comes to making friends, children with all types of disabilities may have difficulties that do not affect typically developing children. In their study on bullying in children with chronic conditions (CC), which they defined as a chronic disease or physical disability, Pittet, Berchtold, Akre, Michaud and Suris (2010) collected data from a sample of 7005 16-20 year olds. They found that, even when controlling for possible confounds, such as age and academic track (student or apprentice), individuals with CC experienced significantly higher levels of bullying, teasing and social exclusion than individuals without. In fact, while they found that 1 in 7 students overall reported bullying in the last year, that ratio dropped to 1 in 5

among the CC students. These CC students were also three times as likely as their typically developing peers to experience exclusion, and they were more likely to have fewer friends and lower levels of friend support. Clearly, children with disabilities have different social experiences than children without, and so may require additional understanding, research, and intervention.

Anxiety disorders, specifically, may inhibit the development of friendships. Researchers have found anxiety disorders to be the most frequently reported type of psychopathology in childhood when examined cross-sectionally from age 8-17 (Kashani & Orvaschel, 1990) and result in a negative influence on a broad range of behaviors. They are characterized by intense fear and avoidance of the fear-inducing stimuli (Greco & Morris, 2005). Oftentimes, children with anxiety avoid places and situations because the feared stimuli might be present, or they may refuse to perform certain actions out of fear of what might happen if they did. Additionally, it is characteristic of anxiety disorders for children who have them to perceive even neutral stimuli to be threatening, leading to a fear of even innocuous items and events (Muris, Kindt, Bögels, Merckelbach, Gadet & Moulart, 2000). This may lead to misinterpretations of social situations and, thus, difficulty building and maintaining friendships.

As a result, it has been found that elevated levels of anxiety are related to poorer social skills (Beidel, Turner & Morris, 1999). In their article modeling the experience of anxiety, Rapee and Heimberg (1997) note the evidence that social performance of people with anxiety is often worse than that of individuals without anxiety, as a factor of the disorder and, they argue, owing to cognitive capacity limitations and avoidance behaviors. Specific to children, Spence, Donovan and Brechman-Toussaint (1999) studied a group of 7-14 year olds and found that children with social phobia performed comparatively poorer than expected on measures of social skills, and

they demonstrated lower levels of social competence. Children with anxiety were also reported by their parents as having poor skills, and the children reported this on self-assessment measures as well.

Children with anxiety disorders demonstrate atypical responses to social stimuli and so may also believe that they display unusual behavior in social interactions. In research by Cartwright-Hatton, Tschernitz and Gomersall (2005), upper-elementary aged children, pre-screened and designated as having either high or low social anxiety, engaged in conversation with an unfamiliar adult. Following the task, the children were asked to rate their performance by answering questions such as “How nervous did you look?” and “How much did you blush?” while, concurrently, independent observers rated the children’s performances. The results were that the observers were unable to distinguish between the low and high social anxiety groups, even though the children in the high anxiety group rated themselves as having performed poorly during the social interaction. In addition to demonstrating the ways in which children with elevated anxiety misinterpret social experiences as negative, this research illustrates that children with anxiety think that they have worse social skills than they do, as evidenced by the fact the raters could not tell who had high anxiety and who did not. Clearly, negative self-perceptions are real for children with anxiety, and are a significant factor in social relations for this population. Similar results were obtained by Muris, Kindt, Bögels, Merckelbach, Gadet and Moulaert (2000), who played taped stories for children with anxiety disorders and had them predict whether the endings to the stories were scary or not scary. Those children with the highest levels of anxiety perceived the greatest amount of threat in the stories.

When tested for reactions to the social behavior and engagement of peers, children with anxiety also demonstrated negativity (Chansky & Kendall, 1997). In this study, children with

anxiety were shown a videotape of other children playing, and they were led to believe that these videotaped others were in the next room for the child to play with. When faced with this new social situation, children with anxiety disorders revealed through ratings that they perceived themselves as less socially competent than control children. This negative self-conceptualization led the children with anxiety disorders to express more frequently than the control children that they expected themselves to be disliked by the videotaped child, giving some insight into the baseline social functioning of children with anxiety disorders, especially in regard to their peers.

Because of these difficulties with social skills, and because socializing is so important to developing and maintaining quality friendships (Mathur & Berndt, 2006), it is not surprising that children with anxiety disorders have difficulty making friends and maintaining quality friendships. La Greca and Lopez (1998) found that children with anxiety felt less supported and less accepted by their peers, which may lead to behavioral avoidance of peers and further missed social opportunities. Inderbitzen, Walters and Bukowski (1997) found that, with children in 6th-9th grade, individuals with higher levels of social anxiety tended to be those reported as rejected by peers in classroom-wide sociometric peer nominations.

Further, bullying tends to be associated with anxiety in children (Craig, 1998). In this study, a sample of 5th-8th graders were assessed on bullying via a questionnaire which was designed to measure both bullying and victim experiences. Students were assessed on anxiety, depression, and aggression and victimization as well. It was found that experiencing verbal and relational aggression were associated with anxiety. Additionally, physical, verbal and indirect victimization (ex: being snubbed or excluded, being gossiped about) were all associated with anxiety also. Bullying is a serious problem and should be minimized for all students, but it is especially important to address for children with anxiety as it can lead to increased disordered

behavior and anxious thinking (Craig) in addition to the multitude of problems associated with being bullied, which include injury, discomfort, loneliness, low self-esteem, mental anguish, and others (Olweus, 2006).

Finally, anxiety has been understood to relate to poorer performance in school and potentially reduced learning. In their study, Alpert and Haber (1960) found several measures of general and specific anxiety to correlate negatively with a variety of measures of academic performance, including GPA and final exam performance. Additionally, test anxiety, specifically, has been established to be linked to lower performance on exams and therefore in classes (Pintrich & de Groot, 1990). Part of the reason for this poor performance may be a result of the increased school refusal exhibited by children with anxiety. Last and Strauss (1990) found that nearly half of their sample of 145 children and adolescents with anxiety engaged in anxiety-related school refusal. Finally, in her study on first and second year college students, Strahan (2003) did not find a direct link between elevated anxiety and lower GPA as she expected, but did find a significant correlation between anxiety and College Adjustment, which itself affects academic success. Taken together, these studies paint a picture of children and young adults with anxiety who experience symptoms of their disorder in the school environment, and this can cause them to avoid school entirely or to perform poorly when they are there.

Research has been done in an effort to understand friendship in general in children with anxiety disorders. With regards to understanding the mediating and moderating roles of social skills and close friendships in children with anxiety, Greco and Morris (2005) hypothesized that both of these contribute to the social anxiety that children experience and the peer acceptance that they receive. Questionnaires were given to fifty teachers and 333 children, and the latter additionally completed peer nomination activities identifying who they liked most and least in

their class. The researchers ran ANOVAs and correlations and a hierarchical model was constructed, with the results suggesting that social anxiety is negatively related to peer acceptance and that social skills can mediate this relationship. While it is unsurprising that anxiety is related to lower peer acceptance, given the features of the disorder, these findings underscore the importance of promoting friendship for children with anxiety by teaching them to increase their social skills.

Additionally, research by Degnan, Almas and Fox (2010) and Scharfstein, Alfano, Beidel and Wong (2011) reaffirms some of Greco and Morris' findings by identifying that children with anxiety disorders tend to have fewer friends. However, in each of these studies it has been demonstrated that children with anxiety are as likely as other children to have a best friend and, Scharfstein et al. found that individuals with Generalized Anxiety Disorder were as likely as peers without anxiety to participate in clubs and social activities, which is encouraging. Research has shown that friends protect against feelings of anxiety (La Greca & Harrison, 2005), and it can be that even one good friend serves as a buffer for a child socially (Bollmer, Milich, Harris & Maras, 2005), protecting against the negative factors associated with low social status, social awkwardness, or negativity. The existence of this best friend is quite important.

Schools, too, can have a serious impact on children. Research indicates that school climate, culture and values can influence everything from engagement in risky activities and depression (Denny et al., 2011) to student eating habits (Townsend, Murphy & Moore, 2010). With regards to friendship specifically, schools can explicitly foster prosocial behavior in students as young as preschool-aged through methods from promoting increased parental involvement and utilizing shorter instructional sessions (Power, Tresco & Cassano, 2009). Indeed, whole-group instruction is an advantage of the school setting; all children can receive

instruction in needed prosocial skills and have the opportunity to practice throughout the day. Important friendship skills such as sharing and conflict resolution, when taught with a whole-group method, can be reinforced each day to help individual students develop mastery and achieve successful friendships, similar to the camp-style friendship intervention run by Hoza, Mrug, Pelham, Jr., Greiner and Gnagy (2003). The site of the school as a place of dissemination is also ideally situated; Power et al. were able to promote more parental involvement, which can be instrumental in behavior change and a child's growth. Additionally schools can promote values of its culture which, in the case of friendship interventions, can set the stage and lead to increased prosocial and friendship behaviors. Thus it is important to consider the context of school and the unique advantages it offers when looking at friendships in children. These advantages can be maximized in outreach programs and interventions, as well as just the daily climate of the school, to improve friendship outcomes for the majority of students.

Overall, given the established benefits of friendship, which might be otherwise lost to children who have difficulty making friends, it is important to understand friendship in children with anxiety, specifically features and changes over time. With this information, stakeholders such as parents, teachers, therapists and even children with anxiety themselves will have more insight into their disorder, more information on typical patterns, and a greater potential to overcome the deficits of poor or limited friendships.

Gaps in the Literature

Even with all of the research that has been done, much remains to be understood about friendship. The majority of studies on the importance of friendship, such as Bagwell, Newcomb and Bukowski (1998), Ladd (1990), Hartup (1992), and Wentzel, Barry and Caldwell (2004)

focus on typically developing children; this is a shortcoming. Friendship is essential to the self-concept and well-being of all children must be studied across populations.

Even more remains to be known about the relationship between anxiety and friendship. While studies such as those by Greco and Morris (2005), Chansky and Kendall (1997), and Cartwright-Hatton, Tschernitz and Gomersall (2005) indicated that friendship and anxiety co-occur at one time point, the literature does not provide much depth in the description of the relationship between those constructs over time. Further, even as the intersection of anxiety and friendship quality or best friends have been studied by authors such as Hodges, Boivin, Vitaro and Bukowski (1999), this specific area of the literature is even smaller.

Of the studies that do exist on friendship and anxiety, the majority use observations or questionnaires as a primary method of information-gathering. In fact, Bukowski, Hoza and Boivin (1994) identify the wealth of techniques to identify and measure popularity, while noting a dearth of instruments to measure the experiences of friendship—and therefore give some indication of friendship quality—in school-aged children. That is why they created the Friendship Quality Scale, which resolves some of the noted issues by collecting detailed, thoughtful self-report data related to key issues in a best friendship. Observations and questionnaires in general, however, may be inadequate to capture all of the details of friendship and friendship quality. For one, the responses of the person filling out a questionnaire must conform to the format, which usually only allows for agree/disagree or a limited scale rating (such as 1-5). The questions are based on the ideas of the creator of the instrument and there is no room for the perspective or additions of the subject. Observations are similarly limited in that the individual being observed has no way to contribute to the data collected by the observer; observers merely look for certain behaviors, sometimes to the exclusion of others which may

skew the results to the elements that they perceive to be as essential to friendship. The actual function of a behavior or feelings of a child may be different from how it is expressed in either and observation or questionnaire situation.

In contrast, the present study was designed to blend the detail and richness of qualitative methods in friendship quality, such as those used by Fine (1979) and Corsaro (2006), with the structure afforded by using a rating scale with a coding scheme for analysis. Collecting data on friendships through a semi-structured interview allows children to talk about aspects that are important to them, within the structure of the interview. Post-interview coding allows for the analysis of quantitative ratings, just as semi-structured diagnostic interviews in clinical psychology. Ultimately, this allows for more intricate, nuanced, multifaceted data, as children are able to speak freely and devote the time to the topics and feelings that are of particular interest and relevance to them.

Finally, it would benefit the extant literature to have more longitudinal studies. The majority of research is conducted over the short term, or even at one time point, such as Ladd, Kochenderfer and Coleman (1996), or Bollmer, Milich, Harris and Maras (2005). It is likely that this is what can feasibly be conducted with limited resources or access to specific populations. Research conducted over longer periods of time, as in the current study, allows for the examination of changing phenomena over a long view, and may provide additional insight that a shorter-term, snapshot look does not.

A Note on Longitudinal Research

Longitudinal research allows us to examine changes over time. The passage of time itself can strongly shape the expression of various constructs, and so to incorporate it into analysis is to account for an essential factor (Cole, Maxwell, Martin, Peeke, Serocynski, Tram, Hoffman,

Ruiz, Jacquez & Maschman, 2001). Specific to research on friendships, it is expected that friendships will alter, especially in children, as individuals grow and their personalities, behaviors and preferences converge and diverge. Thus, it is important to include this element of time in the study design, to capture these changes, especially during key years of development. Cole et al. used a longitudinal design to evaluate the development of self concept, as measured by a variety of factors, over five years. They utilized structural equation modeling to examine stability of differences over time, and multilevel modeling to assess changes in the construct over time. The addition of the longitudinal piece in this analysis enabled the researchers to provide support for their hypotheses, namely that self concept would increase with time, to a point, undergo a period of transition in the early teen years, and then recover, improve and stabilize towards the end of high school. Such evidence would not be possible without the introduction of the factor of time, as produced by the longitudinal design. Additionally, these authors point out the importance of regular periods of data collection; they highlight the shortcomings of research that merely notes pre/post scores, or one initial time point and a much later follow-up time point. In their study specifically, as in the current study, it is important to be able to capture more subtle differences, such as those that occur from year to year. It is hoped that the inclusion of longitudinal data in this study will provide evidence for the hypotheses regarding temporal precedence; that is, that elevated anxiety at one time point is associated with lower friendship quality in the future.

Additionally, longitudinal research has been shown to be successful in studies on friendship in children, supporting its consideration as a method here. Fox and Boulton (2006) utilized a longitudinal design to examine the moderating effects of friendship for children with a range of social skills when it comes to peer victimization. These researchers sought to

understand the factors that promote peer-victimization, and so collected data at two time points to ascertain social skill problems, victimization, acceptance, and several factors of friendship. They found that having a number of good friends, as well as having high quality friendships moderated the relationship, over time. That is to say, maintaining a good number of friends and having good friends to relate to contributed to positive outcomes for individual students. The longitudinal aspect in this analysis allowed for the dynamic examination of such factors; without it, the researchers may have found that a child that has a lot of friends isn't victimized now, even if he possesses poor social skills, but they would not be able to say how that relationship holds up over time, or whether the addition of friends (or the addition of social skills) could improve the outcomes overall for that child.

Additionally, Hodges, Boivin, Vitaro and Bukowski (1999) utilized longitudinal studies to examine the multidirectional nature of the influence of behavior and peer abuse, or bullying. In this study, the researchers hoped to identify moderators of behavioral antecedents and outcomes of peer victimization. Children were assessed on loneliness and victimization in two consecutive years, and additionally their teachers reported on their behavior at the same times. Here, the longitudinal method allowed for the prediction of victimization at time point two based on factors (sex, age, victimization) at time point one. Moderators, including friendship quality and behavior, were added to the analysis as well, providing a more dynamic and nuanced model to capture the nature of what was actually occurring, as experienced by students. Ultimately, because of the way in which it allows for the examination data collection to show changes over time, the longitudinal method enabled the researchers to be able to answer some of the questions as to why and when childhood peer victimization occurs by looking at the antecedents to identified victimization at time point two.

Research Aims

Specific Aim 1: The first aim of this study is to develop a method of analyzing friendship quality that is valid and reliable. It is hypothesized that the FQ Coding Scheme exhibits adequate validity and reliability when overall alphas are calculated, when tested for interrater reliability, when compared to other metrics of social relationships in the classroom, when evaluated for internal validity and during test-retest evaluations. Using a unique instrument, the SFI, and coding scheme, the FQCS, allows for the examination of friendship in children, in general and specifically those with anxiety, in a novel way. It involves obtaining descriptions from children about their friendship, getting at details and descriptions otherwise not captured by surveys and observations. This provides additional insight into friendships not achieved by standard methods.

Specific Aim 2: The relationship between friendship quality and anxiety over time is examined. It is hypothesized that elevated levels of anxiety, as measured by the MASC and the ADIS, are associated with lower scores of friendship quality, as assessed by the FQ Coding Scale. Friendship quality at one point is associated with friendship at a later point in time and anxiety interacts with it. It was expected that a positive change in friendship over time is associated with a decrease in anxiety scores, and vice versa. For children who began the study with comparatively elevated levels of anxiety, it was expected that the trajectory of their friendship quality score slopes are lower, indicating lower levels of friendship quality, when compared to those children who begin the study with comparatively higher levels of initial best friendship quality.

Specific Aim 3: To perform a qualitative analysis with a subset of the interviews contained in the data set. It is hypothesized that, when asked about their best friendship, the reports of children with anxiety will differ from those of children without anxiety, and that these

differences will hold over time. The aim is to understand, qualitatively, how the child with an anxiety disorder characterizes their best friendship. Because the nature of the data as originally collected was qualitative, it makes sense to perform a complementary qualitative analysis to describe and add richness to the trends identified with the models of friendship and anxiety. With this information, it is possible to gain an understanding of the ways in which the child with anxiety disorders describes his or her best friend and the ways they engage with each other, as well as how that might differ for children without anxiety.

Design Statement

To complete Aim 1, the first step is to perform basic tests of validation. Alphas are calculated to evaluate internal consistency, and interrater reliability is tested as a means of evaluating the robustness of the friendship scale. Correlations between friendship, as measured by the score on the FQ Coding Scheme, and the friendship nominations for the Year One study participants give a comparison of this measure of friendship and existing measures. Test-retest evaluations allow a determination of how much the Year One FQCS scores predict corresponding Year Two and Year Three scores, as well as Year Two predictions of Year Three scores. Finally, age differences on FQCS scores are tested to check for significant differences which might influence the overall study results.

Three time points of data collection (Years 1-3) are nested within each individual, so each individual's friendship ratings are modeled as a time varying covariate in relation to anxiety over time for Aim 2. This is created utilizing Multi-Level Modeling. Potential moderators include child gender, household income, parental education level and child age. The models constructed follow this pattern:

Level-1 Model

$$\text{Friendship Outcome Variable} = \pi_{0i} + \pi_{1i} * \text{Age} + \pi_{2i} * \text{Anxiety} + e_{ti}$$

Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01} * \text{Gender} + \beta_{02} * \text{Household Income} + \beta_{03} * \text{Parent Education} + \beta_{04} * \text{Anxiety} + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11} * \text{Anxiety} + r_{1i}$$

$$\pi_{2i} = \beta_{20}$$

where the friendship outcome variable is the score from the FQCS, either total score or a subscale, and Anxiety is measured by either the MASC or ADIS, also either a total score or a subscale. The MASC models utilized the full dataset of 172 participants, while the ADIS models were restricted to the 41 children who had clinical levels of anxiety as measured by the ADIS.

For Aim 3, four transcripts—two students who were identified as having elevated levels of anxiety and two students serving as typically developing comparisons—were read. They were screened to ensure that data for all three years is available, and were kept otherwise homogeneous with regard to gender, race, age, etc. When analyzing the transcripts, first a working list of themes is developed and organizing memos are used to group these themes for understanding. Once a complete list of themes is developed, all of the transcripts undergo recoding with the finalized list of themes. From these finalized codings, patterns are observed and discussed.

Methods

Participants

Participants in this study were 172 children, over three years, who attended a university-based, research-oriented elementary school in a major metropolitan area in the Western United

States. As a part of the data collected, a subset of the children were identified as having anxiety by meeting the critical cut-off points of the Multidimensional Anxiety Scale for Children (MASC). These children received further testing with the Anxiety Disorder Interview Schedule (ADIS) to evaluate their levels of anxiety. Forty-one met criteria for a designation as “anxious” for the purposes of this study. Data collection began in January 2005 and was completed in September 2010.

The student population at the school resembles the ethnic/racial diversity of the larger community due to the fact that the school offers reduced-fee tuition for some attending families. Thus, the resulting sample of participating children, as evidenced by demographic information acquired during their first year in the study, is a relatively diverse mix of races and ethnicities, and it includes African Americans (4%), Asian/Pacific Islander (8%), Latino/Latina (19%), White (46%) and mixed or other racial background (23%). Participating children were predominantly from two-parent homes (92%), and the majority of their parents had at least a four-year college degree (80%). Socio-economic backgrounds were more diverse, with reported occupations ranging from unskilled labor to professional and yearly household income ranging from \$7,500 to over \$250,000. The median range of household income was \$90,000 to \$120,000. In studies, children with anxiety are often matched to typically developing children in areas such as age, sex, grade, and socio-economic status (Pittet, Berchtold, Akre, Michaud & Surís, 2010; Beidel, Turner & Morris, 1999; La Greca & Lopez, 1998), and so this was noted here for future analysis.

Interviewers

Besides one faculty member, the interviewers during the course of this study were all doctoral students from the UCLA Graduate School of Education and Information Studies and the

Department of Psychology. All interviewers were trained over several sessions, with periodic meetings for “booster” sessions. Regular meetings were held throughout the data collection time period to maintain interview consistency, clear up difficulties, and prevent interviewer drift.

Measures

The Multidimensional Anxiety Scale for Children (MASC) and Multidimensional Anxiety Scale for Children-Parent Version (MASC-P) were used to screen for potential anxiety diagnoses. By exceeding determined critical cutoff points (Wood, Piacentini, Bergman, McCracken & Barrios, 2002), children were identified as having elevated anxiety for the purposes of this study. This was confirmed by the administration of the Anxiety Disorders Interview Schedule (ADIS). The School Friendship Interview (SFI; Wood & Har, 2004) was used to gather information about the best friendships identified by participating children. The SFI is divided into two parts: the first section consists of social networks questions, which are designed to generate social acceptance and network centrality scores, and the second section is a qualitative, semi-structured interview which consists of open-ended questions about friendship and gathers information about the respondent’s best friend and the best friend relationship. Demographic information was also collected about each participant through parent surveys.

MASC

The MASC is a standardized, self-report measure of anxiety in children (March, Parker, Sullivan, Stallings & Connor, 1997). It has been normed and demonstrated reliability and validity in children across ages and genders. The MASC is comprised of four factor scales: Physical Symptoms, which concerns the somatic symptoms of anxiety including dizziness and trouble catching one’s breath; Social Anxiety, which concerns worrying about what others think and fear of embarrassment; Harm Avoidance, which includes fearfulness and risk avoidance; and

Separation Anxiety, including feeling uncomfortable in new situations or when away from family (March et al., 1999.) There are a total of 39 items. Children are given a series of statements reflecting various degrees of anxiety and anxious behaviors, and they indicate the degree to which they believe that each statement describes them on a 4-point scale. Cronbach's alphas for the four scales range from .74 to .85 (March, et al. 1997), the reliabilities of which are robust for all four factors and their subscales. The MASC-P, for parents, uses the same statements but changes the language to reflect the reporter's perspective. Overall, in analyzing the MASC, the concordance between the child's self ratings and the mother's ratings of the child are moderate (March et al., 1997). The text of the MASC was read aloud to any child who was too young to be able to complete it independently.

ADIS

This semi-structured interview, most often used in the youth anxiety research literature, is designed to assess current episodes of anxiety, as well as to differentiate between the anxiety subtypes that exist within the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) definition of anxiety disorders, and it is sensitive to the effects of treatment (Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). The depth of the questioning also permits functional analysis of anxiety. The ADIS has a good to excellent test-retest reliability regarding both symptoms scales and diagnoses, with reliability coefficients ranging from 0.63 to 0.88 for the different anxiety subscales (Silverman & Ollendick, 2005). Additionally, the ADIS has been demonstrated to have strong concurrent validity with the DSM-IV (Wood et al). In this study, the authors studied the convergence between MASC ratings and ADIS ratings after both the parent and child versions of each were administered to 186 children and their parents. MANOVAs were conducted to compare the mean MASC factor scores for children who met the

criteria of each ADIS diagnosis with the mean scores of those that did not. The MANOVAs for the children who met the criteria for Separation Anxiety Disorder (SAD) and for those who met the criteria for Social Phobia (SoP) were significant, indicating that the ADIS successfully captured these anxiety disorders. Additionally, these groups of children, along with those who were diagnosed with panic disorder, were found to have significant between-group differences when compared to children with disorders that were not anxiety disorders (such as Trichotillomania or Tourette's Syndrome). All together, these findings support the concurrent validity of the anxiety disorders of the ADIS. This is especially true for SAD and SoP, where these diagnoses held a specific relation to their diagnosis on the MASC. With General Anxiety Disorder (GAD), there was minimal support for concurrent validity, however this may be due to the high rate of comorbidity of GAD with other anxiety disorders. Diagnosis with the ADIS has been demonstrated to have high levels of inter-rater reliability with this dataset as well (Chiu et al. 2013).

In this study, participants were given the ADIS to evaluate anxiety after elevated levels of anxiety had been identified with the MASC. Children were rated on the full ADIS scale of 0-8 for each of the subscales of SoP, SAD and GAD. If a child had clinical levels of anxiety according to one scale but not the others, they would receive scores of 0 on the other scales. If he or she did not demonstrate clinical levels of anxiety on any of the ADIS subscales, they were not included for study in the anxiety group.

School Friendship Interview

The School Friendship Interview (SFI) is a detailed, semi-structured interview exploring friendships. During the first part of the interview children complete a survey of social networks, which draws from the work of Cairns and Cairns (1994). To do this, participants are asked to

name three friends in the classroom and then choose a best friend from among those three.

Children are also asked about social groups in their classroom; they are asked to name groups of friends and describe which children like to “hang out” with each other. The data produced by this section is used to create social networks diagrams for the classrooms, which allow for an analysis of the friendships in the classroom and how popular or isolated each individual child is. In this way, a broader picture of the social interactions in the classroom can be developed, as well as developing an understanding of the friendships of each individual child.

In analyzing this information, first reciprocal friendships are determined. If two children name each other as among their top three friends, then the friendship is reciprocated (Wentzel, Barry & Caldwell, 2004). This is a reliable measure of reciprocal friendship, which has been used in many studies on friendship in children, such as Farmer and Farmer (1996). Next, network analysis is conducted. The social network is made up of connections, indegrees and outdegrees, and it gives information about how popular or isolated the child is (Cairns & Cairns, 1994). Indegrees refers to the number of friendship nominations an individual receives. Conversely, outdegrees are the number of friendship nominations made by an individual. At their essence, indegrees capture how many times a target child was thought of by peers as a friend, and thus was included as a factor of interest in this study. Outdegrees show how many children a target child can think of and name as friends. Once the reciprocated friendships and social networks have been determined, the reliability of each is calculated. If necessary, adjustments are made to improve the overall reliability of the network. Calculations of the social networks at the very school where this data was collected were completed by another group of researchers (Locke, Kasari, Rotherham-Fuller, Kretzmann & Jacobs, 2012). With a high rate of response, they found that social networks and patterns are relatively stable over time and that

children with special needs, and also children with Autism-Spectrum Disorders specifically, tended to have less salience in classroom social networks, as well as receiving fewer friendship nominations from peers.

The second part of the SFI is a semi-structured interview, and participants were asked to think of and describe their relationship with their best friend. Children were first asked, to confirm their best friend, as noted from the initial list of top friends generated in the first portion of the interview. During years two and three, if the children identified a different best friend than one mentioned the year or two before, they were reminded and questioned about their previous friend, though the ultimate decision of who to discuss remained with the child. Next, the child was asked how they came to the decision of who was their best friend and which other friends they considered before making that choice. On the subject of the identified best friend, the child answered prompts about what activities they enjoyed doing together with their friend and for any stories of how they became best friends, and interviewers encouraged additional details in the responses. As a part of the administration, children were presented with a poster of emotion words (including like, trust, annoyed by, etc.) and asked to choose which words described their friendship. Interviewers asked follow-up questions based on the words chosen, for example, "Can you tell me about a time you felt trust in your friend?" Children were asked about how they met their friend, whether they have sleepovers together, and whether they share secrets, again with encouragements made to elicit further descriptions of the relationship. The child was then asked to make and describe a wish for their best friend: "If you could make one wish about your friend, what would it be?" The children were then asked a series of questions about another individual with whom they would like to make friends, as well as questions about a person who they used to be friends with that they could not see anymore, but each interview ended with the

researcher asking the child whether he or she thought the initial best friend discussed considered him or her a best friend, too, and if there was a story about a time that made them think that. Overall, the goal was to produce narratives about the child's experiences with his or her best friend, striving to shed light on the depth and quality of the friendship, as well as the child's emotional stance towards the friendship

Data Collection Procedures

Participating children ranged in age from five to 12 and were enrolled in grades K-6. The classroom environment in which the children studied was inclusive of students with disabilities. To have students from their classroom participate in the study, it was required that the teacher agree to collect the necessary consent forms from caregivers for participation. During data collection, it was made known to teachers and staff that they could refer parents of children with suspected high anxiety directly to the study. All of those suggested for the study were offered anxiety evaluations and it was known that they could potentially receive a Cognitive-Based Therapy (CBT) treatment. Ultimately, 41 children were identified with anxiety levels meeting the critical cutoff points of the ADIS, and so they received the CBT intervention.

Initially, participating teachers sent home an informational flyer to each family in their class, along with a cover letter from the school and a consent form for the study. Parents could opt to have their children only participate, or they could choose to participate themselves by either a) filling out questionnaires or b) filling out questionnaires and participating in a videotaped parent-child interaction at school. Consent forms were returned to the school and each child who brought back the form received a token of thanks, regardless of study participation. The final sample was comprised of children who returned signed consent forms from their parents and who assented to participate as well. This was approximately half of the

students in each participating classroom. Because of the random sampling, students identified with anxiety were found to be randomly distributed throughout the participating classes, with some even in the same class together. Additionally, select classrooms were screened looking for children with anxiety to participate in the study. As a result, a few additional children from grades 4-6 were recruited to receive treatment.

This process was repeated over three school years, with new cohorts of children beginning at Study Year One in each year. In total, 172 children completed the assessments for time point one. At time point two, 151 children completed the assessments, and 111 children did at time point three. Attrition was distributed randomly and effectively evenly across grades and sexes.

Data collection sessions began with students being pulled from their classes during the regular school day by undergraduate research assistants. In each instance, upon obtaining teacher permission, each child was taken by the research assistant to one of two rooms reserved at the school for research purposes. Data collection took approximately one hour in each instance. Interviews began with the administration of child questionnaires, which were conducted by the research assistants, which were then followed by the structured interviews, the SFI, the MASC, the ADIS, and the other instruments used in the study. These interviews were conducted by trained graduate students from the School of Education and a doctoral-level psychologist. Any parent interviews or parent tasks were conducted after school, in the same research rooms. All interviews were audio taped.

Once collected, the SFI interviews were transcribed from the audio tapes. To check for accuracy in transcription, at least 10% of interviews across each time point were double-transcribed, which is the benchmark for acceptable levels (Lombard, Snyder-Dutch & Bracken,

2004). Comparison of double-transcripts revealed no significant omissions or errors in accuracy. Transcriptions were then organized into summaries to enable faster searching and more dexterity with the data set. To organize the transcripts, the key questions of the SFI were identified and turned into column headings in a spreadsheet document. All of the stories the child told which addressed these key components were added into the document for each child.

Description of FQ Coding Scheme

For this study, which was conducted upon the completion of data gathering, the first step was to develop the scale which was used to analyze the interview data from the SFI. Research into the field of child friendship literature revealed the Friendship Quality Scale (Bukowski, Hoza & Boivin, 1994) to be a comprehensive and well-respected instrument to gather information on childhood friendships. The FQS is a survey, designed for school-aged children and adolescents, which identifies six major areas of friendship: companionship, balance, conflict, help, security and closeness. Based on their responses to 46 questions, respondents are determined to have best friendships that are weak, strong, or somewhere in between on each of these subscales. The reliability of each subscale, as based on Cronbach's alpha, ranges from .71 to .86. The FQQ, another leading measure in the field, was also considered but ultimately the FQS was chosen due to its streamlined nature, high reliability, and ease of access to adapt.

Thus, a coding scheme for the SFI, based upon the FQS, was developed. To begin with, six columns, one for each of the six key aspects of friendship (companionship, balance, etc.) were created. The intent was that, when stories which provided evidence for these qualities of friendship came up in the interview, they could be logged here in their entirety for qualitative analysis. Additionally, for each key aspect of friendship, columns were created which allowed for a rating from 1 (not true) to 5 (very true) as to whether evidence of each aspect was present in

the relationship as described by the child. These scores captured the rater's interpretation of whether the ideals were met, based on all of the information provided by the child during the interview. A column was also created for a rating of the friendship overall, as it compares to the idea of a true best friendship, which was defined as, "a classic best friend. They are a good companion, trustworthy, helpful. The friend supports the child and makes him or her feel better. The two do lots of activities together and get together outside of school as well as spending time together in school. The relationship may sound like a sibling relationship where the friends are extremely close, have strong positive feelings and the child may imagine or wish they were in the same family." With this overall rating, a score of 1 was if the relationship was considered that of a typical friend, 5 is a classic best friend, and 3 is a borderline best friend. The option of 0 is was available when the child's description of the friendship did not sound like a friend at all. As with the individual aspect ratings, this score was based on the rater's interpretation of what the child had said during the interview

In order to provide a clear, concrete description of each key aspect of friendship, "anchor" descriptions were written for each. For example, the description of a 5 for Companionship was composed, based mostly on the sub-questions that make up the concept of "companionship" for the FQS. These included such items as, "My friend and I spend a lot of our free time together," and, "My friend and I do things together." The resulting description of a 5 in Companionship was thus: "They spend a lot of time together. They may play together often during free times at school (such as lunch and recess), they go over to each other's houses to play together after school and they get together on the weekends. They are frequently spending time together, even just hanging out and talking." This process was repeated for each of the key aspects of friendship from the FQS. After initial drafts were composed, consultation was

obtained from the university faculty advisor, suggestions were made, and the descriptions were edited further. Once more, the components from the FQS questions were used to refine the descriptions. After a final conference and check for clarity, the definitions were completed and ready for use (see Appendix A).

Additionally, a close review of both instruments revealed that 30 of the 46 questions of the FQS were found to overlap in content with questions asked during the SFI. For example, at one point during the SFI, the child is asked what activities he or she enjoys doing with his or her best friend. It can be expected that this would overlap with the questions from the FQS regarding time spent together, such as, “My friend and I do things together.” To add to the depth of analysis of these interviews by providing more avenues for analyzing the content of them, these 30 questions were incorporated into the coding scheme. The wording of each question was changed slightly, to reflect the change from first to third person (Appendix B). Additionally, the order in which the questions were presented was altered slightly, with the majority retaining their original order, and some additional questions, those which were picked for inclusion at a later stage, added to the end. The meaning of the scale numbers, from 1 (not true) to 5 (very true), was slightly altered from the original 1 (not true) to 5 (really true). In the description of their instrument, the authors of the FQS state that raters must understand that 1 and 5 are “extreme values,” implying they would not often be chosen. Instead, in this interpretation, they represented truth and so, if the child indicated that an activity or feeling happened even once (or never happened at all), it was true and so could be rated at these “extremes.” A number of statements from the FQS were deemed not likely to come up in the administration of the SFI at all, and so were not included for study. An example of such a statement is one which said, “If I said I was sorry after I had a fight with my friend he would still stay mad at me.” Children given the SFI

were not asked about fighting. While it is possible that a child might spontaneously address this subject, given that the questions on the SFI asked about how the friends met, what they liked to do together, and other related aspects, it was not likely that the specifics of fighting behavior would come up in the interview and so that question was not included.

Thus, the full FQS-based coding scale for the SFI was assembled with the included original FQS questions and the identifications of overall key aspects of friendship. Before it could be used to analyze the interviews, however, it had to be tested for accuracy, practicality and ease of use. Five research assistants practiced using the scale to code the same transcript, and then the results were discussed at the weekly lab meeting. Weaknesses of the coding scheme, areas where the way it had been written was unclear, or questions that were included which did not seem to belong, were identified by the research assistants. With consultation from the university faculty advisor, the scale administration language was clarified and minor changes were made. At the following lab meeting, the researchers practiced using the updated coding scheme with a sample transcript and the results were discussed. Based on the results of this trial, further changes were made to clarify the language and improve the understanding of the researchers. Inferring was thought to be a major issue while conducting the coding; research assistants tended to have difficulty knowing when to infer what a child's response to a question might be, and when to simply mark that topic as not addressed. A set of precedence rules of when to infer was developed to assist with this aspect (see Appendix C) and the code 99, meaning "not applicable" was developed to designate those topics that did not come up in the specific interview.

Another round of practice coding with the FQ Coding Scheme document revealed a few areas which were found to continue to confound research assistants and interfere with interrater

reliability. These included what constitutes: trust, helping, doing things together, arguments, happiness and valuing the child. After discussion in lab meetings and consultation with the faculty advisor, a set of guidelines for common issues was developed to address these specific aspects as they arose (see Appendix D.)

With these clarifications in the anchor paragraphs, establishment of the final FQ Coding Scheme, and two rule sets prepared, it was determined to move on to the next phase of data analysis, training the research assistants to complete coding of the SFI using the new coding scheme.

Coding Training Procedures

Coders were one trained doctoral student from the UCLA Department of Education and ten undergraduate students in Psychology. Coder 1, the author of the current study, served as the primary coder. The other coders, after receiving approximately 20 hours of training, conducted additional coding. The author of the current study completed double coding for 20% of the files coded by other raters. Training for coders began with an introduction to the coding scheme. Together, research assistants went through each column and had the chance to ask questions about any prompts which might have been confusing. Next, a sample transcript was coded together, out loud, working through any questions or issues that arose. Specifically, together the RAs, along with the principal coder, read a sample transcript over once then went, question by question, through the coding scheme to see how it would be coded. As ratings were made, the various merits of different responses were discussed so that coders could see how to come to decisions. Each rater was provided with a copy of the rules on inferring and common issues, and part of the training was instruction in how to use these materials to address issues that arose when coding. Once the sample coding assignment had been completed by the group together, the

group of raters received the same set of 5-10 transcripts as a first practice assignment. At the next lab meeting, the responses to these were discussed and any further questions were answered and issues addressed. With one group, there was a fair amount of disagreement in ratings, so those coders received a second, shorter practice assignment. For the other group, ratings seemed similar and so those were used to calculate intraclass correlation (ICC) with the primary coder as a means of establishing rating reliability.

Opinions differ on the acceptable ranges for ICC. Fleiss (1986) has reported that a range of 0.40 to 0.75 is a range of fair correlation to good. For research in the health-related fields, Streiner and Norman (1995) recommend values greater than 0.75 for continuous scales. While this was not health research specifically, it was conducted on a continuous scale. Thus, an ICC of 0.75 between the primary coder and each rater was set as the standard.

To be considered as meeting the requirements for ICC for this study, each rater had to produce an ICC of 0.75 with the primary coder on at least five transcripts and over two separate occasions. After the first calculation, ICC values for different coders ranged from .698 to .769. Those raters who did not meet the standard were given additional training and feedback and an additional assignment, where ICC was calculated again. All coders achieved acceptable ICC ratings by the third assignment. Once acceptable ICC had been established, coders were given their own assignments to complete independently.

Coding Process

Coders were first instructed to read the entire SFI transcript once without performing any scoring. Each transcript was then reread and coded using the "FQ Coding Scheme." To do so, raters first answered the 30 questions taken from the FQS, and then they completed the sections on the six key aspects of friendship, first finding stories from the transcript that highlighted each

theme (companionship, balance, help, etc.) and then giving a 1-5 rating of how much that theme was evident in the transcript. Finally, researchers rated the overall friendship on a scale from 1 to 5 with regards to how much it matched an ideal best friendship, as described in the anchor paragraphs. Coders completed groups of 10 transcripts at a time, submitted their work to be checked for accuracy, and then received the next assignment.

To ensure accuracy and reliability, 20% of the total number of transcripts existing at each time point were double coded by the first author. IDs were chosen for double coding by a random number generator, with the parameters 1 and 172. When a number was produced, it was checked to make sure a transcript existed for that ID at that time point, and if so it was selected for double coding. The only exception to this method was four transcripts from assessment three, which were double coded accidentally during the original coding. It was decided to save that work for double coding, instead of throwing it out. Agreement between double coding and original coding was calculated using intraclass correlation. It was found to range from .610 to .868, depending on the scale in question, FQCS, FQB or FQGR, and year.

Additional Independent Variables

Additional variables from the demographic survey and other measures given to parents were included in the analysis to account for varying items that may relate to friendship in elementary-school aged children. These included the age of the child at Time Point 1, their gender, whether or not the child regular underwent sessions with a therapist, whether or not they took medication for a social or psychological need (excluding physical disorders, such as diabetes), whether the named best friend was in the class or not, and the student's academic performance, as measured by grade reports and standardized tests (CSTs.)

Qualitative Analysis

As an additional means of gathering meaning from the data, a subset of the School Friendship Interview transcripts was chosen for qualitative analysis. It was expected that this would offer more detail as to the conversations children were actually having about their best friends, which might be condensed or overlooked by the quantitative nature of the coding scheme, which seeks to fit responses within the parameters of the codes. Further, if the qualitative analysis suggests the same aspects and behaviors in a best friendship as those identified by the FQS-based coding scheme, that is further evidence for the efficacy of that coding.

In conducting a qualitative analysis of transcripts of interviews, one of the best ways to find essential themes is to draw upon the bigger ideas suggested by the literature (Ryan & Bernard, 2003). Therefore themes such as those prescribed by the FQS (companionship, conflict, help, etc.) were expected. In order to find additional, unexpected themes, I looked for individual words or phrases that were repeated over respondents, a qualitative research technique suggested by Ryan and Bernard. These repeated words indicate topics or themes that are important to the respondents to the interviews. By looking at these words in context, I was able to develop an understanding of the usage of these words in terms of the ideas they are meant to express.

First, a target subset of transcripts was identified. It was decided that, to have a representative sample, it was necessary to examine the transcripts of two children identified for the treatment group due to elevated levels of anxiety, and two children who were in the typical group. Another essential factor was finding participants who had data for all three years of the study. A random number generator was used to select each ID number. When selections were made, each ID was checked to ensure that transcripts existed for that individual for all three

years of the study. By chance, the first two IDs chosen were both complete, and both belonged to individuals who were designated as typically developing. Limited profiles, consisting of age and sex, were created for each of these IDs. Next, to find the treatment group “match” for each typical profile, the IDs of the children identified as treatment were compiled and the random number generator was again used to select one. The identified ID was checked to ensure all three years of transcripts were on file, and then checked as to whether it matched one of the two typical profiles. In this way, the first anxious match was selected. Finding a match for the second ID proved impossible; as there were far fewer males in the treatment group, there was none the exact age of the typical match at the first time point. So, the typical match was thrown out and a treatment ID was chosen. A typical match of the same age was chosen at random from the larger sample, using the same random number generator.

Once the subjects had been determined and the transcripts had been obtained, all of the Year One transcripts were read through once, blind to status as typical/treatment. They were read through a second time and coded for themes. To do this, I noted in the margins when ideas from the FQS appeared, as well as any other activity or quality that seemed important and relevant to the friendship. Analytic memos were used to keep track of these themes. These memos were used as a place to list examples of emergent themes with quotes from the transcripts, record ideas about potential themes or ways in which smaller themes could be combined, and write down issues I noticed that would need further resolution before proceeding with a set list. Once a solid working list of themes was settled upon, all of the transcripts of interviews from Year One were re-read and coded again with this stable list of themes. Years Two and Three were then coded for these themes as well.

Results

Aim 1: Assessing the FQCS

Analyses were completed to ensure that the sample of interest, children who met clinical cutoff levels for anxiety, did not differ significantly from the children in the sample without anxiety disorders. Typically in the literature, such subgroups are matched according to age, sex, grade, and often socio-economic status (Pittet, Berchtold, Akre, Michaud & Suris, 2010; Beidel, Turner & Morris, 1999; La Greca & Lopez, 1998). Demographic information was acquired from the first year of participation in the study, when participants filled out a brief demographic questionnaire. It was found that the mean age of the children with anxiety was 8.44 years and the mode for grade was 2nd, while it was 8.38 for children without anxiety and the mode for grade was both 2nd and 3rd. Of the children with anxiety, 46.3% were female, while 52.7% of the children without anxiety were female. Since family income was measured in categories, the mode was taken for comparison of the two groups. The average family income level for a child with anxiety was \$120,000-249,999 while it was \$250,000 or higher for a child without anxiety. For both the children with and without anxiety, the most commonly spoken language in the home was English, the most common ethnicity was Caucasian, and the most common parental living situation was to have the parents living together and married. The parents of participating children were very well educated, with 62.5% of respondent parents in the anxiety sample holding had four-year degrees, while another 25% held graduate or professional training. In the sample of parents of children without anxiety, 47.2% held graduate or professional training and another 30.9% held a four-year degree.

It is also important to note additional diagnoses that may co-occur with anxiety, as these may affect behavior and, in turn friendship. Each of the 41 participants with anxiety were

assessed for comorbid disorders, and the results of those which appeared at clinical levels are displayed in Table 5. All comorbid disorders occurred in Year 1, and were not found in subsequent years. As can be seen in Table 1, nine individuals, which is nearly one quarter of all individuals identified with clinical levels of anxiety, was also diagnosed with a comorbid disorder.

Table 1: Frequency Comorbid Disorders

Comorbid Disorder	N
Attention-Deficit Hyperactivity Disorder	5*
Oppositional Defiant Disorder	4*
Obsessive-Compulsive Disorder	1

*One individual displayed clinical levels of both ADHD and ODD at time one.

To prepare the data set for analysis, first the reverse-worded items were re-coded. There were only two of these, both on the Balance subscale. The questions related to Conflict were also reversed, due to a higher level of conflict being associated with poorer levels of friendship. Next, false missing items, items that should have been coded but were skipped due to coder error, were filled in by the double coder. This affected seven transcripts in Year One, nine in Year Two, and 39 in Year Three. If the missing value was from a file that had been double coded, the double code was used. If not, the rest of the line of data was examined to inform what the missing value should be.

There were three children in Year Three who were unable to choose one best friend to discuss during the SFI. In the rest of the interviews, across all years, children were led through a series of steps to choose their best friend to discuss for the purposes of the SFI. But, for these three children, and only at Year Three, this did not occur and they were allowed to discuss two best friends. For the purposes of the analyses in Aim 1, where the focus of the analysis was capturing friendship quality, these cases were included and treated as two different friendships for each child, each with their own line of data. In analyses for Aim 2, where the interest was in

modeling change in friendship over time for the individual, the primary researcher went back to the transcripts and chose which of the two friends mentioned seemed to better fit the definition of a best friend, and that relationship was chosen for analysis.

To analyze the overall internal consistency of the FQCS, a series of Cronbach's alphas were computed for each year of the study. First, an overall alpha for the entire FQCS scale was calculated, the FQCS Total score. Next, an alpha score was calculated for the FQB, and for the FQGR first half of the dataset, those questions drawn directly from the FQS and concerning friendship behaviors. This subset was termed Friendship Quality Behaviors (FQB). Alphas for the second half of the scale, where the child's narratives were assessed and rated globally by coders on the six elements of friendship that comprised the FQS (Companionship, Balance, Conflict, etc.) were also calculated., though not including the final question, which was a universal rating of friendship completed by the raters based on the child's responses. This subset was termed the Friendship Quality Global Rating (FQGR). The results are presented in Table 2.

Table 2: Coefficient Alphas for the FQCS

	FQCS Total	FQB	FQGR
Year 1	0.944	0.929	0.821
Year 2	0.839	0.798	0.589
Year 3	0.944	0.871	0.767

Cronbach's alphas were computed for each of the elements of friendship, using the questions from the FQB that appeared as subscales on the SFI. This was done for each year of the study. The results of these calculations appear in Table 3.

Table 3: Coefficient Alphas for the Subscales of the FQB

Scale	Y1	Y2	Y3
Companionship	.711 n=121	.722 n=88	.633 n=62
Balance	.914 n=154	.940 n=129	.920 n=86
Conflict	.843 n=40	.906 n=43	.925 n=17
Help—All subscales	.947 n=43	.939 n=42	.902 n=11
Help-Aid	.938 n=64	.939 n=56	.933 n=18
Help-Protection from Victimization	.951 n=69	.975 n=48	.859 n=15
Help-Guidance*	--	--	--
Security—All subscales	.886 n=45	.784 n=45	.749 n=15
Security-Transcending Problems	.930 n=48	.965 n=53	.790 n=16
Security-Reliable Alliance	.852 n=125	.841 n=98	.848 n=76
Closeness—All subscales	.760 n=138	.657 n=93	.558 n=45
Closeness-Affective Bond**	--	--	--
Closeness-Reflected Appraisal	.669 n=139	.445 n=93	.487 n=46

*No items were chosen from this subscale for the FQCS

**Only one item was chosen from this subscale, making it insufficient to compute Cronbach's alpha.

Only 75 of 172 respondents in Year One met minimum criteria—75% of data not missing—to calculate an average score. Frequency tables were run to determine which questions were often answerable and which were not. Ultimately, based on the results of these frequencies, 16 questions of the FQB were dropped from analysis. Together, they comprised all of the Conflict subscale, all of the Help subscale, and 2/3 of the Security subscale, as well as one question from Companionship. From this, we can conclude that these particular elements of friendship, as written as questions on the FQS, were not identifiable with the SFI. With these questions dropped, it became possible to attain average scores for 157 of the 172 respondents (91%) with at least 75% of the FQCS items not missing.

On the FQB, the subscale of Companionship went from six items to five and Security went from six items to two, and as a result, the alphas for these subscales changed. Neither the Balance (four items) nor Closeness (three items) subscales were affected, and both the Conflict and Help subscales were dropped completely. In total, dropping questions due to low response caused the FQB to decrease from 30 items to 14, and the FQCS to decrease from 37 items to 21, though the final, universal question of the FQGR was still considered separate from the rest and not included in these alphas. These new alpha values, along with the alphas that did not change from before, appear as a final list of scores in Table 4. Additionally, a table of means of all of the main anxiety and friendship variables, by year, was created (Table 5).

Table 4: Alpha Scores for the Final Version of the FQCS

Scale	Y1	Y2	Y3
FQCS Total	.908 n=116	.826 n=76	.878 n=39
FQB	.849 n=116	.768 n=76	.829 n=39
Companionship	.727 n=142	.724 n=119	.707 n=75
Balance	.914 n=154	.940 n=129	.920 n=86
Security	.704 n=139	.660 n=104	.695 n=82
Closeness	.760 n=138	.657 n=93	.558 n=45
FQGR	.821 n=162	.589 n=132	.767 n=98

Table 5: Means by Age for Each Friendship and Anxiety Variable

Variable	Age 5	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 12
FQCS	Mean: 80.5 SD: 2.08 Range: 5 N: 4	Mean: 77.18 SD: 11.08 Range: 39 N: 15	Mean: 79.06 SD: 13.37 Range: 49.53 N: 22	Mean: 82.24 SD: 12.60 Range: 42.35 N: 36	Mean: 82.03 SD: 12.80 Range: 44.21 N: 31	Mean: 84.49 SD: 10.43 Range: 34 N: 16	Mean: 86.18 SD: 12.90 Range: 41 N: 16	Mean: 84.89 SD: 11.48 Range: 21.33 N: 3
FQB	Mean: 55.5 SD: 1.73 Range: 4 N: 4	Mean: 55.42 SD: 8.47 Range: 30 N: 14	Mean: 55.71 SD: 9.66 Range: 32.38 N: 22	Mean: 58.47 SD: 8.31 Range: 26.73 N: 36	Mean: 57.23 SD: 9.06 Range: 31.23 N: 31	Mean: 59.46 SD: 7.11 Range: 21 N: 16	Mean: 60.27 SD: 9.37 Range: 30 N: 16	Mean: 60.30 SD: 7.61 Range: 14.17 N: 3
FQGR	Mean: 28.5 SD: 3.51 Range: 7 N: 4	Mean: 25.33 SD: 3.74 Range: 11 N: 15	Mean: 26.96 SD: 5.10 Range: 21 N: 23	Mean: 27.24 SD: 5.71 Range: 18 N: 37	Mean: 28.71 SD: 5.13 Range: 18 N: 31	Mean: 28.81 SD: 5.15 Range: 20 N: 16	Mean: 29.81 SD: 5.17 Range: 16 N: 16	Mean: 28.33 SD: 4.93 Range: 9 N: 3
MASC Tot	Mean: 69 SD: -- Range: -- N: 1	Mean: 45.70 SD: 20.27 Range: 58 N: 7	Mean: 52.95 SD: 16.24 Range: 57 N: 19	Mean: 51.12 SD: 16.57 Range: 65 N: 39	Mean: 48.90 SD: 15.03 Range: 60 N: 34	Mean: 52.67 SD: 16.99 Range: 62.32 N: 16	Mean: 43.85 SD: 13.63 Range: 46 N: 16	Mean: 32.50 SD: 14.85 Range: 21 N: 2
MASC Soc	Mean: 10 SD: -- Range: -- N: 1	Mean: 8.21 SD: 5.76 Range: 16.5 N: 7	Mean: 9 SD: 5.46 Range: 18 N: 19	Mean: 9.69 SD: 5.14 Range: 21 N: 39	Mean: 9.28 SD: 4.99 Range: 20 N: 34	Mean: 13.38 SD: 5.12 Range: 18 N: 16	Mean: 7.56 SD: 4.91 Range: 16 N: 16	Mean: 6.00 SD: 2.83 Range: 4 N: 2
MASC Sep	Mean: 15 SD: -- Range: -- N: 1	Mean: 10.82 SD: 6.98 Range: 18 N: 7	Mean: 11.79 SD: 4.13 Range: 14 N: 19	Mean: 11.04 SD: 5.54 Range: 19 N: 39	Mean: 9.52 SD: 4.74 Range: 18 N: 34	Mean: 9.50 SD: 6.45 Range: 21 N: 16	Mean: 7.75 SD: 3.77 Range: 12 N: 16	Mean: 2.00 SD: 1.41 Range: 2 N: 2
MASC Phys	Mean: 26 SD: -- Range: -- N: 1	Mean: 11.4 SD: 8.3 Range: 21 N: 6	Mean: 13.37 SD: 5.94 Range: 17 N: 19	Mean: 13.33 SD: 7.20 Range: 32 N: 39	Mean: 11.53 SD: 5.56 Range: 20 N: 34	Mean: 10.50 SD: 6.40 Range: 24 N: 16	Mean: 10.63 SD: 5.90 Range: 18 N: 16	Mean: 9.50 SD: 9.19 Range: 13 N: 2
MASC HA	Mean: 18 SD: Range: N: 1	Mean: 15.14 SD: 4.95 Range: 15 N: 7	Mean: 18.53 SD: 4.56 Range: 19 N: 19	Mean: 17.06 SD: 3.51 Range: 12 N: 39	Mean: 18.61 SD: 4.48 Range: 17 N: 34	Mean: 19.33 SD: 3.50 Range: 12.75 N: 16	Mean: 18.02 SD: 2.77 Range: 9 N: 16	Mean: 15.00 SD: 7.07 Range: 10 N: 2
ADIS SoP	Mean: 0 SD: -- Range: -- N: 1	Mean: 3.00 SD: 0 Range: 0 N: 2	Mean: 3.67 SD: 1.52 Range: 3 N: 3	Mean: 3.71 SD: .756 Range: 2 N: 7	Mean: 1.20 SD: 2.17 Range: 5 N: 5	Mean: 3.25 SD: 2.36 Range: 5 N: 4	Mean: .50 SD: .71 Range: 1 N: 2	Mean: 4.00 SD: 0 Range: 0 N: 2
ADIS SAD	Mean: 5 SD: -- Range: -- N: 1	Mean: 3.00 SD: 1.41 Range: 2 N: 2	Mean: 2.00 SD: 2.00 Range: 4 N: 3	Mean: 1.86 SD: 2.34 Range: 5 N: 7	Mean: 2.80 SD: 2.59 Range: 5 N: 5	Mean: .25 SD: .50 Range: 1 N: 4	Mean: 3.00 SD: 0 Range: N: 2	Mean: 0 SD: 0 Range: 0 N: 2
ADIS GAD	Mean: 0 SD: -- Range: -- N: 1	Mean: 1.50 SD: .71 Range: 1 N: 2	Mean: 2.00 SD: 2.65 Range: 5 N: 3	Mean: 2.00 SD: 2 Range: 5 N: 7	Mean: 2.20 SD: 2.28 Range: 5 N: 5	Mean: 2.00 SD: 2.45 Range: 5 N: 4	Mean: 2.00 SD: 2.83 Range: 4 N: 2	Mean: 2.00 SD: 2.83 Range: 4 N: 2

Next were tests of Interrater Reliability between the coders and double coders of the data.

This analysis was done by taking the mean scores for the items and comparing those of Rater

One to those of Rater Two, using Intraclass Correlation (ICC). An overall score was produced, as well as scores for FQB and FQGR. The results of these analyses are in Table 6.

Table 6: ICC for First and Second Coder for the FQCS

	FQCS Total	FQB	FQGR
Year 1	0.772	0.629	0.845
Year 2	0.627	0.610	0.611
Year 3	0.827	0.695	0.868

Next, to test the reliability of the FQCS with other measures of friendship, correlations were run with social network data, specifically indegrees and outdegrees. These scores were, to date, the only friendship analyses completed on this scale and thus the only existing data for this set regarding that construct. Nominations were available for Year One only, and for most, but not all, of the participants (n=121). Also available were scores for Reciprocation, whether the named best friend reciprocated the friendship by naming the child as a best friend at the time of interview. Spearman's Rho was calculated between Indegrees, Outdegrees and Reciprocation and FQCS Total, FQB and FQGR. Though the correlations for Indegrees were low, the correlations with both the FQCS Total and FQGR were significant (Table 7). None of the correlations with Outdegrees or Reciprocation were significant.

Table 7: Rhos of Correlations between FQCSs and Indegrees, Year 1

	FQCS Total	FQB	FQGR
Indegrees	.192 p=.040*	.157 p=.093	.194 p=.037*

Rho was calculated for each element of friendship (Companionship, Balance, etc.) that was represented in the overall score, to determine whether any individual element correlated with Indegrees or Outdegrees (Table 8). Conflict and Help were excluded from analyses due to their low response rates. Only Security produced significant findings with Indegrees. The scores for Outdegrees and Reciprocation of the best friend did not correlate significantly with any part of the FQCS.

Table 8; Rhos of Correlations between FQB Scales and Social Nominations, Year 1

	Companion-ship	Balance	Security	Closeness
Indegrees	.074 p=.438	.119 p=.206	.188 p=.045*	.115 p=.221

Rhos were calculated between these nomination scores and the summative questions from the FQGR, including the final Universal rating of friendship. Some significant results were found with both Indegrees and Reciprocation, though no significant correlations were found with Outdegrees. The results are in Table 9.

Table 9: Rhos of Correlations between FQGR Subscales, Year 1

	Companion-ship	Balance	Security	Closeness	Universal
Indegrees	.076 p=.413	.017 p=.860	.141 p=.131	0.184 p=.047*	0.181 p=.051
BF Recipro- cation	.041 p=.658	.076 p=.414	.086 p=.357	.197 p=.033*	.195 p=.035*

To examine internal reliability, the average scores for FQB were run in a correlation with the average scores for FQGR. Additionally, the average score for each subscale of the FQB was run against the corresponding question from the FQGR. Finally, the average for the FQCS Total was correlated with the Universal rating of friendship from the FQGR. The results of these correlations appear below (Table 10).

Table 10: Correlations between the FQB, FQB Subscales and FQGR

	FQB with FQGR	Companion-ship	Balance	Conflict	Help	Security	Closeness	FQCS Total with Universal
Year One	0.812 p<.01	0.725 p<.01	0.826 p<.01	0.728 p<.01	0.741 p<.01	0.633 p<.01	0.706 p<.01	0.805 p<.01
Year Two	0.576 p<.01	0.512 p<.01	0.874 p<.01	0.825 p<.01	0.731 p<.01	0.604 p<.01	0.554 p<.01	0.663 p<.01
Year Three	0.543 p<.01	0.406 p<.01	0.706 p<.01	0.740 p<.01	0.580 p<.01	0.500 p<.01	0.323 p<.01	0.753 p<.01

To establish test-retest reliability, Intraclass Correlation was used to look at the friendship scores from Year One to Year Two and Year Two to Year Three. These were calculated for the FQCS Total score, FQB and FQGR, and did not produce adequate correlations. The results appear in Table 11.

Table 11: ICC of Scores across Time

	FQCS Total	FQB	FQGR
Year One to Year Two	.142	.115	.201
Year Two to Year Three	.017	-0.05	.042
Year One to Year Three	.212	.132	.235

Test-retest reliability correlations of friendship ratings were run again, restricting analysis to those individuals who had chosen the same best friendship all three years, which was set as a simple yes/no variable. The results of these analyses did not meet the critical cutoff points for strong correlations (Table 12).

Table 12: ICC of Scores across Time, Same Best Friend

	FQCS Total	FQB	FQGR
Year One to Year Two	.020	.136	.082
Year Two to Year Three	.120	.179	-.055
Year One to Year Three	.222	.210	.142

Further analyses were conducted targeting the participants whose best friend was not the same all three years (Table 13). The resulting correlations did not support evidence a relationship.

Table 13: ICC of Scores across Time, Different Best Friend

	FQCS Total	FQB	FQGR
Year One to Year Two	-.020	-.048	.072
Year Two to Year Three	-.029	-.092	.101
Year One to Year Three	.271	.113	.368

When running a crosstab with friends reciprocated by friends all three years, about half of those BF's (that later went on to be named every year) at time point one were reciprocated, compared to the one third of BF's (that were NOT named later) being reciprocated (Table 14).

Table 14: Crosstab, Friends Reciprocated by Friends All Three Years

	Best friend did not reciprocate at T1	Best friend reciprocated at T1	Total
Different across the three years	43	13	56
Same best friend all three years	6	7	13

The chi square value was 4.81 ($p < .05$, $df=1$), showing that the students with the same best friend across three years of the study were more likely to have a reciprocated best friend at year 1.

Finally, age differences were checked for significant differences which might affect the overall study results. Correlations were run between age and FQCS scores (Table 15). Low correlations were found between age and the FQB, FQGR and FQCS Total scores. Significance for these correlations were all $p < .05$. This indicates that, as age increased among participants in the study, friendship scores tended to increase slightly as well.

Table 15: Rhos of Correlations Between Age and FQCS Scores, Year 1

	Age
FQB	.0165 $p = .039$
FQGR	.245 $p = .002$
FQCS	.197 $p = .013$

Aim 2: Multi-Level Models

All three years of data were combined into one long form dataset. In addition to the friendship quality ratings, ratings of anxiety from the MASC and ADIS were checked, cleaned, and added. Correlations were run to examine the relationship between the friendship and anxiety variables at Year One (Table 16). None were significant.

Table 16: Correlations of Friendship and Anxiety, Year 1

Variable	FQB	FQGR	FQCS Total
Total Anxiety (ADIS)	.013 p=.873	-.134 p=.088	-.017 p=.828
Social Phobia (ADIS)	-.149 p=.401	-.227 p=.183	-.191 p=.280
Separation Anxiety (ADIS)	.032 p=.856	-.023 p=.896	.031 p=.860
Generalized Anxiety Disorder (ADIS)	-.240 p=.172	.025 p=.887	-.198 p=.261
Total Anxiety (MASC)	-.112 p=.188	-.059 p=.480	-.110 p=.195
Physical Symptoms (MASC)	-.017 p=.838	-.001 p=.993	-.021 p=.804
Social Anxiety (MASC)	-.161 p=.057	-.102 p=.222	-.158 p=.061
Separation/Panic (MASC)	-.123 p=.147	-.133 p=.111	-.132 p=.119
Harm Avoidance (MASC)	.063 p=.459	.153 p=.067	.080 p=.348

To analyze friendship over time nested within an individual, a series of multilevel models using the Hierarchical Linear Modeling (HLM) program were constructed. This program offers dynamic analyses with the ability to simultaneously test the omnibus effect of anxiety, the time-covarying effect of anxiety, the anxiety by slope interaction over the three years of the study, and the main effect of child age on friendship quality, while controlling for child gender, family income, and parent education. Thus, these models are able to test the ways that anxiety might affect friendship quality all in one model, while simultaneously controlling for the others. The time-varying covariate of anxiety was group-mean centered, while the other variables were grand-mean centered. Both a random slope and intercept were modeled.

As an overall analysis, a series of HLMs were run with the different friendship variables (FQCS, FQB and FQGR) and a variable of anxiety which indicated whether the child met clinical levels of anxiety on the ADIS or not. There were no significant relationships in the models with FQCS or FQB and any of the predictor variables, but there was a significant negative relationship between clinical status and FQGR ($\beta=-1.66$, $p=.041$). This indicates that

being in the group of participants who meet the criteria for anxiety disorders in this study is associated with overall lower scores of friendship as measured by the FQGR than being in the typically developing group.

Multi-Level Models with the MASC

The MASC was a measure of anxiety given to all children in the study, whether they met criteria for anxiety as measured by the ADIS or not. However, because children with anxiety disorders were selected for having anxiety (non-random selection) whereas the children without anxiety disorders were invited to participate irrespective of their characteristics, for the purposes of this study models based on the MASC were restricted to those participants who did not have anxiety disorders, as measured by the ADIS.

For the models with anxiety as measured by the MASC total score, significant results were found when friendship was measured by the FQB and the FQCS Total (Table 17). These models indicate that, averaged across the three years of the study, there is a small but significant association between anxiety overall, as measured by the MASC and the variables of friendship. The only other significant finding with the MASC total score was that gender was a significant in the models with FQGR. Being male was associated with less friendship quality in this model.

Table 17: Testing the Within and Between Person Effects of Anxiety (MASC) with Friendship

Variable	FQB				FQCS Total			
	β	SE	t	p	β	SE	t	p
Fixed Effects								
Intercept	59.20	0.47	126.28	<.001	88.14	0.71	124.75	<.001
Gender	-0.40	0.92	-0.44	0.662	-1.90	1.39	-1.37	0.174
Income	-0.16	0.23	-0.70	0.489	-0.02	0.35	-0.07	0.946
Parent Education	-0.35	0.46	-0.75	0.457	-0.18	0.67	-0.27	0.788
Anxiety	-0.08	0.03	-2.26	0.025	-0.11	0.05	-2.07	0.041
Slope								
Intercept	0.91	0.65	1.41	0.161	1.59	0.90	1.78	0.078
Anxiety	0.05	0.04	1.03	0.301	0.07	0.06	1.13	0.262
Time-Varying Anxiety	0.01	0.06	0.15	0.885	0.04	0.08	0.48	0.631

The MASC subscale of Social Anxiety was found to have significant main effects when run with the FQCS Total Score, the FQB and the FQGR as predictor variables (Table 18). From these results, it is demonstrated that, averaged across the three years, Social Anxiety as measured by the MASC is correlated with Friendship Quality when controlling for age, gender, household income and parental education level. The slope for age is significant when Social Anxiety is in the model with the FQGR or FQCS Total scales, meaning that children report higher quality friendships the older they get. However, this was not found to be the case with the FQB scale. Additionally, the effect for gender was significant in the model with friendship as measured by the FQGR. As in the model of MASC total score and FQGR, being male was associated with less friendship quality.

Table 18: Testing the Within Person Effect of Social Anxiety (MASC) with Friendship

Variable	FQB				FQGR				FQCS Total			
	β	SE	t	p	β	SE	t	p	β	SE	t	p
Fixed Effects												
Intercept	59.17	0.46	127.28	<.001	28.96	0.28	103.61	<.001	88.10	0.70	125.41	<.001
Gender	-0.49	0.90	-0.54	0.590	-1.74	0.55	-3.15	0.002	-2.01	1.36	-1.47	0.144
Income	-0.20	0.23	-0.87	0.386	0.07	0.15	0.45	0.656	-0.08	0.34	-0.24	0.808
Parent Ed	-0.26	0.46	-0.57	0.570	0.18	0.25	0.72	0.475	-0.05	0.66	-0.07	0.941
Anxiety	-0.29	0.11	-2.73	0.007	-0.13	0.06	-2.11	0.037	-0.42	0.16	-2.67	0.009
Slope												
Intercept	1.02	0.61	1.68	0.096	0.71	0.30	2.40	0.018	1.71	0.84	2.02	0.045
Anxiety	0.14	0.14	1.02	0.311	0.04	0.08	0.46	0.649	0.18	0.20	0.91	0.365
Time-Var Anx	-0.04	0.17	-0.22	0.825	0.06	0.09	0.66	0.511	-0.002	0.25	-0.01	0.993

The MASC subscale of Harm Avoidance produced significant time-varying covariates when entered as a predictor to the FQCS, FQB and FQGR (Table 19). This means that, within a person, in years when students were higher in anxiety, friendship quality was correspondingly lower. As with the other models using MASC as a measure of anxiety, gender was found to have a relationship with friendship, where being male was associated with lower friendship, but only with the FQGR. There were no other significant findings for these models.

Table 19: Testing the Within Person Effect of Harm Avoidance (MASC) with Friendship

Variable	FQB				FQGR				FQCS Total			
	β	SE	t	p	β	SE	t	p	β	SE	t	p
Fixed Effects												
Intercept	59.24	0.48	124.36	<.001	29.00	0.28	103.34	<.001	88.17	0.72	122.98	<.001
Gender	-0.13	0.96	-0.14	0.893	-1.56	0.57	-2.73	0.007	-1.41	1.43	-0.99	0.325
Income	-0.08	0.22	-0.37	0.713	0.13	0.15	0.88	0.379	0.10	0.34	0.29	0.775
Parent Ed	-0.21	0.46	-0.47	0.641	0.22	0.25	0.89	0.378	0.05	0.66	0.07	0.944
Anxiety	-0.03	0.15	-0.18	0.858	0.03	0.09	0.39	0.697	0.01	0.22	0.04	0.971
Slope												
Intercept	1.04	0.63	1.65	0.101	0.66	0.31	2.14	0.034	1.62	0.88	1.83	0.070
Anxiety	0.27	0.20	1.37	0.172	0.05	0.08	0.66	0.509	0.33	0.26	1.27	0.205
Time-Var Anx	0.44	0.17	2.62	0.010	0.35	0.09	3.99	<.001	0.83	0.23	3.52	<.001

Models of the other subscales of the MASC, Physical Symptoms and Separation/Panic, with the FQCS Total, FQB and FQGR variables did not have significant main effects or interactions.

Multi-Level Models with ADIS

A series of models were tested with friendship predicted by anxiety as measured by the ADIS within the treatment-referred group, specifically looking at the individual severity scores for each anxiety diagnosis. Social Phobia severity scores on the ADIS produced significant time-varying covariates when entered as a predictor to the FQB, FQGR and FQCS (Table 20). In years when treatment-referred children had higher social phobia severity scores, their friendship quality scores tended to be lower than in years when these children had lower social phobia severity scores.

Table 20: Testing the Within Person Effect of Social Phobia (ADIS) with Friendship

Variable	FQB				FQGR				FQCS Total			
	β	SE	t	p	β	SE	t	p	β	SE	t	p
Fixed Effects												
Intercept	59.89	1.28	46.85	<.001	27.82	0.68	41.05	<.001	87.68	1.91	45.82	<.001
Gender	4.76	2.72	1.75	0.088	1.16	1.52	0.76	0.450	5.54	4.21	1.32	0.196
Income	0.83	1.06	0.79	0.437	0.65	0.57	1.14	0.263	1.31	1.52	0.86	0.395
Parent Ed	2.72	3.35	0.81	0.421	1.34	1.83	0.73	0.471	2.99	4.96	0.60	0.551
Anxiety	-0.48	1.01	-0.48	0.635	-0.46	0.50	-0.92	0.363	-0.24	1.42	-0.17	0.864
Slope												
Intercept	0.75	0.68	1.11	0.273	0.60	0.41	1.46	0.151	1.53	1.05	1.46	0.153
Anxiety	-0.68	0.55	-1.24	0.221	-0.26	0.33	-0.76	0.453	-1.15	0.81	-1.43	0.161
Time-Var Anx	-2.62	0.95	-2.76	0.009	-0.84	0.39	-2.17	0.036	-3.98	1.24	-3.22	0.002

Models were tested with the overall ADIS score and the remaining subscales of the ADIS (Separation Anxiety and Generalized Anxiety Disorder) with the friendship variables. The majority of these models did not produce any significant outcomes. The one exception was an interaction with time found between FQB and Generalized Anxiety Disorder ($\beta=-1.19$, $p=.024$). This suggests that symptoms of Generalized Anxiety Disorder have a more negative impact on Friendship Quality when children are older than when they are younger.

Aim 3: Qualitative Analysis

To understand the participants, first their background was considered. Comprising this sample were two females in second grade, one designated as typically developing and one with anxiety, and two males in third grade, also with one designated as typically developing and one with anxiety. The decision to choose two males and two females was not made lightly; participants had to meet certain criteria for inclusion. Finding a male with anxiety with all three years of data completed proved to be the most difficult—only three participants met this standard, and of them one was randomly chosen using a random number generator, then the comparison participant was randomly selected from the dataset of individuals not diagnosed with anxiety, matching for age.

Each of these participants chose a different friend each year to discuss as their best friend, with the exception of one of the children with anxiety, who chose to discuss the same person in the second and third year of the study. Demographically, the students were similar. Each of the students' primary language was English, and three of the four were of Caucasian descent, while the remaining student identified as "mixed". The parents of each of these students were together, not separated or divorced, and household incomes tended to be high, with one individual identifying an income of 60-89,999 per year, two identifying an income between 120,000-

249,999 per year, and one identifying an income of over 250,000 per year. The two children identified as having elevated levels of anxiety had different primary diagnoses, with one having a primary diagnosis of General Anxiety Disorder while the other had Social Phobia.

All Year One transcripts were read through once first, blind to status as typically developing or treatment-eligible. Once a general sense for the organization and stories the children were telling was apparent, it was possible to highlight the key themes each child was talking about. Specifically, to do this I noted in the margins when elements of friendship as identified by the FQS appeared, as well as any other activity or quality that seemed important and relevant to the friendship. Once each transcript had been read and the important details had been noted, an analytic memo was developed as a way to keep track of the themes that arose. This was simply a list of the notes from the transcript, organized in chronological order, with some sections relating to the different questions the interviewer posed. Once a memo had been completed for each one of the Year One transcripts, the data was entered into a table. It was organized such that each category that arose in the first transcript was given a row, with the examples from that transcript listed under the ID for that subject. In the next column, examples of these same categories were filled in, as appropriate, for the next ID, and new rows were created for new categories this ID introduced. This continued for all four IDs, so that at the end the table contained the categories, with examples, for every aspect of friendship addressed in the interviews.

Once all of the data was organized into the table, it was easy to see where themes overlapped. Language defining the more common themes was reconsidered to most precisely reflect the theme while encompassing as many different stories as were relevant, and clear definitions for themes were created to minimize overlap between similar-sounding themes, such

as Companionship and Activities. It was also apparent that some of the elements of friendship as identified in the SFI were present in these discussions of friendship as well, so some themes were renamed to reflect this, where appropriate. Less commonly-appearing themes were eliminated, unless they were discussed in rich detail or at great length. An example of such a theme that was included despite low frequency was the theme of Nice, which was only mentioned by two of the participants, but was discussed by one in such detail and with such emphasis that it was obviously necessary to include it as a theme. Any issues that arose and conflicts between themes were noted on the memo and, as other themes were refined and established, these conflicts were resolved, resulting in a finalized list of themes. The order in which themes were combined or added were noted in a list, in case changes needed to be undone. This final list, with definitions and samples of each is detailed in Table 21. Those codes which correspond directly to the elements of friendship from the FQS are denoted by the use of italics.

Table 21: List of themes and examples from qualitative analysis, Year 1

Category	Definition	Examples from Year One
Nice	Mentions that the friend is nice or mentions nice things the friend does.	"She's nice." "She's nice to me and stops when I tell her to."
Same	Discusses how the friend is the same or similar.	"...we like to do the same things like skateboard and swim and stuff."
Different	How the friends are different from each other, including conflict	"...the only thing that's not in common is that I don't eat meat and A. does."
<i>Companionship</i>	Spending time together	"...fun to hang out with" "...we always do everything together"
Friends for a while	Discussing how long they've been friends.	"His mom was in the room when I was born." "I don't really even realize like we knew each other for a long time and we would always play around and talk to each other."
Sleepovers	Whether the friends had sleepovers	"...he's had a sleepover a lot of times at my house"
Trust	Mention trust in the friend A part of Security	"I feel like safe with them because I've known them for like life so that's why I feel so like secure..."
Activities	Examples of the games they play, including technology, talking, etc.	"Watch TV." "But we still hang out. We both kind of like just get bored and swim and stuff."
Different ages	Discussion of the friend's age, note that they are different ages	"We're like best friends and he's like a different age. He's like fifteen."
<i>Closeness</i>	Feels special Like Family Positive feelings/admiration towards friend	"I treat his mom, Freddie, like my second mother." "...I feel really close to him..."
<i>Help</i>	The friend helps the child, or they help each other	"I was crying because I didn't want my mommy to leave but she was going to leave, and then A. came up to me and said she would play with me."

Once that final list was established, all of the transcripts of interviews from Year One were re-read and coded again with this stable list of themes. Years Two and Three were coded for these themes as well. In doing so, it became obvious that some categories needed further refinement. First, the category of Talk was added back in as a separate designation, no longer under Activities. Talk had been mentioned in two transcripts in the first year, but not at great length or in detail, and so it had been combined with the existing category of Activities due to the reasoning that it was an activity the friendship pair engaged in. After reading the rest of the transcripts, however, it became clear that it was a specific activity many of the friend pairs engaged in, and was deserving of its own attention. It was separate from regular Activities in that

the talking was usually meaningful, about something important to the friend pair, and evidence of their friendship that they could have these real conversations. Additionally, Admire, as a category, was delineated from Closeness. This had been done in an earlier iteration of the coding, however these categories were collapsed after reading the year one transcripts due to not much discussion of admiration. However, after reading the later transcripts, it was found the Admiration actually came up with more frequency in these later years, and so it was decided to add it back in as its own code. Finally, Conflict was created as a separate category to Different. As more transcripts were read, it was determined that there was a real feeling of conflict between some of the friendship pairs, more than just noting differences among their friends. In several instances, children told stories about overcoming conflict with their friends, and so a separate category was needed to note this.

Ultimately, it was also decided to eliminate the codes of Friends for a While and Sleepovers. Both of these were responses to direct questions from the interviewers—the children did not tend to spontaneously state that they had sleepovers or had been friends with the best friend for a long time unless asked specifically by the interviewer. Additionally, the answers given by the children remained very similar across years and participants—all children had been friends with their best friend, even when discussing a different friend than the year before, for quite some time, and all children reported sleepovers with their best friends. Finally, if the stories children told about the length of the friendship or sleepovers contained details relating to another code, for example telling stories about how the length of the friendship made them feel close to their friend, or what games they played on a sleepover, then this information was noted under the other relevant code and so a separate code for sleepovers was not necessary.

The only friendship element from the FQS that does not appear in the final coding scheme is Balance. While it is likely that the children in the friendships experienced this construct, the way the SFI was conducted it was not necessarily discussed and so not picked up by the coding scheme. The things the SFI did address, such as activities done together and feelings about the best friend, yielded many responses on these topics and other friendship qualities relating to the FQS.

As it was the intent of this analysis to pick up on differences across the category of anxious or typically developing, once all three years transcripts had been coded for each child, summary tables were produced for each category. They appear below, with the sample of children with anxiety shown in Table 22 and those without anxiety in Table 23 It is important to note that, at year one, one of the children without anxiety chose to talk about two best friends. This also happened in year two, with one of the children with anxiety. They were discussed as one, however, so their data was included for analysis as if the child had been describing one friend. Companion bar graphs were created to enable comparison between the different themes across different years.

Table 22: List of Themes, Examples, and the Number of Times Each Appeared, Children with Anxiety

	Y1 Count	Y1 Examples	Y2 Count	Y2 Examples	Y3 Count	Y3 Examples
Nice	1	"She's nice"	2	"She's nice."	0	--
Same	3	...he's kind of, like, a scaredy cat, like me."	2	"We have a lot in common."	0	--
Different	1	Describes wanting to watch different movies	0	--	1	"He's, like, a different age."
Companionship	2	"We still hang out."	3	"I get to live with her"	2	"We're just, like, kind of hanging out."
Trust	3	"I feel, like, safe with them because I've know them for, like, life."	3	"I see her almost every day so I'm comfortable with her"	4	Describes the security features of his friend's house and how he feels safe there.
Activities	6	"We...get bored and swim and stuff."	8	"We get to play"	7	"She's fun to play with and I play with almost every day"
Closeness	4	"I treat his mom, Freddie, like my second mother."	2	"We know a lot about each other."	7	"We're close"
Help	0	--	1	"Helpful, very helpful, and they care about people..."	1	"If he fell off a cliff...I would grab his other arm and pull him up."
Talk	1	"We like to hang out and talk about movies and stuff."	0	--	1	"She's fun to talk to and play with."
Admire	1	[describing him] "Cool."	0	--	0	--
Conflict	1	Insinuates friend is annoying	0	--	5	"Sometimes, since we're close, we get into fights."

Figure 1: Frequencies of Themes in Children with Anxiety

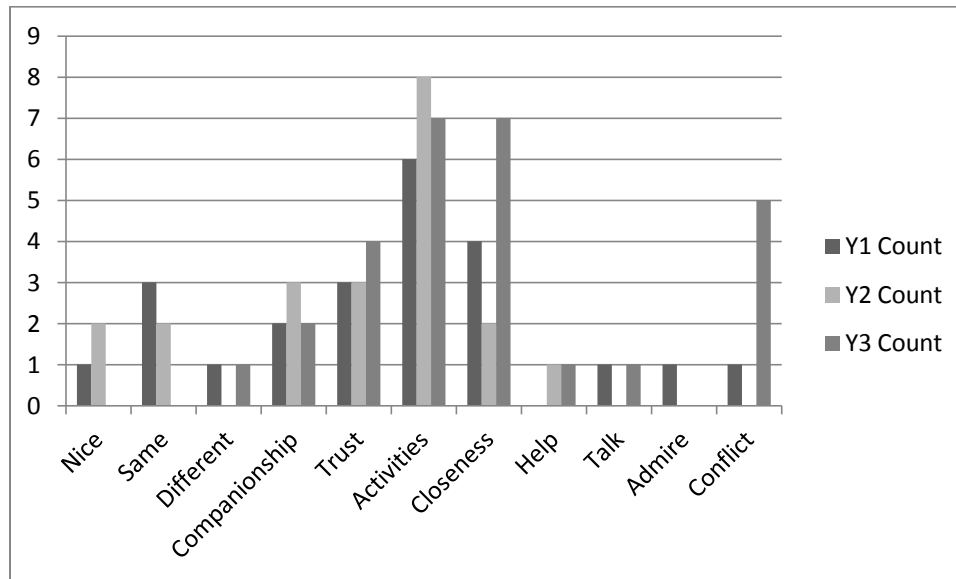
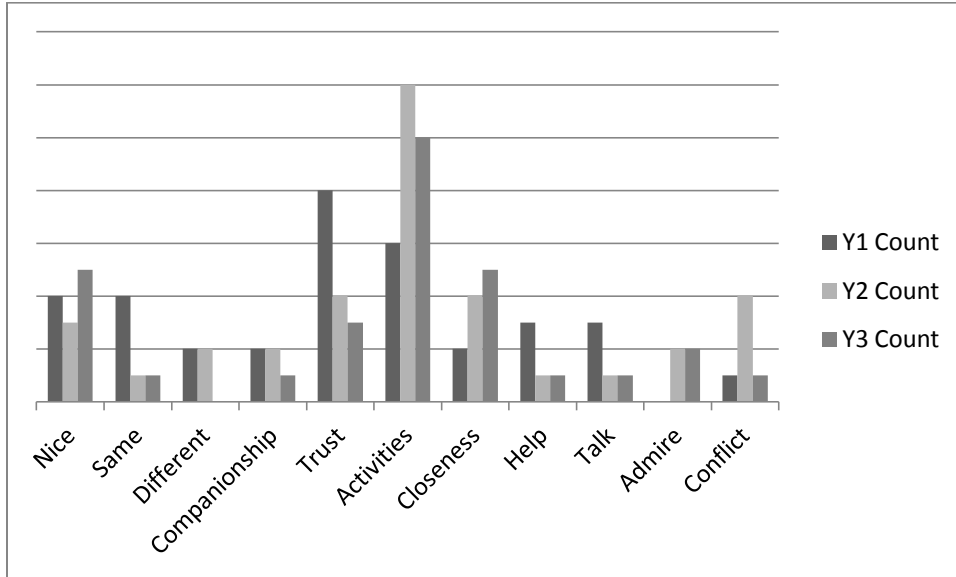


Table 23: List of Themes, Examples, and the Number of Times Each Appeared, Children Without Anxiety

	Y1 Count	Y1 Examples	Y2 Count	Y2 Examples	Y3 Count	Y3 Examples
Nice	4	"She's really nice"	3	"He never puts me down."	5	"She's really nice."
Same	4	"She watches the Backyardigans and so do I"	1	"He likes everything I do..."	1	"We have the same interests."
Different	2	"I don't eat meat and A. does."	2	"...he likes this really scary movie...which is too scary for me."	0	--
Companionship	2	"We always do everything together."	2	"We do lots of things together."	1	"We see each other a lot."
Trust	8	"We don't ever tell on each other."	4	"If someone's talking behind my back, he will tell me."	3	"We tell each other things that we've never told anyone else before."
Activities	6	"Go adventuring in the tropical jungle"	12	"We make up a story together."	10	"We play this game called the comedy game where we try to make each other laugh."
Closeness	2	"...best best friend"	4	"We like to talk about plush toys which we call 'PT' so nobody knows what it stands for..."	5	"I feel comfortable with her because sometimes she blames me on doing gross stuff and I say, 'I did not do that!'"
Help	3	"I was crying because I didn't want my mommy to leave...and then A. came up to me and said she would play with me."	1	"...whenever I disagree with someone, he's never on the other person's side."	1	"We kept talking and I kind of, like, pulled her across the bridge."
Talk	3	"...we would always play around and talk to each other."	1	"We talk about people who we think are kinda weird."	1	"We'll talk about bathroom stuff."
Admire	0	--	2	"He's nice and smart"	2	"She has a beautiful voice. I admire that."
Conflict	1	"...once she was pulling on me and I was trying to get her to stop"	4	"At one point he was envious of me because I had, like, stuffed toys."	1	"It's a little annoying, but she does it in a funny way."

Figure 2: Frequencies of Themes in Children without Anxiety



As can be seen in these figures, each year in these interviews of friendship children tended to mention most often the Activities that they engaged in with their best friend, regardless of whether they were identified with anxiety (21 times) or not (28 times). The one exception to this was in the first year of the sample with children who were not identified with anxiety, where behaviors related to Trust were mentioned the most often and Activities were second. Examples of comments about Activities included naming specific games the pair played (“adventuring in the tropical jungle,” “soccer”), descriptions of activities in response to specific questions from the interviewer about sleepovers, where the children very often described playing games, watching movies and staying up late, and also general statements about play made by the child (“I play with her almost every day.”) This element of Activities is most similar to the element of “Companionship” from the FQS, which on that instrument included questions regarding playing together at recess, spending free time together and doing things together. It was decided to maintain the two separate codes for this element, delineating the more specific play activities and games into Activities and maintaining Companionship as time spent together, such as hanging

out” or “sitting together.” It was hoped that this would bring more nuance to the analyses of these transcripts in this instance, as well as offer an opportunity to look at the different activities that the children engaged in, as opposed to merely noting that they played together.

There are several possible explanations for Activities being the most common topic discussed by all children, regardless of anxiety status, chief among them that the activities that you do with your best friend are what first come to mind when you think about him or her. Play is a natural part of friend relationships, especially in children of elementary-school age, and with younger children it is chief among the expectations of children for their best friendships (Bigelow, 1977). As they age, meaningful conversations, loyalty, genuineness, or even romantic potential come into play as important in friendships, but especially at young ages children rely on engaging in fun together to cement their relationships.

Activities may also have been mentioned at this high rate due to the nature of the questions asked as a part of the SFI. Though children were free to discuss anything related to their best friendship, the questions of the SFI related largely to the ways in which time was spent between friends. Children were asked what they and their friend liked to do together, how they met, whether they had sleepovers and shared secrets. For children, this is time often spent in play, and so it is not surprising to find that children refer to this most often when talking about spending time with their best friend.

The second-most commonly appearing element of friendship in the sample of children with anxiety was Closeness, with 13 mentions. This was defined as behaviors from the friend that made the child feel special, like they were family, or otherwise unique and treasured by the friend. The prevalence of this element was due in large part to one of the participants for whom this characteristic seemed quite important. This child, across all three years, emphasized

closeness and feeling like family as significant characteristics of a best friendship, even though he discussed three different friends over the course of the three years. Still, Closeness is something which was mentioned at a high rate in the sample of children without anxiety as well, where it was mentioned nearly the same number of times (11), though that gave it the rank of fourth-most commonly mentioned element. This is evidence of the importance of this element in friendships across anxiety designation. Comments that were categorized under Closeness included direct mentions such as, “We’re very close,” descriptions of closeness such as, “We treat each other like brothers,” and instances of describing how the friend makes them feel special. This element aligns closely with the FQS element of Closeness, which described instances where the friend makes the child feel special or that the child knows he or she is important to their friend.

A likely explanation for the high prevalence of Closeness is the specific nature of the SFI: it was asking about best friendships. Whereas any friend is someone you are likely to have a good time with, and engage in activities, a best friend relationship is something special. It stands to reason that the defining characteristic, that which makes it different from just any friendship, is feeling especially close to your friend. And, indeed, children relayed stories about feeling like a brother to the best friend, and feeling that the friend’s family felt like his or her family, too. Other examples of Closeness included professing love for their friend, feeling completely comfortable together, and being made to feel special or sharing special activities, like a made-up language. It is also worth noting that the prevalence of Closeness among the transcripts with anxiety, specifically, may have been influenced by the stories of one particular participant, for whom closeness was quite important. Even when discussing different friends from year to year,

this child always emphasized that they were close with their best friend, and seemed to really value this quality in their friend relationships.

The second-most commonly mentioned element for children without anxiety, which was the third-most commonly mentioned element for children with anxiety, was Trust (with 15 mentions in the sample of children without anxiety, 10 in the children with anxiety). This element included descriptions of the friend's behavior being generally trustworthy, as evidenced by quotes such as, "If someone's talking behind my back, he will tell me," but also was bolstered by responses to a question directly asked by the interviewer about whether the friend pair shared secrets. Very often, the child would mention that they did and elaborate to explain a trustworthy situation or story about the friend. These responses match up most closely with the element of "Security" from the FQS, specifically the "Reliable Alliance" subscale, which includes items relating to being able to talk to a friend about anything, including things one cannot talk about with other people. It is not surprising that Trust rated so highly among both sets of respondents—trust is essential to successful relationships from business partners to two strangers sharing public space. In his review of several related articles, Rotenberg (1994) cites many findings which reiterate the same idea, that trust is inversely related to loneliness. Thus, when getting children to discuss their best friendships, as demonstrated, those friends with whom the child participates in many activities, they are not lonely and, reasonably, feel a great deal of trust.

Other elements which appeared moderately frequently and proportionally similarly across both sets of interviews are Same (5 in the sample of children with anxiety, 6 in the children not identified with anxiety), Conflict (6 mentions in each sample), and Companionship (7 in the sample of children with anxiety, 5 in the children not identified with anxiety). Same, which mentions of the ways in which the friends are similar or like the same thing, and Conflict,

descriptions of times when the friends didn't get along, are in some ways two sides of the same idea. They both allude to comparisons between the friends and conceptualization of the two friends as individuals coming together. The persistency of these elements occurring, though at a relatively low frequency, suggests that these elements are important and tend to occur equally among friendships, regardless of anxiety status. Different was also an element which received some mentions and relates to these concepts of individuality in the friendship. Different diverges from Conflict in that mentioning differences does not automatically mean there is difficulty or animosity; it may simply reflect different preferences such as "She eats meat and I don't." In contrast, Conflict was used to describe situations where the pair had had a fight, or one felt annoyed or jealous of the other, as in the questions under the Conflict subscale of the FQS.

Companionship, descriptions of time spent together without the mention of a specific activity or game, was the fourth-most mentioned element by children with anxiety. Even though it was mentioned with nearly the same frequency in the interviews with children without anxiety, because, in general, children with anxiety mentioned fewer elements in an interview, it did not rank so highly on the lists of most commonly mentioned elements by children without anxiety.

The categories Different, Help, Talk and Admire, each was mentioned with a moderate frequency in the transcripts of children without anxiety (4 or 5 mentions) and mentioned with a low frequency in the transcripts of children without anxiety (1 or 2 mentions). While this may indicate that these elements, identifying differences with the best friend, being helped by the best friend, spending time talking with the best friend, and admiring the best friend, do not or rarely occur in a best friendship according to the children with elevated levels of anxiety, it is perhaps most likely that the lower occurrence of these elements in the transcripts of children with anxiety is due to the fact that children with anxiety tended to identify fewer elements of friendship in

general and talked about them less. When viewing the results with this perspective, it is obvious that, while discussing them less, they do tend to be discussed in the same proportion to the highest frequency categories (Activities, Closeness) that the children who were not identified with anxiety discussed the same themes.

In terms of differences, the third-most commonly mentioned element of friendship in the sample of children without anxiety was a characterization of the friend as Nice (12 mentions), which was rarely mentioned by children with anxiety (3 mentions). Examples of this friendship element may have been simply stating that the friend was nice, as happened in many cases, or the telling of a story in which the friend was nice, such as making each other laugh or sharing items together. Again, this may be due to the specific predilections of one interviewee; one child who was not identified with anxiety mentioned many times over the years that her best friend was nice and told stories to emphasize the importance of this to her, even though she was describing a different friend each year. Of the elements of the FQS scale, Nice perhaps most closely relates to Companionship, in that friends must spend time together for one to perceive the other as nice, or Closeness, in that the child feels happy and supported by his or her friend. Still, there are differences between those elements and Nice, which is more of a characterization of the friend than of the relationship they have together.

Still, it is interesting that this element would appear so commonly among the transcripts of children without anxiety, while appearing quite infrequently in the transcripts of children with anxiety. A distinction, that Nice refers to the inherent characteristics of the friend as opposed to a definition of the relationship between the two people, may shed some light on this. Perhaps it is that children with anxiety value the characteristics of their friend, viewing and recognizing their autonomy and the unique characteristics that they possess unto themselves.

When asked about their friend, they describe the friend in their own terms, as opposed to in relation to themselves or the relationship between the two. Something similar happened later in the interview, when children were asked to make a wish for their best friend. In general, each child with anxiety wished for something that would benefit him or herself. As with niceness, this is framing the friend characteristic within the context of self. Children with anxiety, specifically social anxiety, spend a great deal of effort worrying about others' opinions of them. They may not spare the time to consider a friend's own personal characteristics.

Of great interest is that children with anxiety produced fewer statements which were codeable by the elements of friendship. Children with anxiety tended to give fewer responses, terser stories, and shorter interviews than children without anxiety. This can be seen when comparing the total number of statements made in each category (Table 24). This pattern generally holds true from year to year, and from child to child, so it is not that there was one particularly verbal child or year artificially bringing up the average for the group. The total number of all statements spoken by children with anxiety was 72, whereas it was 101 for children without anxiety.

Table 24: Total Number of Statements in Each Category

Element	Total # Responses children with anxiety	Total # Responses children without anxiety
Nice	3	12
Same	5	6
Different	2	4
Companionship	7	5
Trust	10	15
Activities	21	28
Closeness	13	11
Help	2	5
Talk	2	5
Admire	1	4
Conflict	6	6
Total	72	101

In looking at the number of responses over the years, it was hypothesized that there might be some difference between the groups over the years, or some overall trend in number of responses as the children aged. While years one and two had nearly the same total number of responses for each group, in year three there was an increase in responses by the individuals with anxiety and a decrease in responses in the typically developing children, rendering their total number of responses almost the same. When looking at individual categories, there were some differences from year to year (Table 25). The category Same, where children discussed how their best friend was the same as or similar to them, there was a decrease in responses for both the children with anxiety and children without anxiety from year to year, with each year producing fewer responses than the year before. Trust also experienced a decrease over the years, but only for children without anxiety; the number of responses citing trust, having trust in and sharing secrets with the best friend, tended to stay the same from year to year for children with anxiety. Activities showed the largest raw number increase, doubling responses from year one to year two for children without anxiety, but then the number of responses decreased slightly (though not to year one levels) by year three, though for children with anxiety the number of responses stayed within one point of each other across all three years. Closeness stayed about the same in years one and two and had an increase in year three for both groups. Finally, Conflict experienced a spike in responses in year two for children without anxiety and year three for those with anxiety.

Table 25: Number of Responses by Year, With and Without Anxiety

Element	Y1Anx	Y1Non	Y2Anx	Y2Non	Y3Anx	Y3Non
Nice	1	4	2	3		5
Same	3	4	2	1		1
Different	1	2		2	1	
Companionship	2	2	3	2	2	1
Trust	3	8	3	4	4	3
Activities	6	6	8	12	7	10
Closeness	4	2	2	4	7	5
Help		3	1	1	1	1
Talk	1	3		1	1	1
Admire	1			2		2
Conflict	1	1		4	5	1
Total	23	35	21	36	28	30

Finally, participants were also asked what wish they might make for their best friend. These statements did not tend to fall into the existing categories for the rest of the interview, but the responses were interesting, so these were gathered into a table for comparison (Table 26).

Table 26: Wishes for Best Friend

	Year 1	Year 2	Year 3
Children with Anxiety	“Play on the computer” “It would be if I could be older and I could go other places with him and I could come with him and hangout with him like just me and him.”	“That I would play with her.” “I wish I could see them more often”	“I don’t know.” “I guess we could be a little bit more, get in less fights.”
Children without anxiety	“I would wish, um, she found a million dollars on the street and nobody claimed it so her mama told her that she could keep it.” “That we could have a sleepover together.”	“I would wish that sometimes he doesn’t say crazy things. Like, when he’s trying, like, sometimes when he’s funny he overreacts and says, like, ‘heba heba’ and stuff that I don’t understand.” “Maybe that he didn’t think that he was the best or that he was better than everyone.”	“I would wish that she could play Elphaba in Wicked, cause that’s her life’s dream pretty much.” “His parents got divorced not too long ago. It might be like a little something like, um, that he doesn’t feel too sad about it or anything.”

From the sample wishes presented, it is apparent that children with anxiety tended to give shorter responses to the question, with one child in one instance even refusing to answer and

stating, “I don’t know.” With prompting, in most cases the children were able to elaborate on the wish, explaining what it would mean to have sleepovers, for example; however, usually the initial response provided just a minimum of details. Strictly from this small sample, it is also interesting to note that the responses of the children with anxiety tended to reflect their needs in the relationship, with the wish being something that would benefit them personally or benefit both friends, such as fighting less. In contrast, while many of the wishes of the children without anxiety were also “selfish,” just as often they were for something good to happen to the friend or in the friend’s life, without consideration for their own benefit. As posited in regards to the mentioning of “niceness,” this alludes to an underlying understanding of the friend, of conceiving of them as someone with their own needs and wants, and a desire to help them towards those goals. As shown here, anxiety may impact an individual’s ability to perceive or act upon such feelings.

Discussion

Summary of Findings

The goal of the current study was to evaluate the use of the SFI as a measure of friendship quality, as well as examine the nature of friendship quality and the way it relates to anxiety over time. As expected, the FQCS produced strong data from the interviews conducted with the SFI, as evidenced by different metrics of internal consistency and reliability, as well as correlation to existing measures of friendship. By virtually all of these measures, the FQCS can be regarded as a successful method of analyzing SFI data, such that these two may be used in concert to evaluate the friendships of children in a school setting. The only area in which the results were lacking was in test-retest reliability over the three years of the study. This may be

due to many factors, including choosing a different best friend in different years, participant attrition, changes arising from the child growing older across the years, and the naturally variable course of friendship.

Conducting multi-level models with friendship, as measured by the FQCS as the dependent variable and multiple measures of anxiety, as well as controlling for age, gender, household income and parent education, yielded a number of significant findings. From the MASC, the total score and the subscale for Social Anxiety were each negatively correlated as a main effect with measures of friendship while Harm Avoidance showed a positive time-varying covariate. When friendship was examined with anxiety as measured by the ADIS within the treatment-referred group in this study, the subscale for Social Phobia was negatively associated over time, within-person, with measures of friendship. From this, we can start to understand some of the relationship between friendship and anxiety over time within an individual.

As for the qualitative analysis, this revealed a tendency of children with anxiety to provide shorter, less detailed descriptions of their best friend and the friend relationship. Like their typically developing peers, children with anxiety tended to most often discuss activities that they engaged in with the best friend, describing their times spent playing together and what games they enjoyed. Closeness, feeling loved by or special to their friend, was also frequently mentioned by both groups of children, as was Trust. Where the children with and without anxiety really differed was in characterizing their friends as Nice, something the typically developing children often did but the children with anxiety did not. They differed in the types of wishes made for their friends, too; children with anxiety tended to make wishes that would benefit themselves.

Limitations and directions for future study are addressed.

The FQCS as an Instrument

The FQCS was shown to be a valid and reliable method of assessing friendship quality. When the SFI is administered to children, this tool can be used to evaluate the results and provide a standardized method of analyzing the friendship this child discusses. The high alpha values for the overall scale and individual subscales indicate strong internal consistency; the items of the FQCS all relate to each other, and seem to be measuring the same construct. This is true for the FQCS Total, the FQB, the FQGR, and each individual subscale of the FQS. As the average scores were calculated, however, the amount of missing data and the impact it had became clear. In the end, when setting the cutoff at 75% response rate or higher for a question to be included in the final scale, all of the questions relating to the subscales of Conflict and Help were dropped, as well as some from Companionship and Security. This is indicative of the ways in which these constructs were not addressed by the interview instrument, and that they were not discussed by the participants with enough frequency or depth to be able to capture the impact of these elements in the description of the best friendship.

Analyses of interrater reliability indicated strong correlations between multiple raters when using the same scale. The Intraclass Correlation between Rater 1 and Rater 2, who was always the first author of this paper, over the three years of the study, produced values from 0.610 to 0.868 depending on whether it was the FQB, the FQGR, or the FQCS Total, with most occurring in the 0.600s. All of these are all fair to strong scores, which indicate that the ratings of the two separate individuals overlap to a degree that they can be thought to reflect the actual natures of the friend relationships. In general, however, the ICC values tended to be higher when analyzing the FQGR, those questions which required the rater to find stories which matched the elements of friendship as identified by the FQS, then give an overall rating of that friendship

element in the interview transcript. It is possible that this extra step, of identifying stories which illustrate different facets of the elements of friendship, enticed the raters to give their assessments extra thought and resulted in a more accurate and objective assessment of the friend relationship, such that two different individuals were likely to assess a friendship in the same way. For this reason, this method of identifying relevant details in stories as a step before giving evaluative scores may be considered a valuable means of gathering data to answer questions about friendship in future analyses of interview transcripts.

Comparisons to existing measures of friendship, namely analyses of peer nominations, produced significant results where $p < .05$ when Rhos were calculated with the overall score for the scale. With indegrees, the number of times a peer named the child as a friend in the classroom, and the overall scale score, correlation was 0.192. This is a low correlation, however because they are significant they are support for the relationship between these measures of friendship. As calculating friendship nominations is an established method of evaluating social relationships in the classroom used in a variety of research studies (Inderbitzen, Walters & Bukowski, 1997; Greco & Morris, 2005; Cairns & Cairns, 1994), and because the FQCS scores correlate with them, it is possible to further the idea that the FQCS is a valid measurement of social relationships, namely friendship, in the classroom. Perhaps the correlation is on the low side due to the differing aspects of social relationships that the different measures examine, with the Indegrees and Outdegrees scores concerned more with social centrality and influence, who is friends with who and how many friends does each individual have, while the FQCS sought to measure the quality of the best friend relationship instead.

Additional significant and borderline significant results were found when correlations were run between Indegrees scores and scores FQGR, where a low but significant correlation

was found. This may be explained by the slightly different scopes of the FQCS and the Indegrees scores to which it is being compared; as with the scale overall, the FQGR looks more to the quality of friendship than quantity or status in the social hierarchy. What is interesting is that scores produced in the FQGR were obtained in a different way than any of the other questions on the FQCS. For these questions, the raters were given categories and had to find stories relating to those categories, then they gave the summative score for each element of friendship based on the related stories they had found. Even these extra steps, of finding supporting evidence and going through a decisive thought process to arrive at the scoring, did not result in an improvement of the correlation between social networks data and FQCS. This may be interpreted as evidence for the robustness of this finding, then; social networks data and FQCS data may just truly have a low correlation.

When individual friendship subscales were run with the Indegrees and Outdegrees scores, most of the individual subscales did not produce significant correlations. This is likely, in part, because the questions that comprised these subscales were highly correlated within each other and seem to actually capture the constructs they purport to in the friend relationship. It is also probably largely because these qualities relate to social nominations more than other friend characteristics. To be at the social center of the classroom, it stands to reason that an individual is a good companion, and provides a feeling of security and trustworthiness to his or her peers. An individual who possesses other characteristics which may make him or her a good friend, such as Balance, where he or she effectively conveys that they care about his or her friends as much as they are cared about, does not necessarily put them at the top of the social hierarchy.

As a final note, scores on whether friendships were reciprocated were also available as a part of the social networks data, though they only significantly correlated with the Universal

score of the FQGR, indicating a relationship between friends reciprocating nominations and overall rater evaluation of friendship. It is suspected that this is because the Universal score is based on the reports of friendship. After reading all of the stories a child told about their friend, the rater likely considered whether the friend was likely to reciprocate the friendship into their rating consideration. Thus, this finding is simply some evidence of the Universal rating as an encompassing metric of friendship.

The FQCS met criteria for internal consistency. Correlating the FQB with the FQGR, as well as the FQCS Total with the very last question (which was an overall rating of friendship, completed by the rater, based on the transcript) produced very strong results in Year One, and moderately strong results in Years Two and Three. This indicates support for the internal consistency of the scale overall, as the strong correlations were also significant, demonstrating that these relationships are likely not due to chance. Overall, correlations tended to be higher for the first year of data, which may have been due to the fact that this year had the least amount of missing data. With more data missing, it is less likely that all data needed to calculate each correlation is available, affecting the number of participants whose data could be used to calculate any one correlation. Additionally, with less data to aggregate into the calculation, each piece that deviates from the overall pattern has more of an impact, pulling away from the consensus.

Looking at the internal consistency of the individual elements of friendship, the one with the strongest correlation between its subscale in the FQB and question in the FQGR was Balance. It also was an exception to the rule because it had a slightly higher correlation in the second year, with a correlation of 0.826 in Year One and 0.874 in Year Two. Still, even elements with lower correlations tended to produce strong or moderately strong scores. In general, these

decreased over time. The weakest correlations were found in Year Three, for Closeness and Companionship. Both of these elements had strong correlations in Year One, however, indicating that their decline by Year Three may have more to do with the data or missing data, and not due to an issue with the internal consistency or relationship between these variables. The element with the lowest scores in general was Security, with scores which tended to be in the low 0.600s, and 0.500 in Year Three. These are, however, moderate scores and so this, too, may just be a consequence of issues of missing data over the years.

The FQCS did not achieve high values for alpha in examinations of test-retest. One would hope to find that the scores of a best friend relationship one year, as measured by the FQCS, would remain consistent into the next year. This was not the case with any analysis, even after restricting alpha calculations to only those participants whose best friend in year one reciprocated the friendship, or only selecting the individuals who maintained the same BF over the three years of the study. Even when looking at the other group, those who did not pick the same friend all three years, the alphas were not high enough.

There are many possible explanations for this lack of high test-retest over the years. Participants, while reminded of the friend they had chosen in the previous year, were not required to choose the same best friend each year, and so they were often discussing a different relationship from year to year. This, naturally, would have different dynamics, characterizations and behaviors from the friend and the child. As a result, this could easily affect friendship quality, and result in the poor correlations that were found. Additionally, though children were encouraged to choose a best friend from the class to discuss, the school which they attended was not a typical neighborhood school. Instead, it was a “laboratory” type school located on a university campus, and so the students were scattered around the city. Whereas a child at a

neighborhood school would likely live near his or her classmates, enabling frequent informal afternoon get-togethers, walking home together, weekend playdates and more, this was not the case here. Any two students might actually live quite far from each other, which would affect the amount of time outside of school they could spend together. As research has shown, propinquity tends to be an underlying factor of friendships, especially when the friends are different from one another (Nahemow & Lawton, 1975). It is also interesting to consider who the best friends of children with anxiety are exactly. If there was a tendency for these best friends to be anxious as well, or isolated in the social networks, this may explain some of the differences in friendship that we found.

Another potential factor of influence is participant attrition. Because of the decreasing number of respondents from year to year, increasing numbers of lines of data had to be dropped. There was no information for a retest, and no way to tell if the child had chosen the same best friend, when the child was no longer in the study.

However, in reality, it is likely that in general children have more of a variable course of friendship than was hypothesized. This may be the nature of friendship at its essence, or some of the differences may be due to the changes arising from the child growing older across the years. It may be that, as children age, their conceptualization of friendship changes. This was suggested by Bigelow (1977), who found that friendships evolve through stages over time and age, from shared activities to rules to understanding. Berndt (2004) also found that friendships change over time, and that as children reach middle childhood they begin to want to do things for the benefit of their friends, to improve friend quality. Thus, it is that the children are conceptualizing their friendships differently than they did at a younger age because the nature of the relationship is quite literally different.

This, in fact, is supported by the correlations which were run between age and friendship quality as well. ANOVAs were run to look for differences between group means for age and FQCS scores, to check for significant differences which might impact the overall study results. Because none of the ANOVAs were significant, it can be said that there were no statistically significant differences between group means as determined by the ANOVA, indicating no real relationship between the two. When correlations were run between age and FQCS scores, however, the results were in the low range and significant. This indicates that there is a low correlation between age and friendship quality, and that as age increases, friendship quality increases a little as well. This may be due to natural changes that occur with regards to friendship over time. Berndt (2004), for example, has found that friendships change over time, specifically that, beginning in middle childhood, around age 8, children promote their own interests less and think more in terms of what would serve their best friends. Age 8 also happened to be the mean age of participants in this study, so it is important to consider that, prior to this age, children may have a different concept of friendship and lower friendship quality, as would be picked up by the FQCS, may be inherent in the friend relationship.

So, the FQCS as a tool is a strong method of scoring the transcripts of interviews where participants were given the SFI. Each scale and subscale had high alpha values, which are produced repeatedly, across raters trained in the scoring procedures. The scale also correlates with other known measures of friendship, and it has a high level of internal consistency. Given all of this, it is demonstrably a useful tool when looking at friendships in school-aged children. Having an open-ended but guided interview, like the SFI, yields rich and interesting information, and having a reliable and valid measure like the FQCS to analyze it means that this quality data can be used. A value can be put upon the friendship, and then values can be compared between

individuals and groups, at once or over time. Taken together, these instruments are also uniquely suited to uses in schools because the SFI is easy to administer in one pull-out session during the day. Also, given the proximity and freshness of social interactions at school, gathering data in this way can yield interesting and accurate findings. Future researchers who wish to conduct related studies may find these tools invaluable.

Models of Social Anxiety and Harm Avoidance

When multi-level models were tested with the anxiety-group status and friendship, it was found that there is a general main effect of anxiety on friendship quality, for both children with and without clinical levels of anxiety. This is not explained by any one type of anxiety, but a general finding, and it follows the trends of the extant research where it has been found that children with anxiety tend to have fewer friends (Degnan, Almas & Fox, 2010) and are more likely to be rejected by peers (Inderbitzen, Walters & Bukowski, 1997) or bullied (Craig, 1998). What is also worth noting is that these findings held over time. Averaged across the three years of the study, controlling for age, gender, income and parental education, anxiety is negatively correlated with friendship. Whereas most of the extant literature is limited to one or a small number of time points, to have this finding persist across years is important.

The MASC subscale Social Anxiety was found to have a significant negative association with friendship quality as a main effect in participants who did not meet the criteria for anxiety. This means that, over the three years of the study, friendship and anxiety are negatively correlated when accounting for age, gender, household income, and parent education levels and this is true for individuals who are not initially selected for having an anxiety disorder. Similarly, when models were tested with the Social Phobia subscale of the ADIS within the treatment-referred group, significant time-varying covariates were found with friendship quality on each

scale, FQB, FQGR and FQCS. This means that within the individual, in years where he or she had higher levels of anxiety, he or she experienced correspondingly lower levels of friendship quality. Together, these two models support the hypothesis that elevated levels of anxiety are associated with lower scores for friendship quality. These are true for individuals regardless of whether they met clinical cutoffs for diagnosis with anxiety, and they speak to the specific relationship of social anxiety and friendship. Thus, it can be said that the effect of anxiety is not exclusively a reflection of social anxiety, although it seems largely driven by it.

Social anxiety, specifically, is understood to arise when an individual intends to interact with others and wants to make a positive impression but is afraid of being ridiculed or rejected (Schlenker & Leary, 1992). It makes sense, and these results support, that if an individual experiences anxiety in social situations, it will affect their friendships. Due to his or her anxiety and the tendency to avoid fear-inducing situations (Greco & Morris, 2005), it may be that the child refuses to go on play dates or that he or she shies away from social interactions. It may be that they display strange behaviors or simply poor social skills with others (Beidel, Turner & Morris, 1999), and that makes it hard to maintain a high quality friendship. As demonstrated by these models, it is the behaviors associated with this type of anxiety, separate from the others, that is significantly associated with negative friendship quality over time.

It must be noted that naming the same best friend was not required from year to year in this study, so it is not the case that these results indicate that the one friendship the child had got worse every year. Instead, they indicate that whichever it was that was the best friendship of the child at any one time, decreased in quality from the best friendship the year before. This is likely explained by the impact of the Social Anxiety on behaviors and perceptions, inhibiting the friendship.

The other significant relationship between anxiety and friendship over time was demonstrated in the models of Harm Avoidance (HA), which had a positive and significant coefficient as a time-varying covariate with the measures of friendship quality. HA can be conceptualized as engaging in behaviors that are risk-averse, and individuals with HA can be cautious, avoiding danger and thrills. Research has suggested that risk-seeking behavior, the opposite of HA, is characterized by the individual moving past established social patterns (Lyng, 2014). They may be focused on stimulation and risk in their behaviors and chosen activities, finding excitement and danger along the way. It makes sense that such an individual would experience friendships differently, as their focus would be on these thrill-seeking behaviors—elements unappealing to the HA individual. In a relationship, in contrast, individuals with Harm Avoidance may appear calm and safe to others, non-threatening and happy to engage in comfortable behaviors and activities, and these behaviors may promote friendship quality.

It is important to consider these findings especially situated in a school environment. As social anxiety is negatively associated with friendship, certainly interventions to improve social anxiety behaviors could be expected to improve friendship. In a classroom, where an individual is surrounded by peers all day, this can be handled in situ. Small groups, teacher-led interventions, and prepackaged, whole-class social skills curricula are all methods which may be used to increase friendship at school. Knowing that friendship quality decreases as anxiety increases over time adds motivation to begin as early as possible. There is reason, however, to determine the type of anxiety a child with anxiety has; as these results show, a child who is harm avoidant can actually see an increase in friendship quality over time.

Stories of Friendship

The qualitative analysis of the sample of transcripts enabled a deeper examination of some of the characterizations of best friendship. The most frequently and deeply discussed themes reflect the nature of best friendships for children with and without anxiety, and chief among these are the concepts of Activities, Trust and Closeness. These themes mirror those of the SFI and other examples of current literature. Some interesting differences, however, were also revealed when comparing the transcripts of children with anxiety to the transcripts of those without, most notably that a characterization of the friend as “nice” was often present in the descriptions of children without anxiety, but not in those of children with anxiety.

To answer the research question, children with anxiety do characterize their friendships in a few different ways than children without anxiety. While it was found that all children tended to emphasize and discuss many of the same essential qualities in their friendships, namely the activities in which they engage, and closeness and trust with their best friend, the areas in which the responses of the two groups of children differ are the ones that shed light on what may be happening in the best friendships of children with anxiety.

The category with the largest difference in number of responses by each group was Nice. In coding, statements which were coded Nice were those where either the child uses the word to describe their friend, saying he or she is nice, or where they describe an action by the friend that clearly portrays the friend doing something nice for them. These situations only came up three times for children with anxiety, while they came up four times that amount—12 times—for children without anxiety. For children without anxiety, that was enough to make it the fourth-highest count of any category. It is not surprising that this characteristic would appear among interviews with children regarding friendship; even though Nice is not an element from the SFI,

it does factor into other instruments for rating friendship in childhood (Ladd, Kochenderfer & Coleman, 1996). These authors found that young children were able to distinguish quality friendships, and that children tended to have more satisfaction in friendships that offered more validation, among other characteristics. What is interesting is that children without anxiety tended to see and value the niceness of their friends, while children with anxiety either did not or could not report it. More than any other category discussed, Nice refers to an innate quality of the friend. Even categories that related to qualities, such as Trust and Closeness, were really characteristics of the friendship and not the friend his or herself. It may be that difficulties with social skills meant that children with anxiety did not often take the necessary perspective to categorize their friends as Nice.

For the rest of the categories, the number of responses given by participants in each of the groups tended to be equivalent, especially when considering that children with anxiety tended to give shorter answers and fewer responses in general than children without anxiety. This in itself is an interesting finding, and may have been because they actually experience less of these themes in the friendship, they may go on fewer play dates due to their anxiety and the consequent difficulty making friends, as individuals with anxiety tend to have poorer social skills (Rapee & Heimberg, 1997; Spence, Donovan & Brechman-Toussaint, 1999) and are more frequently rejected in maps of classroom social structure (Inderbitzen, Walters & Bukowski, 1997). Or it may be that their anxiety kept them from discussing their friendship in detail with the interviewer. As has been mentioned, children with anxiety disorders tend to perceive even neutral stimuli as threatening (Muris, Kindt, Bögels, Merckelbach, Gadet & Moulaert, 2000), and so it would make sense that participants with anxiety disorder would be closed off and guarded

during an interview, revealing fewer details and telling shorter stories than their peers without anxiety disorders.

These differences hold up when examining the wishes each child made for his or her best friend as well. Whereas across both groups a given child was likely to wish for something that would benefit himself, such as having the friend as a member of their family, the children without anxiety were equally likely to wish for something that was just for the benefit of the friend, for example that the friend would get a large sum of money or realize a dream. Part of the issue here may be misinterpreting the prompt: individuals were asked to make a wish for their friend so answering with a wish that solely benefits the interviewee demonstrates a lack of comprehension of the question. Or, as before, this may be evidence of a difficulty with perspective-taking. Clark and Wells (1995) put forth the idea that individuals with anxiety related to social phobia turn inwards in anxiety-provoking situations. It could be that the novel situation of the interview was stressful enough to turn the thoughts of the child with anxiety inward, so that even when they were asked to make a wish for the friend, they could only think of a personal wish. Since children without anxiety made personal wishes as well, this tendency was not completely the domain of children with anxiety, suggesting that, if this is the case, the stressfulness of the interview may have impacted them as well.

As for change over time, the total number of responses produced by children with anxiety and typically developing children stayed the same in years one and two. In year three, however, children with anxiety produced more responses, total, than they had in previous years, and children without anxiety produced fewer, meaning the two groups produced nearly the same number of responses that year. This finding is quite interesting. It shows, perhaps, that children with anxiety were becoming more familiar with the interview process or perhaps more

comfortable speaking to the researcher in the interview setting. Conversely, the children not identified with anxiety were finding themselves with less to say. This may also be a reflection of becoming familiar with the interview protocol, but it worked to the opposite effect—these students may have recognized the questions or been bored by the interview process which was no longer novel.

Another potential explanation could be the treatment the children with anxiety were receiving. Some children in this study with elevated levels on anxiety as measured by the ADIS did receive a CBT-based treatment. In most cases, this was found to be effective in improving anxiety symptoms for children (Chiu et al, 2013), which may mean that their responses by year three, after receiving three years of treatment, would closely approximate the responses of children who did not have anxiety, as we found here.

When looking at individual categories where responses differed over time, Same was the only category that decreased for both groups from year to year. Statements which fell into the category of Same, about how the friends was like the child, were never among the most commonly appearing ones, however they were notably present in Year One in both groups (3 times among children with anxiety, 4 times among children who were not identified with anxiety) and they dropped off to nothing in Year Three for the children identified with anxiety, and one mention by the children who did not have anxiety. A potential reason for this is that this quality for friendships, noting that you are the same, decreases in importance as you age. As Bigelow (1977) established, friendships change over time. As younger children tend to define their relationships more by the activities they engage in, having the same interests, which would fall under the category of same in this analysis, is essential. The friend pair engaging in activities together is central to the friendship, and therefore so must be Same. Over time, however, as

children age, other factors come into play, and playing the same games may become less important.

Conflict started out low for both groups and peaked later, year two for children with anxiety (who then returned to year one levels at year three) and year three for children without anxiety. While a real pattern is difficult to see in the change of number of times Conflict was reported across both groups, what is interesting is that each group, with anxiety or not, experienced one year with a spike while each of the other years had very low levels of Conflict reported—0 or 1 incident. Since the children were allowed to talk about a different friend each year, it may be that at the two “spike” time points, the children who caused the ratings to spike were experiencing a conflictual relationship which was unusual across the other relationships and all other times. Some amount of conflict is a normal part of relationships, Conflict is a part of the FQS scale (Bukowski, Hoza & Boivin, 1994), and it can even be healthy. Children who experience conflict but know that they can make up with their friend and get past the incident have strong, enduring friendships. Still, too much conflict would not make for a long-lasting friendship, as the conflict could take over from attitudes to activities. From the reports here, it is clear that the levels of Conflict are quite low in best friend pairs almost all of the time but, if there is conflict, it is at a noticeable amount and discussed repeatedly with the interviewer. One final thought, it may also be that, when there is conflict, it is something that the child is eager to talk about with an adult, such as in the interview situation. This could explain the tendency for Conflict to spike.

In recognition of the lens of disability studies, which seeks to understand how individuals with disabilities are represented in our culture, this research provides a voice to children with anxiety disorders. While the children without anxiety disorders serve as a point of contrast, it is

interesting to consider how the children with anxiety respond to the interview situation, which is a common means of gathering information. Given a voice with someone to listen, themes have emerged which suggest that, in many ways, children with anxiety experience friendship similarly to children without anxiety, in that they think first of the activities in which they engage with their friend, and they value closeness and trust. The differences are interesting, in that children with anxiety did not characterize their friends as “nice,” something quite common in children without anxiety, and may have difficulty conceiving of their friends objectively or taking their perspective, as evidenced by the way they expressed wishes for their friends. Also, I have noted several times that the responses that children with anxiety gave to the interview questions tended to be shorter in length and sparser in detail than those of children without anxiety. This may, in fact, be a manifestation of the anxiety that the child experiences. Perhaps interviews are not the way to ascertain this information, or perhaps they should be used in conjunction with observation, as it seems that interviews alone may not be best serving this unique population.

As for my own development as a researcher, my motivation for studying friendships in children with anxiety is born of my desire to help children in general, and especially those with special needs such as anxiety, to develop meaningful and supportive relationships. As friendships are so valuable and have so many proven benefits, it is important that all children have them. This experience has raised new issues for me as I strive to assist and serve children with special needs. In my work, as I attempt to assess current functioning, needs and strengths, as well as plan and implement interventions to improve outcomes for children with anxiety, I must consider the patterns that were identified here. Identifying that Activities were the most commonly discussed theme—perhaps future interview questions can be written with this in mind, to gather more information about the ways in which social relationships for children with anxiety are

forged by playing together and how this might differ from children without anxiety. The differences between the two groups are cause for further thought as well—further questioning on niceness with children with anxiety seems warranted. I will pay more attention to the descriptors children do use to characterize their friends, and may even have them specifically evaluate whether they would use the word Nice or not to see the responses of children with anxiety.

Further, given the anxiety that the interview experience seemed to cause as evidenced by the shorter responses to questions and I myself will have to express a little more empathy in my actions. I must check and examine my own behaviors to make the children with anxiety, and without, as comfortable as possible. Ideally, this will lead to better results and more detailed, complex responses from the children with anxiety, specifically, and all children in general.

Finally, this research has also caused me to believe that it would be worthwhile to incorporate other means of data-gathering, including observation. While the responses to the interview questions of the SFI provided a very interesting perspective, a window into the best friendships from the stakeholder's point of view, adding objective observation information could confirm or deny some of the claims made by the participants. This is well suited to research in a school setting, as it is possible to conduct observations with friends right in that environment. Of course, it would not be possible to confirm all of the activities that the child says they engage in, and the interviews themselves are still essential to understanding how the child feels about his or her friend, as well as their preferences and ideas in general, but adding in observations such as the amount of time the friends spend together, who initiates conversations, and whether there is more time spent engaged in activities or conversation could add dimension and interest to the picture being painted about the friendship.

Thus, by studying atypically developing children, in this case children with anxiety, we are able to get an insight into this important, but understudied population. In using the SFI, we were able to obtain the information right from the children themselves, in interviews which allowed for probing and gaining descriptive information. Because the interviews took place in the school setting, they were more naturalistic, which builds and improves upon the existing research. While future researchers would be well-served to incorporate observations into study to gather information that the children with anxiety cannot express or do not even see, this research has given us a beginning glimpse of the experience of friendship for students with anxiety disorders.

Limitations

Among the limitations of this study is the available sample. Whereas it would be possible to construct the most complete models with 100% of children in each classroom participating, response rate was actually about 50% for each classroom, meaning the data reveals only about half of the story. It was not possible to corroborate friendship stories from the children who did not participate, and so this perspective was lost.

It would be beneficial to understand who are the friends of children with anxiety—if they, too, have elevated levels of anxiety or even difficulty making friends. Unfortunately, because not all children participated in this study, it was not possible to follow up on the individual characteristics of the named friends unless they too had consented to participate.

Attrition over time was a concern as well, as the sample in year three is reduced by nearly a third from year one. This affected the models as they were run, as it resulted in missing data which needed to be taken into account. It affected the qualitative analysis as well, as it restricted

the individuals that could be chosen for qualitative analysis, as an individual had to have transcripts from all three years to be considered.

The restricted diversity of the sample is also a limitation, which affects the groups to which these results can be extrapolated. Though the school itself maintains a fairly diverse population, the participating children in this study tended to belong to the same racial group (Caucasian) and come from English-speaking homes with both parents married and those parents tended to be well educated. Children in the study also tended to report higher levels of socio-economic status, which may also affect friendship. Or, conversely, being of a lower SES may impact friendship, and so participants avoided some of its effects.

As for the coding, it is a limitation that some of the elements of friendship, namely Conflict and Help needed to be dropped from the FQCS. It is likely that this happened because the topics covered by the SFI did not elicit responses that fell into these categories, nonetheless they are important elements in relation to friendship. Additionally, there were some themes that arose during the FQCS portion of the analysis for which it was difficult to assign a category. These include such concepts as the friend taking care of the child and cheering them up. It seemed that the SFI led to descriptions of times where these behaviors occurred, and it was not clear how to assign them on the FQCS. Stories such as these were categorized as “giving help,” or “making the child feel special.” Fortunately, the qualitative analysis allowed for some of this data to be recaptured, however a future use of the FQCS may wish to keep these ideas in mind when coding and set out to include these concepts within the named categories, or even create an additional category to capture them.

A potential confound which must be mentioned is the therapy component to this study as well. Many of the individuals with elevated levels of anxiety were eligible to and did receive a

series of Cognitive-Behavior Therapy-Based intervention to improve anxiety symptoms as a part of study participation. This intervention consisted of sessions with a counselor which took them through a series of exercises designed to address and improve their anxiety symptoms. It was one of the purposes of this study to improve anxiety outcomes with a school-based therapy and, in fact, this intervention was found to be quite successful, with 95% of the children who received the modular CBT treatment demonstrating a positive response (Chiu et al, 2013) Thus, some children who may have presented as having elevated levels of anxiety at the first time point, may have actually improved and demonstrated less anxiety in future sessions as a result of the intervention. Conversely, simply given the nature of the fact that this intervention occurred over years, it was also possible for children to develop anxiety at a later time. Thus, some children may have not met the clinical cutoff for anxiety at the first time point, but may have yet developed elevated levels of anxiety by Year 2 or Year 3. They may have actually expressed anxious symptomatology, which could impact their friendships and their performance in this study.

Directions for Future Research

Future research can build upon the findings of this study to improve outcomes for all children, and especially children with anxiety disorders, in the school setting. The rating scale, the FQCS, used in conjunction with the SFI can be used to gather more information about friendships, which in turn can be used to plan school-based interventions and future research to improve friendship outcomes. The multi-level models revealed a relationship between friendship quality and individual components of anxiety, which suggests further directions for research to understand more about the effects of different types of anxiety on friendship quality. Lastly, the qualitative results revealed mostly similarities between the friendships of children with anxiety

and those without. Chief among the differences was the way in which the children with anxiety responded to the interview situation, which seems to have altered their responses to the questions. This deserves further study to better ascertain what is a difference in friendship perception and what is a result of the information gathering method.

The FQCS was found to be a valid method of analyzing interview data on friendship yielded by the SFI. Further work on the FQCS should consider ways to retain more of the elements of friendship from the FQS, such as Conflict and Help which were dropped completely. Using this scale with another dataset, collecting more data to continue to evaluate its success, would allow for further examination and tests to confirm that the FQCS is useful in the measurement of friendship quality.

Another interesting direction would be to examine further why test-retest scores failed to show significant correlations. By utilizing cluster analysis or latent class analysis, it may be possible to begin to describe what is different about children who have stable friendships over time. By organizing the participants' responses into similar clusters or classes, we may be more likely to see a pattern as the individual differences between similar responses are reduced.

One caution for future research: at their essence, both FQB and FQGR are gathering the same information; both are based on the SFI, and both contain questions relating to the same elements of friendship. The findings here, however, are evidence that different subscales of anxiety related to the two halves of the FQCS scale in different ways; some produced significant slopes with either the FQB or FQGR and not the other. In future uses of the FQCS, it is recommended that any analyses continue to be run with the FQB and FQGR scores separately because of this.

It would be illuminating to conduct further study on who are the best friends of children with anxiety. As understanding more about friendship for children with anxiety moves towards the goal of improving friendship outcomes for these children, it is essential to understand who they are engaging with in these friend relationships. If the best friends of children with anxiety are children with anxiety or other special needs, children of low social status in the classroom, or children with difficulty making friends, this may suggest that additional interventions are necessary. The characteristics of the individuals in the relationship likely affect the quality of the relationship, or perhaps difficulties the friend pair experiences. These friendships, however, may provide a rich setting for intervention, with both friends able to support and teach the other about friendship, and so further study is needed to best understand how to support these friendships for children with special needs.

Finally, it is worth noting that the scale, as written, does capture some of the qualitative features of the friendships because of the FQGR, as stories relating to the different elements of friendship are gathered before FQGR ratings for each are determined. Though, for the purposes of this evaluation, the qualitative questions were used to help make determination for overall score for each FQS facet of friendship and a separate qualitative analysis was conducted to determine themes and analyze them, these questions may prove useful in future research as means to gather qualitative data. They may be used as a resource for understanding more about friendships, they may offer explanations for the trends in data, or they may serve as a smaller scale version of a qualitative analysis for researchers who do not have the time or ability to conduct a large-scale qualitative analysis separately.

The analyses conducted using multi-level models revealed a number of interesting future directions for research. The most interesting findings were that individual subscales of the

MASC were associated with friendship over time within an individual. With this basic model, it would be interesting to begin to incorporate additional potential moderators or predictors.

Children with special needs, including anxiety, are often a target for bullying, for example (Craig, 1998). In the current study, information on bullying was not obtained, however future research could include interview questions about bullying. This factor could be included as a categorical grouping (bullied or not) or it could be explored as an additional variable in models predicting how anxiety changes over time with a supportive friendship when bullying is present, for example. Similarly, it would also be interesting to account for academic progress within the model, as anxiety has been known to impact academic performance (Alpert & Haber, 1960).

Other ideas for future research would involve looking at the current models in a different way. Obtaining data from more sources could be valuable, including parents, teachers and friends. These stakeholders could add valuable perspective, and could serve as alternate independent variables, with levels of anxiety as reported by others predicting friendship as measured by the FQCS. These additional reports could serve to “triangulate” and strengthen any outcomes regarding the relationship between the variables.

In terms of implications of these findings, they are especially meaningful when considering the needs of children with anxiety, who may receive education services under a designation of ED in the school setting. Knowing that children with social anxiety tend to have worse friendships over time, and having access to them within the setting of the classroom, steps can be taken and support put in place to improve friendship outcomes for children with social anxiety, specifically. These children tend to exhibit difficulty in social situations, and so they may benefit from a whole-class intervention on social skills and making friends or, alternately,

an intervention designed to improve anxiety behaviors in general, such as that used in this study by Chiu et al. (2013).

When considering the qualitative analyses conducted, future research into the differences in the responses of the children with anxiety versus the children without anxiety would be interesting to pursue. While the topics of discussion tended to be largely similar between the two groups, with the exception of Nice being discussed by the children with anxiety, where children with anxiety really differed in is their actual responses to the interview situation. In general, children with anxiety gave shorter answers to questions and made wishes to benefit themselves when prompted to make a wish for the best friend. These practices are very likely a response to the interview situation. It is possible that a change in the interview process could put the children with anxiety more at ease, alleviating some of the stress and reducing these differences. It is expected that this would get the most accurate possible responses to the interview questions.

An additional topic of interest that arose during the course of this study is the finding of the differences in wishes. Children with anxiety tended to make wishes that would benefit themselves even when prompted to make a wish for their friend, and it would be interesting to explore this idea further. One possible way to do this is to ask for wishes in a variety of different areas—a wish for school, a wish for their personal life, etc. Another would be to prompt the child to make a wish for the friend and a wish for the friendship—that might encourage the child to stretch their thinking while still giving room for a wish that benefits him or herself. Ultimately, the findings may be repeated, lending further support and weight to these findings that express an additional characteristic of children with anxiety.

Finally, it would be interesting to add an objective component to future research which builds on this study. This would enable examining the relationship between the perception of

friendship by the child and what is actually happening day to day. The reports from the child give an understanding of the friendship as they see it and, in many ways, this is the truth. If an individual believes they are supported and nurtured by their friend, then it is so, even if the relationship seems different to others on the outside. It would be interesting to have that information from others who are outside of the friendship. This information, with observations, or additional rating reports from researchers, would provide a framework against which to measure the impressions the children are providing about their friendships.

The current study offers important insight into the relationship between anxiety and friendship within an individual over time. Relationships were found between Social Anxiety and lower friendships over time, quantitatively and this was also supported by the qualitative stories. As children with anxiety tend to have difficulty in relationships, it is important to understand what factors may be influential in their friendships and in what ways these relationships can be fostered by parents, teachers, counselors and other caring individuals. As more is understood about Social Anxiety, as well as Harm Avoidance being associated with positive outcomes with regards to friendship, it is hoped that it will be possible to instruct and coach individuals with anxiety in how to develop friendships, especially within the school setting. Understanding that children with anxiety tend to say less in an interview setting, or that they may have difficulty with perspective taking when it comes to characterizing their friends can contribute to better evaluations and interventions. This is valuable information, as teachers, aides and counselors must interact with children with special needs on a daily basis. It is hoped that the findings of this study may contribute to practical interventions to benefit children as well as training to promote understanding and empathy from adults. This is all to further the ultimate goal, that children with anxiety will be better able to sustain the friendships they have already developed,

as well as create new ones, leading them to reap the protective and developmental benefits of a quality best friendship.

Appendix A: Anchor Descriptions for Key Aspects of Friendship

Companionship: Child views best friend as someone they are together with (1-5), where:

1 is they spend little or no time together. They are not together very often during the day at school or at home in the evenings or weekends. They don't often play together when given the opportunity, or just "hang out" together.

5 is they spend a lot of time together. They may play together often during free times at school (such as lunch and recess), they go over to each other's houses to play together after school and they get together on the weekends. They are frequently spending time together, even just hanging out and talking.

3 is they spend some time together but not a lot. They may play together during free times at school a few times a week, but there are definitely times when they aren't together and prefer being with others. They may get together for play dates and weekend dates too, but it may just be infrequently as opposed to very often, or for a short while, as opposed to a longer event.

Balance: Child perceives balance in the relationship (1-5), where:

1 is the relationship is largely one-sided. One child is often the leader in the relationship, making most of the decisions, such as what games to play and where to go, and telling the other child what to do. The other is often the follower.

5 is the relationship is mostly equal. Each child initiates interactions with the other child and makes decisions in the relationship. Both children see the other as an equal, like each other equally, and the relationship feels even.

3 is there is balance in the relationship sometimes, or there is somewhat of a balance. The children both initiate interactions some of the time, but sometimes one child dominates. Or, one child has a little more power in the relationship than the other, but does listen to and consider the child.

0 is N/A or Not discussed, and the child is not very positive about the best friend

Conflict: Child views the relationship as conflictual (1-5), where:

1 is there is little or no conflict in the relationship. The friends rarely argue or disagree, and if they do it is relatively minor or easily patched up. They don't annoy each other very much. There are rarely hurt feelings. Choose this if the child mentions lots of positive qualities about the friend and doesn't discuss conflict much at all.

5 is there is a lot of conflict in the relationship. The friends often disagree. They spend a lot of time arguing, maybe bickering or squabbling over little things. Or, they may not argue often, but when they do it is a major, blowout fight that ends up with hurt feelings and other consequences.

3 is there is conflict sometimes or in some situations but not others. The friends may almost always disagree about one thing or in one context, such as over what to do at recess, but the rest of their relationship is relatively conflict free. There may sometimes be hurt feelings. Or there is an ongoing general feeling of annoyance, but not a serious argument.

0 is N/A or Not discussed, and the child is not very positive about the best friend

Help: Child views best friend as helpful (1-5), where:

1 is the friend gives little or no help. The child needs help and the friend does not give it. Or, the friend gives a little help but not what the child needs. The friend does not help when the child feels attacked or bullied.

5 is the friend is very often helpful. The child views their friend as a helpful person, as a person who takes care of him or her when bad things have happened.

3 is the friend is helpful sometimes or is somewhat helpful. The friend gives help sometimes but maybe not as often as the child would like. Or, the friend helps a little bit, but not as much as they could or as much as the child needs. The friend may stand up for the child in some situations but not others.

0 is N/A or Not discussed, and the child is not very positive about the best friend

Security: Child feels secure in the relationship (1-5), where:

1 is the child does not feel very secure in the relationship. The child does not think the relationship is a very strong or enduring one, or that the friend is very reliable. The child may think that the friend doesn't like him or her very much.

5 is the child feels very secure. The child is pretty confident that the friend likes him or her. He or she feels that they are good friends who are there for each other now and will be in the future. This is a rather strong, reliable relationship.

3 is the child feels secure sometimes or feels somewhat secure in the relationship. The child is unsure whether the best friend will be there for him or her now and has doubts about whether the relationship will last. The child may feel that the friend is a good friend now but won't stick around long, or the child may feel that the friend is sometimes around and reliable and sometimes absent.

Closeness: Child feels close to the best friend (1-5), where:

1 is the child does not feel very close to the friend. The child does not think that they are very close, feel warm towards the friend, or feel that the friend makes him or her feel very special often. The child does not share many or even any secrets with the friend or feel that the friend shares secrets with him or her.

5 is the child feels very close to the friend. The child has warm feelings for the friend and the friend makes the child feel special and cared for. They praise each other and build each other up. They share secrets and confidences.

3 is the child feels close sometimes or feels somewhat close to the friend. The child may feel close to the friend and that the friend is positive and supportive some of the time, but also mentions feeling more distant some of the time. Or, the relationship may have some warmth, praise and closeness between the friends but it lacks the full feeling of these. The child may share some secrets, but is also keeping part of him or herself back from the friend, or feels that the friend is keeping some distance.

Overall: How well does the child's description of the friendship match an ideal best friendship (0-5), where:

1 is a regular friend. They see each other in school but rarely outside of school. They are on friendly terms most of the time, or the relationship waxes and wanes in terms of friendliness, without ever getting too close.

5 is a classic best friend. They are a good companion, trustworthy, helpful. The friend supports the child and makes him or her feel better. The two do lots of activities together and get together

outside of school as well as spending time together in school. The relationship may sound like a sibling relationship where the friends are extremely close, have strong positive feelings and the child may imagine or wish they were in the same family.

3 is a borderline best friend. The two spend a good deal of time together, but also spend a lot of time with others. Or, the child does not feel fully open with the friend, like they can't fully trust the friend or rely on him or her. There is a good friendship there, but not enough to be a best friendship.

0 is when the child's description of the friendship does not sound like a friend. The two argue all the time, the friend is abusive or the child is abusive towards the friend. Perhaps they're forced to be together by circumstance, such as being in the same class at school. Perhaps they do not enjoy each other's company.

Appendix B: Friendship Quality Behaviors

1. His/her friend and the child spend a lot of their free time together.
2. His/her friend and the child do things together.
3. His/her friend and the child help each other.
4. The friendship is just as important to the child as it is to his/her friend.
5. The child can trust and rely upon his/her friend.
6. Sometimes it seems that the child cares more about the friendship than his/her friend does.
7. Sometimes his/her friend does things for the child or makes the child feel special.
8. If the child has a problem at school or at home he/she can talk to his/her friend about it.
9. His/her friend and the child go to each other's houses after school and on weekends.
10. Sometimes his/her friend and the child just sit around and talk about things like school, sports, and other things they like.
11. His/her friend would help the child if he/she needed it.
12. Being friends together is more important to the child than it is to his/her friend.
13. If there is something bothering the child, he/she can tell his/her friend about it even if it is something the child cannot tell to other people.
14. The child feels happy when he/she is with his/her friend.
15. His/her friend likes the child as much as the child likes him or her.
16. Even if his/her friend and the child have an argument, they would still be able to be friends with each other.
17. His/her friend and the child play together at recess.
18. If other kids were bothering the child, his/her friend would help him/her.
19. His/her friend helps the child when he/she is having trouble with something.
20. If somebody tried to push the child around, his/her friend would help him/her.
21. The child can get into fights with his/her friend.
22. His/her friend would stick up for the child if another kid was causing the child trouble.
23. When they have free time at school, such as at lunchtime or recess, his/her friend and the child usually do something together or spend time with each other.
24. His/her friend can bug the child or annoy the child even though he/she asks him/her not to.
25. His/her friend helps the child with tasks that are hard or that need two people.
26. The child knows that he/she is important to his/her friend.
27. When the child has to do something that is hard he/she can count on his/her friend for help.
28. If his/her friend or the child does something that bothers the other one of them they can make up easily.
29. His/her friend and the child disagree about many things.
30. If his/her friend and the child have a fight or argument they can say "I'm sorry" and everything will be alright.

Appendix C: Precedence Rules of When to Infer

When you can infer:

The child has mentioned something similar to the question, but not the exact answer

- Ex: For the item “If the child has a problem at school, he/she can talk to his friend about it” when the child tells a story about his friend helping him when he is picked on by a bully at school. Talking over problems wasn’t explicitly mentioned, but by the fact that the friend helped the child, they must have talked about it.
- Ex: “His/her friend and the child go to each other's houses after school and on weekends.” When the child mentions that they go to places outside of home together on the weekends (a park, a movie, etc.)
- Remember: If you have to infer, it is probably not a 5 (or a 1). It is probably somewhere in the middle.

When you can’t infer:

When no mention of the topic has come up.

- Ex: “If the child has a problem at school, he/she can talk to his friend about it” can’t be answered when the child has never mentioned that he talks to his best friend.
- Ex: “His/her friend and the child go to each other's houses after school and on weekends.” The child only mentions playing together at school.

Think carefully when:

Something tangentially related is mentioned

- Ex: “If the child has a problem at school, he/she can talk to his friend about it” and the child endorsed “trust” from the poster of words. Trust doesn’t necessarily mean that they talk about things, but if other things came up in the interview that made you think they talk about problems at school, then choosing “trust” can be further evidence that they likely do talk about problems at school.
- Ex: “His/her friend and the child go to each other's houses after school and on weekends.” The child mentions his friend has cool toys. We can’t assume where the child saw them, so look for clues elsewhere that the child has been to play dates at the friend’s house.

****Likewise, if you have no reason to believe something is not true, don’t hedge that it is. If the child says they keep secrets, even if s/he doesn’t go into much detail, take them at their word. There is secret-keeping there and there is trust (unless something else in the interview says otherwise).**

Appendix D: Common Issues

- Coding scale 1—not true, 5—really true
 - So if they do it, it's really true
 - If they don't do it, it's not true
 - Middle would be if they do it sometimes, or somewhat
 - You can look at the ratings of the coder in the transcript to help make decisions, but don't just follow them
- Trust: is related to secrets, but endorsing secrets is not an automatic 5 on the trust questions
 - Naming trust (or help, etc.) from the poster of words could earn a 5 (unless there is something else in the interview that makes you think no)
 - Maybe a 4 if sharing secrets is endorsed—secrets definitely play into trust
- Helping:
 - Follow inferring guidelines
 - If the child mentions that the friend is assertive, you can't assume the friend sticks up for the child, but look at the rest of the interview and see if, taken together, that is true.
- Doing things together:
 - Recess—counts if they play together at an informal time in the class, when they have free time in class for example. Does not count if they are assigned to work together by a teacher, or some other adult pairs them together (unless there is other evidence in the interview that they are friends besides being paired together)
- Talking:
 - Sharing secrets—could infer some talking, but if talking is not specifically mentioned (here or elsewhere) it might be a 4 or a 3. Look at the rest of the interview
 - The question regarding just talking (about sports, etc.): is trying to get at talking as a social activity the friends engage in, beyond a means of communicating. So, do they engage in talking for pleasure or just to give each other information?
 - Can't infer talking if the child only mentions playing
 - Might be able to infer talking if the child mentions "hanging out." Read the rest of the interview carefully
- Arguments/fights:
 - If they don't mention fighting at all, you have to mark 99 (n/a)
 - If they say or otherwise indicate something like, "We always agree," that could be a 1 (the child has addressed the topic and indicates they never fight)
 - It's hard to tell the difference between a friend who doesn't bother you/you don't fight AND A friendship where you make up quickly AND The child just not mentioning fighting in the relationship; do the best you can. Infer if you can from the rest of the interview
- Happy:
 - If the child is happy with their friend: can endorse this if the child mentions having fun, is excited, or other words that get at a positive emotional state.
 - Cannot infer if the child just mentions playing, spending time together, or any physical activity without mentioning an emotional state.
- Values child:
 - If the child mentions the friend does something for the child that s/he doesn't do for others (such as sharing a secret with them), that could be a 4 or 3 (or as you see appropriate). This behavior shows valuing/differentiating the child.

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