

**Longitudinal exploration of friendship patterns of children and early adolescents
with and without Attention-Deficit/Hyperactivity Disorder**

Angelina Chupetlovska-Anastasova

Thesis submitted to the
Faculty of Graduate and Postdoctoral Studies
in partial fulfillment of the requirements
for the Doctorate in Philosophy degree in Clinical Psychology

School of Psychology
Faculty of Social Sciences
University of Ottawa

© Angelina Chupetlovska-Anastasova, Ottawa, Canada, 2014

Table of Contents

Abstract	4
Acknowledgements	6
Introduction	7
Attention Deficit/Hyperactivity Disorder; Developmental Implications	7
Cognitive and Neurological Mechanisms Underlying Social Difficulties in ADHD	9
Peer Relationships in Children and Youth with ADHD	16
Friendship: Definition and Characteristics	25
The Concept of Friendship Stability	27
Temporal Development of Friendships	35
Close Friendships in Youth with ADHD	52
Objectives and Hypotheses	58
Method	61
Participants	61
Procedure	66
Measures	71
Results	75
Comparison of Returning and Not-Returning Participants	75
Analytic Strategy for Hypotheses Testing	76
Hypotheses Testing	77

Discussion	97
Friendship Stability and Duration (Hypothesis 1)	97
Place Where Friendship Started and Age of Friends (Hypotheses 2 & 3)	99
Familial Factors (Hypothesis 4)	101
Friendship Features (Hypothesis 5)	103
Friendship Behaviour Dynamics (Hypotheses 6 & 7)	107
Friendship Affect (Hypothesis 8)	110
Adjustment of affect and duration of interaction (Hypothesis 9)	113
Friendship Quality (Hypotheses 10 & 11)	115
Summary of findings	117
Clinical Implications	118
Strengths, Limitations, and Future Directions	125
References	129
Appendices	189

Abstract

The current study is a multimethod, longitudinal exploration of friendship patterns of children with ADHD. We relied on information from parent and teacher ratings, self-report measures of children and their friends, and observational data from three interactive tasks. In the two phases of the study, the participants were 112 children and their friends between the ages of 7 and 13: ADHD group dyads, $n = 68$; comparison group dyads, $n = 44$.

Results indicated that the friendships of children with ADHD differed from the friendships of the comparison group. Overall, children with ADHD had friendships that, although stable over time, were of lower duration and stability than the friendships of comparison children. The lower duration and stability of friendships in the ADHD group coincided with more single-parent households in this group, which may indicate elevated family stress. However, children with ADHD were no different than comparison children in regards to the age of their friends and the places where they met them. At both participations, ADHD dyads reported fewer positive friendship features than comparison dyads. Furthermore, children with ADHD reported less intimacy toward their friends, less help and guidance, and less validation and caring.

The friendship behaviour dynamics observed during the interactive tasks differed between the two groups. Children with ADHD violated more rules and were less altruistic and sensitive during interactions. Additionally, children with ADHD showed less positive and more non-positive affect while relating to their friends. When a decision that involved a compromise had to be made, the length of interaction was greater and

coincided with displayed non-positive affect. Additionally, their friendly interactions were observed to be characterized by unequal power distribution as opposed to those in the comparison group where there was greater power equality.

However, our results also suggest that the behavioural trajectory over time was similar between the ADHD and comparison groups. The friendships of ADHD and comparison children were rich in positive and negative friendship features reported by the two friends, and over time there was more open reporting of the negative friendship aspects. Our results did not seem to be affected by gender and age differences, ADHD subtypes, comorbidities, or medication status.

Through outlining friendship patterns of children with ADHD, we are hopeful that our findings may be useful to mitigate negative social consequences of ADHD. A practical clinical application may be in recommending measures and creating interventions aimed at promoting friendship and improving social adjustments in children and young adolescents with ADHD.

Acknowledgements

I would like to take the opportunity to express my deepest gratitude to the people without whose help and support this dissertation would not have been possible. Before all, I wish to thank my thesis advisor, Dr. Barry Schneider. Over the years, he extended me generous and unwavering support and contributed immensely to my knowledge. He also fostered my ability for independent work and taught me to demand excellence from myself.

I also wish to thank my committee members Dr. Elisa Romano, Dr. Diana Koszycki, and Dr. Cary Cogan for their expert advice, constructive and timely feedback, and investment of time and passion in this project.

With deep feeling, I want to acknowledge my parents and my husband. They are the ones who were with me daily, through all the steps of this long journey, and tirelessly encouraged me to follow my dreams. Their unconditional love and support gave me the strength to continue and arrive where I am today. Thank you for always being by my side.

I also have an immense appreciation for my dear friends. They provided me with stability and encouragement and accompanied me in my path with understanding and genuine caring. And last, but not least, I wish to express my special thanks to my teachers and colleagues Dr. Ely Garfinkle, Dr. Arthur Leonoff, Dr. Timothy Hogan, Dr. June Pimm, and Dr. Rosemarie Krausz. They shared their wisdom, gave me peace of mind and continuous support, and believed in me when I most needed it.

Introduction

Attention Deficit/Hyperactivity Disorder; Developmental Implications

Attention Deficit/Hyperactivity disorder (ADHD) is considered one of the most common psychiatric disorders of childhood (Willoughby, 2003). Community-based epidemiological studies suggest that between 5% and 10% of all school-aged youth meet the diagnostic criteria for ADHD (Scahill & Schwab, 2000). Diagnosed males outnumber females at rates of approximately 2-3:1 (McGee & Feehan, 1991). ADHD has been associated with lifelong difficulties such as high rates of psychiatric disorders and academic difficulties as well as disrupted familial and peer relationships (Leibson, Katusic, Barbaresi, Ransom, & O'Brien, 2001). Recent research, which has documented the substantial risk of negative developmental outcomes among children with ADHD, suggests a conceptualization of ADHD as a chronic disorder that persists over the lifespan and affects both sexes (Wilens, Biederman, & Spencer, 2002; Spencer, Biederman, J. & Mick, 2007).

In the present study, I reviewed pertinent literature regarding the developmental implications of ADHD and cognitive and neurological mechanisms underlying the social difficulties of individuals with ADHD. Special emphasis was placed upon specifics of friendship as a relationship, such as friendship maintenance, and upon factors contributing to temporal stability of friendships. I also covered aspects of the contemporary research on peer relationships and friendships in children and youth with ADHD. The main goal of the present study was to determine through a longitudinal exploration whether the development of the naturally occurring friendships of children

and young adolescents with ADHD differs from the development of the friendships of children and youth without ADHD.

DSM-V has defined three main subtypes of ADHD: Predominantly inattentive, Predominantly hyperactive/impulsive, and a Combined presentation. These subtypes, or presentations as they are called in the manual, are mainly characterized by symptoms of inattention, hyperactivity, and impulsivity, manifest to a certain extent in the different subtypes. Although hyperactive-impulsive and inattentive symptoms decline significantly from childhood to mid-adolescence, these youth continue to differ from non-diagnosed youth on several dimensions such as attention, emotion regulation, and self-control (Biederman, Faraone, Taylor, Sienna, Williamson, & Fine 1998; Biederman, Mick, & Faraone, 2000; Hart, Lahey, Loeber, Applegate, & Frick, 1995; Spencer et al., 2007). Children and adolescents with ADHD do not differ in terms of the mean number of ADHD symptoms and associated problems (e.g. psychiatric comorbidity or cognitive, social, and academic functioning; Biederman et al., 1998). However, the disorder manifests differently in children compared to adolescents. The ADHD-related behaviours of hyperactivity and impulsivity are more common in children than in adolescents and more common in males than in females. Over the course of development, there is a greater reduction in hyperactive-impulsive behaviours than in inattentive behaviours (Burns, Walsh, Patterson, Holte, Sommers-Flanagan, & Parker, 2000). Therefore, adolescents with ADHD often have different behavioural presentations from children with ADHD. However, this is consequent to maturation and cognitive development with age, which make ADHD-related symptoms in adolescence look proportionally less severe than in childhood (Biederman et al., 2000).

In summary, ADHD is a prevalent disorder that starts in childhood, is chronic in nature, and is characterized by age-related behavioural variability. This variability appears to be important in understanding the social relationships, and more specifically, the friendships of youth with ADHD. In the current study, I investigate how the age-related variability in interpersonal behaviours is related to friendship-maintenance patterns of youth with ADHD.

Cognitive and Neurological Mechanisms Underlying Social Difficulties in ADHD

The development of many of the interactional processes involved in the creation and maintenance of friendships is influenced by *social cognition* mechanisms. Social cognition is a broad term that refers to the cognitive mechanisms that individuals use to understand social situations (Staub & Eisenberg, 1981). Social cognition includes the ability to perceive the emotions of another person, the sense of empathy and the ability to reason about mental states. Research regarding the impairment in social cognition among children with ADHD is scarce (Uekermann, Kraemer, Abdel-Hamid, Schimmelmann, Hebebrand, Daum, al., 2010). However, there are data supporting the hypotheses that children with ADHD demonstrate emotion-recognition deficits (Downs and Smith, 2004; Pelc, Kornreich, Foisy, & Dan, 2006), have difficulties with social perspective taking, which is the ability to understand a social situation from another person's perspective (Marton, Wiener, Rogers, Moore, & Tannock, 2009), and struggle with social problem solving tasks (Uekermann et al., 2010).

The development of social cognition is closely related to that of *executive function* (Uekermann et al., 2010). Executive function involves the process of integrating and combining separate, but related and corresponding cognitive abilities in service of a goal

(Welsh, 2002). For instance, executive function is highly evident when a person is presented with a novel or a challenging task or placed in an unfamiliar situation for which routine, automatic responses have not yet been developed. In such cases, one relies on executive functions to contemplate the various elements of the situation, to assess the consequences of one's actions and to adjust one's behaviours accordingly.

Significant impairment in executive function has been found in children with ADHD (Pennington & Ozonoff, 1996). The difficulties exhibited by children with ADHD in the area of executive functioning may be associated with their difficulty formulating and retaining relatively abstract internal representations of goal-directed actions that serve to inhibit lower-order functions (Zelazo & Muller, 2002). The difficulties in formulation and retention are at the base of the tendency of children with ADHD to act on their impulses instead of considering the situation and the possible consequences of their actions.

Specific deficits observed in individuals with ADHD and associated with executive-function impairment are planning, attention, behavioural regulation, response inhibition, and working memory (Smith, Barkley, & Shapiro, 2006). The executive-function deficits are thought to lead to an inability in children with ADHD to generalize acquired skills. In one interesting study, children with ADHD who participated in attention training demonstrated improvement on the tasks but their performance in a broader context was characterized by poor generalization of the acquired skills (Kerns, Eso, & Thomson, 1999), which is consistent with executive functioning impairment. The difficulty to generalize skills over different contexts is further illustrated by the debatable effectiveness of behaviour interventions and social skills training (Soorya & Halpern,

2009). These training programs attempt to provide a compensatory system for the executive function-related deficits in ADHD such as behavioural regulation, working memory, and internalized/self-directed speech. However, although children improve during the training, they fail to apply the skills in a broader context (Kerns et al., 1999).

Furthermore, executive-function deficits are thought to account for the frequent inability of children to detect subtle verbal cues, and for their problems with memory of conversations (Huang-Pollock, Mikami, Piffner, & McBurnett, 2009). Children with weak inhibitory control are involved in more negative exchanges with peers than are children with good inhibitory control (Hay, Payne, & Chadwick, 2004). The behaviours contingent upon the executive functions constitute an inseparable and vital element of peer and friendship interactions. Therefore, difficulties in the area of executive function are thought to be closely associated with difficulties in peer interactions and close dyadic friendships.

Commonly occurring cognitive and executive function impairments in patients of all ages with traumatic brain injury have been linked indirectly to unsuccessful social integration (Ylvisaker, Turkstra, L. & Coelho, 2005). Weaknesses in attention, memory, organization, planning, self-awareness, etc., were found to affect negatively the non-routine social interactions and to reduce social effectiveness (Levin, Goldstein, Williams, & Eisenberg, 1991). The executive functioning impairments in traumatic brain injury patients are also associated with theory of mind deficit, which is an impaired ability to interpret others' behaviour as motivated by thoughts, desires, feelings, etc., that can be inferred from their behaviour (Stuss, Gallup, & Alexander, 2001). Social skills and behavioural self-regulation overlap, as individuals with challenging behaviours are often

described as socially unskilled (Ylvisaker et al., 2005). Additionally, the relationships between social skills, peer acceptance, and friendship are reciprocal, which further explains why children with ADHD, who have marked behavioural difficulties, also struggle interpersonally.

A substantial part of the executive functions is associated with the *prefrontal cortex*. The prefrontal cortex is critical for inhibition and for self-control of emotion abilities that are crucial in social interactions (Barkley, 1997; Blair, 2001; Granic & Patterson, 2006). Irritability, hostility, excitability, and a general emotional hyper-responsiveness toward others are among the characteristics of individuals with ADHD (Wehmeier, Schacht, & Barkley, 2010). Children with ADHD have a tendency to become over-aroused and excitable in response to rewards and to be more visibly frustrated by declining levels of reinforcement in comparison with typically functioning children (Douglas & Parry, 1994). Children with ADHD are more negative and emotional in their social communication with peers than are children without ADHD (Barkley, 2006; Hoza, 2007). Children with ADHD are also less able to restrict their behaviour in accordance with commands and instructions, especially if there is a reward for rule violation (Smith et al., 2006). Additionally, skills essential for social interaction, such as verbal problem solving, communication of task-essential information, and describing one's own strategies during task performance have also been found to be deficient in children with ADHD (Antshel, Macias, & Barkley, 2009). In terms of the development and maturation of executive functioning, children with ADHD perform like younger children without ADHD, which often results in rejection by the peer group (Smith et al., 2006). The

pattern of development of children with ADHD is similar to that of children without ADHD in trajectory, but is substantially delayed (Antshel et al., 2009).

Model of prefrontal executive functions. The notion that ADHD arises from abnormalities in the structure and function of the prefrontal cortex is supported by a model of prefrontal executive functions (Barkley, 1997). According to this model, the presence or absence of behavioural inhibition is a precursor to the effective working of important aspects of executive functioning and the self-regulation that follows from it. The four *executive abilities* that subserve self-control and goal-directed behaviour are: nonverbal working memory; self-regulation of affect, motivation, and arousal; internalization of speech (verbal working memory); and reconstitution (planning and generativity). Behavioural inhibition does not govern these abilities directly, but facilitates them through response stop or delay and through interference control. However, nonverbal working memory, self-regulation, internalization of speech, and reconstitution directly affect the functioning of motor control, fluency and syntax. In typically developing individuals, the fluency of this regulatory process results in behaviours that are controlled by internally represented information, as opposed to control exclusively by the external environment, as observed in individuals with ADHD.

The behavioural inhibition model of executive functioning accounts for a great number of the cognitive and behavioural specifics characterizing ADHD, predominantly the Hyperactive and Combined presentations. These two types of ADHD are generally characterized by deficiency in behavioural inhibition (Barkley, 1997; O'Brien, Dowell, Mostofsky, Denckla, & Mahone, 2010). Consequently, the effective deployment of the four executive abilities that subserve self-control and goal-directed behaviour is hindered,

which results in behaviour highly controlled by the immediate context and consequences (Barkley & Edwards, 1998). In the psychosocial domain, the model predicts that significant deficiencies should exist in the performance of social skills, such as sharing and cooperation, that are dependent on the valuing of future personal and social consequences over immediate ones.

The model is supported by studies establishing its temporal stability. During adolescence, the ADHD-related difficulties that are related to executive functioning (inattention and poor inhibition) remain prominent (O'Brien et al., 2010). The main constructs that comprise the disorder remain the same as in childhood, but their manifestation changes due to changes in social expectations and responsibilities. Symptoms that reflect poor persistence of effort, impaired self-control and organization, and deficient time management in adolescence become combined with a risk of comorbid disorders such as substance use disorders or depression (Barkley et al., 2002). Furthermore, adolescence is characterized by social challenges such as dating, sexual relationships, and building of reliable social network and social support systems. These challenges are greater for individuals with ADHD than for typically developing adolescents due to their initial executive functioning difficulties, which affect social cognition and, subsequently, social performance and ability to deal with social situations (Antshel et al., 2009).

Children and adolescents with ADHD of the Predominantly inattentive presentation demonstrate qualitatively different attention problems compared to individuals with ADHD-Predominantly hyperactive and combined types. Studies of individuals with the ADHD Inattentive type in adolescence are scarce (Barkley, 2004).

However, on measures of *social perception* and performance, children and adolescents (age range: 7-16) with ADHD - Predominantly inattentive type have shown significant differences in comparison to control groups in interpretation of emotional and non-verbal cues on a direct measure of social perception (Semrud-Clikeman, 2010). The differences between the results of the participants with Predominantly Hyperactive and Combined types and Predominantly Inattentive type were not significant. These results were consistent with findings of social difficulties such as *social performance* issues and social withdrawnness typically shown by children of ADHD-Predominantly Inattentive type (Maedgen, & Carlson, 2000). The findings suggestive of difficulties in interpretation of emotional and non-verbal cues support a link between inattention and social perception that is separate from impulsivity difficulties. Furthermore, core elements of *executive control* such as response inhibition, response preparation, and working memory are affected in children and adolescents with ADHD regardless of sex (O'Brien et al., 2010).

To summarize, ADHD difficulties are directly related to social cognition mechanisms that are closely governed by executive functioning. Deficits in executive functioning associated with neurological findings in the prefrontal cortex mediate social functioning and result in significant social difficulties as observed in individuals with ADHD. Although differences in terms of reading of social cues and social performance exist among the separate ADHD subtypes, they are nominal. However, additional research is needed to clarify the connections between executive functioning and social performance, especially building and maintenance of close relationships.

Peer Relationships in Children and Youth with ADHD

Peer relationships are of great importance during childhood and early adolescence. They exist at multiple levels and in multiple contexts (Hoza, Mrug, Gerdes, Hinshaw, Bukowski, Gold, et al., 2005) and constitute the major context in which children learn social skills such as cooperation, negotiation and conflict resolution (Rubin, Bukowski, & Parker, 1998). Peer problems have been shown to predict later social, academic, and psychological difficulties (Hoza, 2007). Research has found that up to eighty percent of children diagnosed with ADHD are rejected by their peers (Hoza, Gerdes, Mrug, Hinshaw, Bukowski, Gold, et al., 2005). In comparison to other children, those with ADHD have also been shown to be less liked, to be excluded by more popular peers and to have fewer *dyadic friendships*. Additionally, the peer-related difficulties in children with ADHD are present in new as well as in old social groups (Erhardt & Hinshaw, 1994). The deficits are not dependent on gender, i.e., peer impairment presented in both boys and girls with ADHD (Hoza, 2007). In terms of social difficulties, children with ADHD have been found to be poor monitors of their social behaviour (Hoza, Waschbusch, Pelham, Molina, & Milich, 2000) They also have extreme difficulty in assuming different social roles such as being a leader in certain situations and a follower in others (Whalen, Henker, Collins, Finck, & Dotemoto, 1979). Furthermore, children with ADHD have been found to be unable to appropriately regulate their emotions appropriately in actual peer situations (Hoza, 2007).

Hoza (2007) has pointed out that most research on peer relationships, including the research focused on peer relationships in children with ADHD, has been conducted with school samples. This raises questions about the generalizability of the results

presented above and highlights the need for further research with clinical samples of children with ADHD. The current research involves a clinical sample to focus on patterns of peer-related behaviour that differ in children with and without ADHD.

Social-emotional immaturity, parenting, and peer outcomes. Children and youth with ADHD often present in their peer interactions as socially and emotionally immature (Wheeler & Carlson, 1994). This leads to social exclusion that is characterized by social skills deficits, emotional volatility, immaturity, and lack of insight (Shea & Wiener, 2003). However, there is a complex interplay between social-emotional development, parenting, and peer outcomes (Harborne, Wolpert, & Clare, 2004). Social-emotional maturity and parenting are closely linked and together they influence peer outcomes. In turn, peer interactions and friendships may affect social and personal growth and influence the family environment (Ciairano, Rabaglietti, Roggero, Bonino, & Beyers, 2007).

Social-emotional development. The ABCD (Affective - Behavioral - Cognitive - Dynamic) Model of Development (Greenberg & Kusche, 1993) suggests that emotional development is an important precursor to the development of cognitive and language skill. According to this model, the successful development of emotional knowledge and regulation is the foundation of the development of a broad range of social competencies (Greenberg, 2006). The model is based on the premise that the child's behaviour and internal regulation is a function of emotional awareness, affective-cognitive control, and social-cognitive understanding. During the process of maturation, components of emotional development precede and determine the later and more mature forms of

cognition. A direct implication of this model is that if there is a delay in affective development, it influences child's behaviours, cognition, and interpersonal relationships.

Childhood development is postulated by the ABCD model as a function of constitutional factors such as temperament and impulse control, sensitivity and nurturance in the environment, degree of trauma experienced by the child, and the quality of cognitive and linguistic stimulation present in the environment. Language serves as a behavioural and emotional control mechanism and is a mediator between intention and behaviour. Deficiencies in verbal self-control have been related to impulsivity and behavioural problems (Kendall & Braswell, 1993). Language also represents symbolically affective states and allows the child to verbalize their emotional states instead of enacting them through behaviour (Greenspan, 2001). This developmental model became the basis of the Promoting Alternative Thinking Strategies (PATHS) program, which was implemented in the school environment. The program was effective at one- and two-year followup for children with disruptive behaviour disorders (Greenberg, Domitrovich, & Bumbarger, 2001).

Children with disabilities often show uneven development in social interactions and have fewer social skills than their typically developing peers (Guralnick, Hammond, Connor, & Neville, 2006). Consequently, these children are less accepted by their peers, who perceive them as insufficiently socially competent (Geisthardt, Brotherson, & Cook, 2002). Social-emotional problems in childhood have been related to psychological difficulties such as intellectual deficits, depression, social withdrawal, learning disabilities, and conduct and impulse control disorders (Taylor, Peterson, McMurray-Schwarz, & Guillou, 2002; Wiener & Schneider, 2002). Such children have been found

often to select younger friends. This is attributed to an adaptation effort, where the child is seeking a friendship that will be easier and more developmentally and psychologically beneficial than a friendship with a same-age child (Epstein, 1989). When children with special needs are included in regular classrooms they typically engage in low levels of social interaction (Taylor et al., 2002). The difficulties are prominent when such children participate in unstructured activities such as playtime or recess. Children with mild developmental delays have been observed to show impaired ability for social participation, with higher levels of solitary play, more negativity and discontent during peer interactions, and great difficulty in dealing with conflict, expressed as negative or absent conciliatory strategies (Guralnick, 1999). Furthermore, their peer interactions are often easily disrupted by environmental changes.

These difficulties suggest underdeveloped peer-related social competence, which is conceptualized as the ability of children to successfully and appropriately select and carry out interpersonal goals (Guralnick, 1990). Peer-related social competence is supported by key cognitive processes such as encoding relevant social cues, accurately and meaningfully interpreting those cues, generation of potential social strategies, evaluating the effectiveness and consequences of a selected strategy, and enacting the strategy (Dodge, 1991). These processes represent higher order executive functions such as recognition of social tasks, monitoring of affect and activities, and sustaining attention to remain on task (Pennington & Welsh, 1995).

All these aspects of peer-related social competence are also impaired in individuals with ADHD. Children with oppositional disorders, conduct disorders, and ADHD have prominent behavioural, cognitive, and social difficulties. There is a core set

of behaviours, such as noncompliance, aggression, and tantrums, that mark intense emotional experiences. Poor impulse control and poor emotional regulation often lead these children to immature behavioural and emotional responses to social and interpersonal situations (McMahon, Long, & Forehand, 2011).

Parenting practices and peer relations. Although there is no evidence for direct causality between childrearing practices and socio-emotional and behavioural outcomes in children, there is definite support for the link between the family environment and the child's coping (Dunn, 2004). A study by Hetherington, Bridges, and Isabella (1998) suggests that school-aged children of recently divorced single mothers often manifest increased academic, behavioural, and socio-emotional problems compared to children of non-divorced mothers. Additionally, the divorced mothers reported more coercive and less positive parenting strategies than non-divorced mothers. After a 12-month parenting program and no intervention with the children, the change in the mothers' behaviours significantly predicted change in their children's behaviours at home and at school. The results from this study are further validated by more recent research. Child victimization such as maltreatment, peer victimization, property crime, witnessing family violence and exposure to community violence has been studied across three different family structure types: two biological/adoptive parents, single parent, step/cohabiting family. Results suggested elevated rates of victimization in single parent and cohabiting families (Turner, Finkelhor, Hamby, & Shattuck, 2013).

Family influences that contribute to children's peer-related social competence are: parental fostering of the child's peer social network, parental attitudes and beliefs about their child's social competence, importance of peer relations and strategies to assist

socialization, quality of parent-child interactions, and family risk factors (Guralnick & Neville, 1997; Guralnick, Neville, Connor, & Hammond, 2003). Parents support the development of prosocial norms by their own positive coping with frustration and distress, use of explanations about the impact of one's behaviour on others, and through being an active source of social support (Hoffman, 1994; Furman & Buhrmester, 1992).

The role of parents changes as their children mature and start engaging in more peer relationships. Social networks expand significantly during middle childhood (5-12 years of age) (Collins, Madsen, & Susman-Stillman, 2013). Five- to 12-year-old children spend more time than before with adults outside the family and with peers. The school environment increases the number and types of developmental tasks and influences that affect children. Among them is the considerable pressure to create and maintain connections with peers (Hartup, 1996). At that age, parents are still a source of emotional support and instrumental help (Collins et al., 2013). However, there is a fine balance between the need for parental oversight and the growing social competence and individuation of the children. By early adolescence, children are relatively skilled in planning and applying strategies for initiation, maintenance, and cooperation within peer relationships (Selman & Schultz, 1990). Parents of typically developing children spend less time in direct management of their children's peer relations than at earlier ages. By middle childhood impulsive behaviours have declined. Therefore parents have the opportunity to further promote self-regulation, stimulate exposure and discussion of socially valued behaviors, and provide rewards and punishment in accord with these standards (Cimpian, Arce, Markman, & Dweck, 2007; Kamins & Dweck, 1999). Self-regulation increases with maturity. Subsequently, parents of typically developing youth

have been found to develop new expectations such as increased autonomy, independence regarding tasks at home and at school, and social competence in peer-group activities (Hartup, 1984).

Children who present as socially and emotionally immature are at a disadvantage for optimal social development and require more oversight and assistance on the part of their parents (Parker & Asher, 1993). Due to delays in the development of self-regulation, parents of socially immature children need to continue closely supervising their activities and advising and mediating their social contacts (Yu, Ostrosky, & Fowler, 2011).

Parents of children with developmental delays reported that their children socialize more with younger children compared to typically developing peers (Yu, Ostrosky, & Fowler, 2011). The same group of parents stated that their child had friends whom they met at a place different from school and the neighbourhood, i.e., a family event, or parents' social event. They also reported significantly higher supervision of their child's peer interactions than the comparison group. These findings are in support of previous findings that children with developmental delays benefited from fewer linkages between playmates in school and playmates in their neighbourhoods, suggesting lesser continuity in social competence (Guralnick, 1997).

Socially-emotionally immature children often demonstrate maladaptive social behaviours, which are likely to evoke parental emotions that are different than those of the parent of a typically developing child (Bugental, 1992). The maladaptive and socially inappropriate behaviours of the child may activate negative feelings in the parent such as concern, lack of understanding, or anger. If the parental cognitions provoked by these feelings associate the child's behaviour with traits, intentions, and motives internal to the

child, the parent is more likely to use power assertive and restrictive disciplinary techniques (Colwell, Mize, & Pettit, 2002; Strassberg, 1995). Subsequently the interplay of parent and child beliefs, affect, and behaviours may create a family cycle of low support, hostility, and elevated stress (Dishion, Duncan, Eddy, Fagot, & Fetrow, 1994; Granic & Lamey, 2002). Research consistently supports the notion that socially incompetent behaviours are often modelled in the family and re-enacted by children in their peer interactions (Rubin, Bukowski, & Parker, 2011). Additionally, harsh, high power assertive and inconsistent disciplinary strategies, as well as excessive parental permissiveness, indulgence, and lack of supervision, have been found to contribute to the child's maladaptive social behaviours (Rubin & Burgess, 2002).

Childhood impulse disorders often coincide with parental interactions where the parents themselves have poor ability to control their affects, rarely communicate affects verbally, and show absence of joint planning (Greenberg, Kusché, & Speltz, 1991). Parenting characteristics such as warmth, responsiveness, and father's power assertion have been found to be negatively related to peer rejection and problematic social behaviour in boys with ADHD (Hurt, Hoza, & Pelham, 2007). These relationships were mediated by the construct of family loneliness, leading the authors to conclude that closeness in family interactions provides boys with ADHD with increased opportunities to learn more effective social skills.

Family and peer interactions. Opportunities for peer interaction and relationships vary from one culture to another. The power of peer interaction is likely to vary as a function of how much power is attributed to kinship structures (Schneider, 2000). Family life and communication with extended family are important for the development of social

competence. This competence then is transferred to the child's peer interactions and friendships. In a multicultural study comparing Canadian and Italian children, Schneider, Fonzi, Tomada and Tani (2000) found differences in negotiation skills and compromising behaviours. The Italian children needed less negotiation time to reach an outcome satisfying for both friends. The researchers suggested that extensive contact with family members had rendered Italian children more able to negotiate and compromise.

Moreover, the effect of peer systems on children and youth varies according to the type of parenting and level of parental support. According to Sullivan's developmental model of interpersonal relationships, the developmental significance of friendships will be higher for children whose relationships with parents are less than optimal (Sullivan, 1953). Children's friendships are influenced by the relationships they have at home with parents and siblings (Belsky & Cassidy, 1995).

Children who are rejected by their peers in the classroom turn for social contacts to other places such as the neighbourhood (George & Hartmann, 1996). However, the neighbourhood environment is often less supervised than classroom or organized sports activities. Neighbourhood characteristics have been found to exacerbate family difficulties and influence children's behavioural expressions such as aggression, substance use, or deviancy (Kupersmidt, Griesler, DeRosier, Patterson, & Davis, 1995). Conversely, authoritative parenting practices shared by more families in a community have been shown to have a strong and consistent positive effect on school performance and to foster positive peer culture in the neighbourhood (Cauffman & Steinberg, 1995 as cited in Steinberg, 2001).

The reasons why mutual friendships driven by similarity between the friends, such as the friendships of aggressive children, often exacerbate problematic behaviours are not well researched (Schneider, 2000). There is speculation that socially inappropriate or delinquent friendships are often found in conjunction with insufficient parental supervision. This raises the question whether lax parenting and absence of parental monitoring are not the elements promoting delinquent behaviours as opposed to the selection of friends (Cooper, Brooks, LeCroy, & Ashford, 1994). However, it is also possible that aggressive children and adolescents transmit their beliefs and social attitudes to one another. The adoption of the core values of friends may be an expression of social blending in, without much cognitive dissonance (Schneider, 2000).

Friendship: Definition and Characteristics

Friendship is a specific type of peer relationship that is seen as extremely significant for an individual's well-being (Fehr & Russell, 1991). Friendship can be defined as an intimate, personal and caring relationship, with attributes such as reciprocal tenderness and feelings of warmth, a reciprocal desire to maintain the relationship, trust, intimacy and openness of self as well as loyalty (Donelson & Gullahorn, 1977).

Friendship typically evolves over time and some of its aspects change with age. Young children emphasize the physical characteristics of their friends and ascribe great importance to play, prosocial behaviours (sharing toys), and absence of aggression (Furman, 1982). Older children, when defining a friendship, focus more on relational features, such as affection and support, than on common activities (Fehr, 1996). With age, the conceptualization of friendship also becomes more abstract. For instance, 7- to 9-year-olds describe friendship in terms of support (sharing/helping), association

(propinquity), intimacy, similarity (common activities), loyalty, commitment, and affection (Bigelow & La Gaipa, 1975; DeGoede, Branje, & Meeus, 2009; Furman & Bierman, 1984). In adolescence, the major dimensions of friendship remain the same as in childhood while its conceptualization becomes even more abstract. The main change, in comparison to childhood, occurs with respect to the ways in which friendship is described by adolescents. External characteristics, such as physical appearance, material possessions, and achievement decrease in importance (Tedesco & Gaier, 1988; Dwyer, Fredstrom, Rubin, Booth-LaForce, Rose-Krasnor, & Burgess, 2010), while relational features (support, loyalty) assume greater importance (Bukowski, Newcomb & Hoza, 1987; Bukowski, Motzoi, & Meyer, 2009). Loyalty and intimacy become central in adolescents' definitions of friendship (Berndt, 1986; Bukowski et al., 2009).

Individual friendships, regardless of the level of popularity or rejection of the friend or the quality of the friendship and eventual outcomes, are important for the future development of the child. High quality dyadic relations may protect children from the negative effects of peer isolation (Furman & Robbins, 1985). Moreover, close friendships may serve as a protective factor in the face of loneliness and may enhance the child's self-esteem by helping him/her feel less rejected. A friendship may also facilitate the acceptance of the child or young adolescent by his/her peer group (Heiman, 2005). Research suggests that important social characteristics, such as peer rejection and the nature of friendships of children and adolescents with ADHD, do not change over time for an individual child or adolescent (Bagwell, Molina, Pelham, & Hoza, 2001). This further increases the need for research and specifically for longitudinal exploration of the close friendships of individuals with ADHD.

The Concept of Friendship Stability

In a review article, Poulin and Chan (2010) examined *friendship stability* as a distinct friendship dimension that has been greatly disregarded by research. Friendship stability, according to Poulin and Chan, refers to a trend of resistance to change and is defined by the maintenance of the relationship over time. This definition emphasizes the overlap between friendship stability and maintenance, because they are presented as two social phenomena that affect each other. However, a need for conceptual clarity requires that friendship maintenance and friendship stability be regarded as distinct phenomena that contribute to the preservation of friendships.

Changes over time of friendship stability in childhood and adolescence.

Research on friendship stability during childhood and adolescence generally suggests that friendship stability tends to increase over time. Studies where friendship nominations were used as a measurement of friendship stability concluded that friendship stability increases across a relatively wide age range - between fourth and twelfth grade (Berndt, 1981; Epstein, 1983). However, this general trend does not represent a smooth and uniform progression. Children establish a greater number of friendships during first grade as opposed to children in fourth or fifth grade. However, children in first grade maintain only about 50% of their friendships across a school year, while fourth and fifth graders keep about 75% (Berndt, Hawkins, & Hoyle, 1986). Additionally, children's friendship networks tend to expand during a school year as opposed to summertime (Chan & Poulin, 2007).

Another trend of relative instability and rapid friendship network growth has been noted in early adolescence (grade 7). During this time, one-third to one-half of

friendships were found to be unstable (Bowker, 2004; Cantin & Boivin, 2004; Chan & Poulin, 2007), with youth regularly losing friends and forming new friendships with unfamiliar peers (Hardy, Bukowski, & Sippola, 2002). Friendship stability increases again around grade 8 and above. At that time, adolescents keep 50%-75% of their friendships over a school year and tend to lose more old friends than they gain new ones (Berndt et al., 1986; Degirmencioglu, Urberg, Tolson, & Richard, 1998; Claes, 2003). This non-linear trend of child and adolescent friendship stability has been attributed to transition to a new school environment, which typically happens around grades 1 and 7 (Eccles, Lord, & Buchanan, 1996). However, previous work has demonstrated that in early adolescence the same level of friendship instability is observed in the period preceding the transition to high school (Cantin & Boivin, 2004). These results suggest that adolescence prior to and around grade 7 is probably marked by interpersonal instability that accompanies maturation.

Predictors of stability and instability of friendships in childhood and adolescence. There are several factors that account for friendship stability. These factors can be grouped into individual, relational, and contextual factors (Poulin & Chan, 2010).

Individual factors. Based on social development and evolving social need, a marked progression has been noticed from childhood to adulthood in terms of the subjective need for friendship stability (Sullivan, 1953). In childhood, the conception of friendship is deemed based on concrete actions and situations, sharing common activities (Newcomb & Bagwell, 1995) or helping one another (McDougall & Hymel, 2007). Therefore, the stability of friendships has been found to be closely related to the child's presence and participation in actions and situations that meet his/her social needs. From

late childhood to adolescence there tends to be a decreased emphasis on sharing activities with friends, which is replaced by a growing concern for sharing secrets, worries, and ambitions (Berndt & Perry, 1986). Additionally, the emphasis on individuality increases while attempts to control the relationship and tendencies towards conformity between friends decrease (Shulman, Laursen, Kalman, & Karpovsky, 1997). Satisfaction, companionship, admiration, and reliable alliance also tend to decline (Laursen, 1996). Conversely, there is an increase of intimacy and affection (Furman & Buhrmester, 1992). Therefore, friendship stability at that period can be seen as contingent upon the youth's ability to master the necessary skills to satisfy these social expectations.

During adolescence, parents have been observed to be less directive and influential regarding their children's choices of friends (Claes, 2003; Mounts, 2000). However, the greater autonomy and decreased parental interference in a youth's social interactions may exacerbate pre-existing difficulties with peer relations and establishing friendships. In such cases, although it is expected that friendship stability should increase due to psychosocial and cognitive maturity, individuals with social difficulties have been hypothesized to have fewer friends in comparison to the majority of their peers (Matheson, Olsen, Weisner, & Dykens, 2007). The friend's personality and character traits are also considered to be predictors of friendship stability, since both friends have a unique and interdependent influence over each other, which contributes to a balanced relationship (Werner & Crick, 2004). The general attraction between peers who are similar to one another was found to be an aspect promoting relationship equality and cooperative interactions (Aboud & Mendelson, 1996). Furthermore, this general attraction was found to contribute to the creation of a compatible and stable friendship

environment, which typically fosters greater behavioural similarity between the friends over time (Poulin & Boivin, 2000).

Additional individual factors which have been found to predict friendship stability are affective and intellectual involvement in the relationship, level of satisfaction with the relationship, commitment to the relationship (defined as the intent to persist in a relationship), and lower quality of the possibilities for alternative friendships (Rusbult, Martz, & Agnew, 1998; Bui, Peplau, & Hill, 1996). Commitment was found to be the most powerful predictor of persistence in friendships. It also mediates the effects of satisfaction with the friendship, the view of possible alternative friendships, and affective and intellectual involvement (Branje, Frijns, Finkenauer, Engels, & Meeus, 2007). An important factor that predicts the stability of best friendships was found to be quality of alternatives (Branje, et al., 2007). Overall, among adolescents involved in stable friendships, those who reported higher levels of satisfaction, investment, and commitment in their friendships and lower quality of alternatives (i.e. alternative friends) had a decreased tendency to switch friends (Branje et al., 2007).

Relational factors. *Relational factors* refer to the congruence of the child and the friend on various attributes such as gender, age, race, etc. In this aspect, friendships are considered most likely to be formed and maintained between children and youths who are similar to one another (Crosnoe, 2000). With regards to relational factors, the stability of friendships during childhood has been found to be contingent upon sex (Claes, 2003), race (Aboud & Janani, 2007), and positive friendship features (Schneider, Fonzi, Tani, & Tomada, 1997; Branje et al., 2007).

Children find same-sex play partners more compatible, segregate themselves into same-sex groups, and have been found to have mostly same-sex friendships (Maccoby, 1990; Rose & Rudolph, 2006). A study assessing the relationship of same-sex friendships and antisocial behaviour revealed that same-sex best friendships prevail and remain more stable compared with opposite-sex friendships until the sixth or seventh grade (Arndorfer & Stormshak, 2008). The frequency of opposite-sex best friendships was found to increase from grade 8-11. During adolescence, the nature of friendships has been deemed different between boys and girls (Cairns, Leung, Buchanan, & Cairns, 1995). This is considered to affect the general level of friendship stability. Girls' friendships were found to be typically more exclusive and intimate than boys' friendships. Girls also were noticed to have smaller friendship networks and attribute higher quality to their friendships than boys (Brendgen, Markiewicz, Doyle, & Bukowski, 2001).

Age is another factor that is found to play a role in friendship formation. Specifically, a trend has been noticed for selecting same-age friends that is most prominent during elementary and high school. In interviews, children and adolescents reported that they perceived meaningful differences between themselves and individuals in the next grade down (Cook & Cook, 2005). Additionally, same-race selectivity tends to emerge in friendship formation during childhood and adolescence (Shelton, Richeson, & Bergsieker, 2009). In a study of racial attitudes among elementary school students, cross-race friendships were found to decline with grade. Among fifth-graders, cross-race friendships were found to be less stable than same-race friendships (Aboud, Mendelson, & Purdy, 2003). Cross-race friendships, once formed, differed significantly from same-race ones with respect to intimacy, wherein cross-race friendships were rated lower.

Finally, another group of relational factors includes *friendship quality*. Friendship quality refers to the level of positive features within the friendship such as intimacy, self-disclosure, prosocial behaviour, self-esteem, and support, as well as a low level of negative features such as conflicts, dominance attempts, and rivalry (Berndt, 2002; Branje et al., 2007). Poorly adjusted children have been found to have friendships of poorer quality and lesser stability in comparison to the friendships of well-adjusted children (Cairns, Cairns, Neckerman, Gest, & Garipey, 1988). The stability of the friendship has been found to depend on use of effective conflict resolution strategies. In friendships amongst girls, conflict resolution strategies tend to be confrontational and assertive, while in boys this involves mainly the minimization of problems (Bowker, 2004).

Contextual factors. Among the contextual factors that contribute to friendship stability in childhood and adolescence are the social and physical environments in which the friendship develops. Environments that have been found to promote friendship stability are family (Arranz, Freijo, Oliva, Olabarrieta, Martín, Manzano, & Richards, 2006), school (Neckerman, 1996), neighbourhood (Kiesner, Poulin, & Nicotra, 2003), and leisure activities (Mahoney, 2000).

Family, especially in childhood, is considered to play a crucial role in the establishment and continuity of friendships. Many parents organize play dates for their children, where they socialize with others their age. Parents also assist children in their friendships by allowing them to invite friends over for play or celebration of special events (Mikami, Lerner, Griggs, McGrath, & Calhoun, 2010). Attachment and social support theories suggest that children who have emotionally supportive parents will have

similar types of relationships with their friends (Cauce, Mason, Gonzales, & Hiraga, 1996). Family relationships were found to be positively associated with perceived quality of relationships with friends. Furthermore, family relationships had a stronger effect on change of perceived friendship quality than self-esteem (Way & Greene, 2006). Family also plays a role in modulating friendships. For instance, Asian-American youth have been found to be more likely than African-American or Latino youth to report that their parents discourage non-familial friendships (Way & Chen, 2000). In adolescence, however, perceptions of family and school climate had a similar effect on explaining variance in friendship quality (Way & Pahl, 2001).

There is considerable research that suggests that school greatly facilitates friendships in children and youth (Crosnoe & Needham, 2004). It assembles children who are closer to each other in terms of developmental level, who often live in the same neighbourhood, and who tend to come from similar socioeconomic backgrounds. Elements of the school environment that most likely influence social development and adjustment include: student-student relationships; teacher-student relationships; and feelings of safety and security in the school (Eccles & Roeser, 2003). A longitudinal study in urban ethnic minority adolescents examined trajectories of change in same-sex friendship quality and the effects of gender and race on these trajectories (Way & Greene, 2006). The findings indicated that the student-student relationships and teacher-student relationships model ways of establishing and maintaining close relationships. The support received from teachers and other students also was found to help children and youth find and maintain supportive friendships (Way & Greene, 2006). Schools have been found to further increase friendship formation through extracurricular activities where children

meet and get to know each other (Mahoney, Larson, & Eccles, 2005). Neighbourhood, similar to school, has been regarded as a factor determining friendship formation through two mechanisms: propinquity, or closeness in physical space, and similarity, which is the attraction to individuals with whom one shares characteristics, behaviours, and attitudes (Crosnoe, 2000; Schneider, Wiener, & Murphy, 1994). Therefore, initiation of friendships can be considered to be guided by opportunities to meet, while friendship stability is more contingent upon forces that increase the attractiveness of the friend.

Leisure activities that promote friendship can be found in different environments (Eccles & Gootman, 2002). Children and youth engage in activities enabled by parks and recreation services, museums, youth centres, school-sponsored and after-school activities, and community service programs. All these include specific types of activities such as sports, music, hobby clubs, social clubs, etc. (Roth & Brooks-Gunn, 2003). Studies designed to examine friends' participation in leisure activities found that age and sex have a significant influence on involvement in leisure activities (Mathur & Berndt, 2006). Eighth graders participated in more leisure activities with friends as opposed to fourth graders. Boys participated in more activities as opposed to girls. Students who participated in more activities with their friends perceived more positive features in their friendships. The importance of leisure activities in the context of friendship was confirmed by an fMRI study on neural sensitivity to social threats during young adulthood and the amount of time young adolescents spent with friends outside of school. Results suggested that young people who spend more time with friends and have more positive relationship experiences may be less sensitive to negative social experiences later in life (Masten, Telzer, Fuligni, Lieberman, & Eisenberger, 2010)

Each environmental context plays a unique role in the child's development as different contexts expose the child to varied and distinct behaviours (Kiesner et al., 2003). Stability of friendships has been found to vary according to the nature of the context and the child's involvement in the behaviours there. Multi-context friendships were found to be more stable than single context friendships (Chan & Poulin, 2007).

To summarize, friendship stability is a distinct friendship dimension, which relies upon individual, relational, and contextual factors. An optimal combination of these factors contributes to the stability of friendships over time. Although there is a general trend for increased friendship stability across time, it is not a smooth and uniform progression.

Temporal Development of Friendships

The majority of studies exploring friendship development are conducted with typically-developing children and youth (Mikami, 2010). However, the results of these studies are not fully applicable to individuals with ADHD. Nevertheless, such studies are critical for outlining a developmental trajectory that allows the formulation and refinement of hypotheses regarding the development and maintenance of friendships in individuals with ADHD.

Research with typically-developing children and youth suggests that there is a natural tendency for friendships to deepen and grow in importance as the child ages and as the friendship progresses (Buhrmester, 1990a). Furthermore, friendships themselves are characterized by developmental trajectories as they tend to be organized differently during the beginning, middle, and end (if there is one; Berscheid & Reis, 1998), as they evolve from initial acquaintanceship to close/intimate friendship. These developmental

stages within friendship reflect the phases of initiation, maintenance, which tends to be the longest phase in any friendship, and sometimes dissolution (Blieszner & Roberto, 2004). *Friendship maintenance* entails a stable level of intimacy, good relational repair, and satisfaction of the partners (Dinida, 2000). However, to date, little research has been devoted to the exploration of friendship maintenance in childhood and early adolescence. This void can be partially filled by research on friendships throughout the lifespan, because it reflects a number of aspects that are important descriptors of temporal changes in any friendship.

The social penetration theory. The *social penetration theory* (Altman and Taylor, 1973) is a framework that conceptualizes the process of relationship development, which makes it relevant to the development of friendship processes as well. Altman and Taylor postulate relationship development as a linear process from superficial exchanges of information to more personal interactions. The process involves increased frequency of communication (breadth of penetration) and increasingly more intimate disclosures (depth of penetration). According to the theory, relationship development is generally systematic and predictable. One of the elements that are at the core of relationship development is self-disclosure. A basic premise is that the individual's "self" has an extrinsic layer, which is the public self, and an intrinsic level, which is the private self. Each individual has a breadth of subjects (areas of great personal and affective importance) and each subject has a depth: from surface presentation to deep personal meaning. Penetration is the disclosure of self to another across the breadth of subjects. Key to the process of self-disclosure is the need for reciprocity of self-disclosure. Relationships that deepen and move forward demonstrate the penetration process.

The social penetration theory postulates that relationships pass through four stages of development. The first stage is orientation, which is revealing of the public self to the other person. The second stage is exploratory affective exchange, which involves more shallow self-disclosure across a wide breadth of topics, or exposure of deeper intimacy on a narrower breadth of topics. The third stage is full affective exchange, which is deeper self-disclosure on a wider breadth of topics. The fourth stage is stable exchange, which is efficient communication with good empathy and accuracy, allowing the relationship partner to access some topics at full depth. The orientation stage has the least breadth and depth of social penetration while the stable exchange stage has the broadest and deepest disclosure pattern. When there is a moving backward, or dissolution of a relationship, Altman and Taylor conceptualize it as a reverse process, which they name depenetration.

Relationships, as conceptualized by the social penetration theory, are governed by mutually reciprocal self-disclosure with varying breadth and depth. The depth and breadth determine the level of closeness within the relationship. At the start, while at a more superficial level, the penetration is rapid. It slows as more intimate levels are reached. The social penetration exchange is regulated on the basis of rewards and costs, which puts the social penetration theory in close proximity to the social exchange theory of George Homans (1958). The social penetration theory views relationships in economic terms, stating that they are based on rewards such as satisfaction, pleasure, and contentment, and costs such as avoidance of punishment, i.e. negative feeling. If the reward/cost ratio is in favor of reward, and the benefits outweigh the cost, the social penetration - and with it the relationship - will continue. The benefit/cost ratio determines

the penetration/depenetration trajectory of a relationship and is viewed as dynamic and cyclical (Taylor, & Altman, 1987).

Although the social penetration theory is parsimonious and has a substantial explanatory value, it also has a number of limitations. Openness and self-disclosure, although key, need to be considered in conjunction to privacy. Additionally, friendships are often embedded in other relationship systems such as family, peer group, academic or work environment, and cannot proceed linearly, but run in parallel and are heavily influenced. Therefore, the social penetration theory is limited by being postulated as a linear relationship development where disclosure of information and the balance of rewards and costs govern the relationship (Werner, Altman, & Brown, 1992).

In a more recent development of the theory, Werner, Altman and Brown (1992) postulate self-disclosure as a dialectical process. Relationships do not always follow linear development, but oscillate between closeness and distance. Periods of social penetration may be followed by periods of depenetration. This dialectical view reflects the psychological aspects of self-disclosure, where the individual is guided by both a desire to disclose information and a tendency to want to conceal. This development of the social penetration theory recognizes the value of concealment of certain information in order for the relationship to continue successfully.

Further research in long term friendship processes, however, suggests that expression of intimacy is not as strong a predictor as postulated by the social penetration theory. A small sample, longitudinal study in sustained closeness between friends (Ledbetter, Griffin, & Sparks, 2007) stresses factors such as time invested in the relationship and similarity in thinking and clarity of communication of the two partners.

However, behaviours such as expression of intimacy were not found to be a significant factor. Such behaviours may develop an initial level of closeness, but their importance decreases as the friendship progresses (Jourard, 1971). Conversely, a measure of the months of friendship spent at the initial stage predicted relational closeness 19 years later. It is speculated that time, as an irretrievable resource invested in a relationship, is a valuable commodity which increases commitment to maintaining the friendship (Ledbetter et al., 2007). This is consistent with the interdependence theory (Rusbult, 1980), predicting that investment of irretrievable resources over time serves as an incentive to maintain the investment so those resources are not lost. Therefore, friends that spend more time together, with cognitions and behaviours that are closely linked, seem more likely to remain together.

Friendship-maintenance behaviours. Friendships that have developed beyond the initial stages are characterized by a number of implicit and explicit behaviours. These are intended to maintain the friendship. The implicit behaviours involve factors such as shared conversation topics, engagement in mutually enjoyable activities and shared mundane activities (Fehr, 1996). Though adult research suggests that both men and women enjoy both activities and conversation in their interactions with close friends (Walker, 1994), there is a difference between the sexes in the typical topics of conversation. In interview studies exploring perceptions of conversation in same- and cross-sex close friendships, men have been found to mostly choose topics such as women, sports, fighting, vehicles, work, and computers (Fehr, 1996; Martin, 1997). Women, on the other hand, have been found to focus conversations on relationships, men, clothing, and needs and feelings. Some shared mundane activities that have been found to

be implicitly important in the process of friendship maintenance are socializing over food and drink, giving a ride, etc. (Duck, 1994).

Explicit behaviours and strategies for friendship maintenance have been found to vary according to the nature of the relationship and the stage of its development (Canary & Stafford, 1994). Adult participants in a study of relational maintenance strategies ranked self-disclosure and supportiveness as the most common behavioural strategies for maintenance of close friendships (Canary, Stafford, Hause, & Wallace, 1993). The next-best strategies, according to the same study, were spending time together and attempting to make interactions pleasant. In interviewing older adults, Matthews (1986) found that friendships can be differentiated on the basis of commitment. Highly committed friendships were characterized by active maintenance. By contrast, friendships low in commitment were maintained on a circumstantial basis, depending, for example, on residential proximity or participation in same group activities. Other work in adult students indicated that same-sex friendship-maintenance strategies included factors such as acceptance, effort and time invested in the friendship, frequency of communication, and common interests (Rose, 1985). Maintenance strategies for casual and best friendships were found to differ only in terms of required proximity. Close and best friendships relied less on proximity, but still required affection, and a considerable amount of interaction (Rose & Serfaica, 1986).

In more recent studies of friendship-maintenance behaviours in young adults, Oswald and colleagues (2004) confirmed that the friendship-maintenance behaviours of positivity, supportiveness, openness, and interaction between the friends were of key importance. Maintenance behaviours differed by friendship status, as best friends were

found to engage in more maintenance behaviours than close or casual friends. When interdependence of friendship-maintenance behaviours in dyads was explored, the results indicated that both friends were reciprocal in maintenance behaviours. They perceived their friendship as equitable and displayed agreement with their friend's self-reported maintenance behaviours. Additionally, both friends' self-reported friendship-maintenance behaviours predicted the dyad's level of satisfaction and commitment to the friendship.

These friendship-maintenance behaviours are considered to be a major protective factor against *friendship deterioration*. In an interview study, high-school friends transitioning to college reported having more difficulties with their best friendships due to a decline in satisfaction, commitment, and investment (Oswald & Clark, 2003). However, *communication*, defined as the exchange of thoughts and emotions with the friend, was found to regulate tendencies towards friendship deterioration. Furthermore, individuals who succeeded in preserving their best friendships were engaged in more maintenance behaviours such as positivity, supportiveness, and interaction.

In summary, friendship-maintenance behaviours are major protective factors for friendship preservation and enhancement. There are a number of implicit and explicit behaviours that are associated with the maintenance of friendships. Strategies for friendship maintenance vary according to the stage of development and status of the friendship. However, the presence of friendship-maintenance behaviours implies the presence of underlying factors, described below, which support such behaviours.

Interactional processes in friendship maintenance. The process of friendship maintenance relies upon a number of *interactional processes* and situational conditions such as perceptions of similarity on key attributes, mutually shared interests, self-

disclosure and empathic understanding, intentional efforts to sustain the friendship, feelings of trust and affection, expressions of social support, and effective strategies for resolving disagreements (Fehr, 1996). Although these features need to be present in the friendship, they can vary in degree and change with time. Therefore, the continuation of a friendship does not necessarily mean that all of its features are positive or stable (Adams & Blieszner, 1998).

Interactional processes underlying friendship success in childhood and adolescence. An understanding of the processes that are prerequisites for successful friendships is important in understanding the evolution of friendship over time. Communication abilities are a key component of the interactional process (Burlison, Metts, & Kirch, 2000). Communication is required for successful friendship, and varies as a function of the understanding and expectations individuals have for their friendships. As understanding and expectations of friends change over time so do the *communication competencies* needed to sustain a mutually satisfying friendship (Samter, 2003). Communication competencies can be divided into four broad categories: affect management, which includes comforting, ego support, and self-disclosure; interaction, which includes communication initiation and management; entertainment, which includes storytelling, gossiping, and joking; and relational repair, which includes conflict management (Burlison, et al. 2000). In a review paper, Samter (2003) emphasizes that emotion regulation, pragmatic skills, and sociability enable children to engage their peers in interaction and, through repeated engagement, to move from acquaintanceship to friendship. The literature also suggests that conflict management is closely tied to friendship maintenance (Samter, 2003). All four categories of communication

competencies can be presumed to be important in friendship maintenance. However, research exploring this area is scarce. Therefore, inferences about the role of communication competencies in friendship maintenance need to be drawn from the literature about friendship and peer competence in general.

Interactional competencies in childhood. Interactional competencies are the basis of successful interpersonal interaction. They start developing in childhood and are an inseparable aspect of friendship interactions. Emotion regulation, although hypothesized to contribute mainly to friendship establishment, is a relational process that is a vital component in friendship maintenance. Affect is hypothesized to be an essential part of the social-cognitive processes that underlie behavioural production during social situations, friendships included (Olsson, 2011). In a review of developmental progression of emotional competence through middle childhood, Denham (2007) concluded that children who control their emotional reactions in a socially-appropriate manner are better able to reflect upon difficult or problematic situations that arise within their friendships.

Research on peer acceptance provides valuable data that indirectly support conclusions about childhood friendships, because childhood friendships are formed in the context of peer acceptance and centre around it (Buhrmester, 1990b). A study with preschoolers featuring a 10 month followup indicated that children differ in their ability to identify various emotional displays. Popular children (i.e. those who are well-liked by peers) were better able to identify various emotional displays than unpopular children (Denham & Holt, 1993). Furthermore, in research on affect production, popular children were found to often display positive affect, whereas children who are rejected frequently exhibit negative affect (Carson & Parke, 1996). Children who were emotionally positive

and normatively expressive were also found to respond to hypothetical peer dilemmas with socially-appropriate emotional reactions and prosocial behaviour choices (Denham, McKinley, Couchoud, & Holt, 1990). Children who were emotionally negative and non-normatively expressive tended to respond to the same dilemmas with anger and aggression. A connection of socially appropriate emotion regulation with friendship maintenance is implied by a multimethod study in peer relationships. The research findings suggested that children who are more accepted by their peers are involved in more reciprocal friendships marked by mutual responsiveness (Kerns, Klepac, & Cole, 1996). These studies suggest that popular children are more prosocial in their affective relations with peers, and also more effective in their friendships. This implies that socially appropriate emotion regulation most likely plays a role in friendship maintenance.

Samter (2003) speculates that *pragmatic skills* are closely related to the give-and-take interaction that is a typical aspect of friendship, and that these skills are an inseparable part of friendship maintenance. Pragmatic skills involve the appropriate use of language within a specific context (Gertner, Rice, & Hadley, 1994). The skills through which children engage their friends in conversation include the ability to take turns, respond when spoken to, maintain coherent discourse, be a receptive listener, make appropriate requests, and communicate clearly. An observational study in preschoolers exploring language competence and its relation to social focus demonstrated that popular children possess better language competence compared to unpopular ones (Nærland, 2011). The ability to make requests is considered to be of great importance in childhood. Observational studies with young children have revealed that requests account for 25%-

50% of young children's utterances (Dore, 1977; Ervin-Tripp, 1977), and a child's social status was found to determine the kind of requests that he/she will address towards peers. Dominant 4- to 5-year-olds used more direct requests, while more submissive children made fewer and more indirect requests, especially when communicating with their more dominant peers (Wood & Gardner, 1980). With an experimental study, Place and Becker (1991) demonstrated that 10- and 12-year-olds who were rated as more likable, attractive and intelligent demonstrated higher pragmatic competence when making requests (e.g. taking turns, avoiding interruptions, using polite speech).

Mutual enjoyment of interactions and activities has been shown to be an important factor in friendship maintenance (Nangle, Erdley, Newman, Mason, & Carpenter, 2003; Newcomb, Bukowski, & Pattee, 1993). Sociometric studies in children who developed and maintained friendships while attending summer camp suggested that these children were viewed by their peers as having a good sense of humor and engaging in playful teasing (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006; Parker & Seal, 1996). Conversely, children who remained friendless were seen as shy, timid, preferring to play alone, or not able to take teasing and easily angered. Children who had friends, as opposed to friendless children of the same age, were also found to engage in behaviours that led peers to conclude that they were entertaining, pleasant to converse with, and desirable for social interaction (Asher & Williams, 1987).

Conflict management is considered to be an inseparable part of friendship maintenance. Although episodes of disagreement may prevent children from establishing friendships, review of the friendship research literature suggests that conflict is an inevitable part of already established friendships (Samter, 2003). An observational study

of interpersonal conflicts among preschool children revealed a level of conflicts per child ranging from 8 to 47 conflicts per child during the time of the study. The rates of conflict behaviour among friends revealed considerable individual and dyadic differences (Houseman, 1972 in Samter, 2003). Typically, young and immature children often see the cause of conflict as unilateral, i.e., one of the parties is fully responsible (Selman, 1981). With maturation, children have been found to become more capable of recognizing that conflict is inherent in all close relationships and all participants share responsibility. Therefore, with age there arises a necessity for effective and acceptable conflict resolution strategies that satisfy both parties (Hartup, 1989a, p. 60). A multimethod study of 2,384 school-aged children indicated that by mid-childhood, children were able to distinguish between minor conflicts and conflicts that threaten the existence of the friendship (Hartup, & Abecassis, 2002).

An observational study of conflictual behaviour revealed that conflict interactions between friends vary according to whether children are in *closed-field* versus *open-field settings* (Hartup, French, Laursen, Johnson, & Ogawa, 1993). Closed-field settings are when children occupy small spaces, when resources are limited, when play equipment requires joint use, and when partners cannot be easily switched. In such settings, because there is little danger that friendship interaction will dissolve, friends come into conflict more frequently and more intensely than non-friends. In contrast, open-field settings are characterized by large spaces, fewer limitations on resources, and a variety of play partners. In such settings, friends have been found to come into conflict less frequently and less intensely than non-friends (Hartup, 1989b; Nelson & Aboud, 1985; Rubin, Fredstrom, & Bowker, 2008).

With maturation, children acquire more opportunities for open-field interactions. Therefore, the success of older children's friendships becomes contingent upon behavioural routines that enable them to negotiate with one another, to reach equitable solutions, to compromise (as opposed to demanding or asserting), and to disengage when conflict becomes too intense (Samter, 2003). Observational laboratory research promotes the hypothesis that for younger children, the sensitive negotiation of conflict is less salient compared with the ability to disengage when conflict arises (Parker & Gottman, 1989). However, observational research on ambiguous situations such as rough-and-tumble play supports the hypothesis that peer-rejected children tend to interpret their partner's intentions in an ambiguous situation as hostile (Dodge & Frame, 1982; Olson, & Dweck, 2008). Peer-rejected children have also been found to underestimate their own degree of aggression and overestimate their level of social competence (Kupersmidt, Coie, & Dodge, 1990; Steenbeek, & van Geert, 2008). This line of research is consistent with the finding that among fourth- and fifth-graders the number and quality of friendships that children reported was negatively associated with their perception of hostile strategies as an acceptable means of conflict management (Rose & Asher, 2000).

In sum, interactional competencies such as emotion regulation, socially competent use of language, mutual enjoyment, and appropriate conflict management strategies are greatly involved in friendship interactions in childhood. There is also evidence that they are probably inseparable aspects of friendship maintenance in childhood.

Interactional competencies in preadolescence and adolescence. During adolescence, children further develop the capacity to take the perspective of a third party. This ability leads to enhanced cognitive and affective awareness that human interactions

are mutual and that fulfilling relationships result from joint effort (Selman, 1981). Preadolescence has been found to be the period during which friends are better able to identify each other's emotions (McGuire & Weisz, 1982). Interview studies suggest that boys with best friends show a higher level of intimacy, attachment, frankness, spontaneity, sensitivity, expressivity, and sharing in their interactions with others than boys who lack best friends (Mannarino, 1978; Weimer, Kerns, & Oldenburg, 2004). Furthermore, a progression has been noticed from childhood to adolescence in intimacy and selflessness in favor of the friend. In interviews exploring friendship criteria, 9- and 10-year-olds reported their friends as reliable and supportive and stated that they would be willing to risk their own safety to help a partner. Young adolescents (12 and 13) believed that best friends were obligated to put their friend's wishes and well-being before their own (Berndt, 1981 & 2002).

The pragmatic competencies that are important in childhood were found to retain importance in preadolescence and adolescence. Reviewing the pertinent literature, Samter (2003) concluded that the components that emerge as being important in adolescence are verbal and nonverbal responsiveness and the ability to initiate and sustain conversation. Observational studies of verbal responsiveness with young adults demonstrated that content and structure of conversations varies according to levels of loneliness. Lonely individuals were found to make fewer statements focusing on the partner, changed the topic of the discussion more frequently, responded more slowly to the partner's previous statements, and asked fewer questions in comparison to individuals with friends (Jones, Hobbs, & Hockenbury, 1982; Rotenberg, 2010). Lonely individuals also tended to be

generally more passive and non-talkative in comparison to individuals with friends (Bell, 1985; Heinrich, & Gullone, 2006).

Nonverbal responsiveness such as gaze and expressivity has been associated with initiation of friendly contact and evaluation. For instance, research with adolescents indicates that nonverbal expressiveness is positively associated with how much their partners like them (Riggio, 1986; Riggio & Carney, 2003). The ability to initiate and sustain conversation has also been found to be important in the initial phase of friendship (Buhrmester, Furman, Wittenberg, & Reis, 1988; Riggio, 2010). However, multimethod studies reveal that the ability to maintain conversations in already established friendships is least highly correlated with initiation competence and most highly correlated with self-disclosure, emotional support, and conflict management (Buhrmester et al., 1988). Therefore, it can be presumed that nonverbal aspects of communication decrease in importance in already established friendships, while self-disclosure, emotional support, and conflict management become more important.

There is some further evidence that self-disclosure is important for friendship maintenance. In adolescence, self-disclosure increases in both breadth and depth as the friendship progresses (Altman & Taylor, 1987). Interview research provides evidence suggesting that adolescents actively employ intimate disclosure as a way to sustain and enhance their friendships (Rosenfeld & Kendrick, 1984). When the target of self-disclosure was a friend, the three main reasons for disclosing were reported to be relationship maintenance and enhancement, self-clarification, and reciprocity. Additional reasons for self-disclosure are self-clarification, expression, and social validation (Petronio, 2002).

Research suggests that friends can be distinguished from non-friends in terms of quantity and quality of self-disclosure. An interview study on intimate conversations in close relationships revealed that female students, in telephone conversations with close friends, disclosed more personal information, especially about intense feelings and judgments, compared to conversations between acquaintances (Hornstein & Truesdell, 1988). An observational study of emotionally loaded conversation between early adolescent friends found that when friends responded to participants' emotion talk supportively, rather than dismissively, participants were more likely to further disclose emotions (Legerski, Biggs, Greenhoot, & Sampilo, 2014).

Close friendships have also been found to be marked by enhanced self-disclosure about non-intimate topics. In a longitudinal study of friendship development among college students Hays (1985) found that there was more casual and superficial disclosure among friends than there was intimate disclosure. Similarly, Won-Doornink (1985) observed that college-age best friends exchanged only a moderate amount of personal information as compared to close acquaintances. Evidently, speculates Rose (1985), self-disclosure, as a form of everyday talk, is considered among the primary mechanisms of implicit friendship maintenance.

There is evidence that throughout adolescence conflict management remains valuable. However, it is not as frequently employed as in childhood, due to already developed skills in conflict management. In research on relationship conflict, adolescence friendships were found to increase in intimacy, and decrease in negativity, with time (Cupach, Canary, & Spitzberg, 2009). Conflicts with friends were hypothesized to become less intense in comparison to conflicts with siblings, parents, or other peers

(Laursen, 1993; Van Doorn, Branje, VanderValk, De Goede, & Meeus, 2011). Interviews have suggested that adolescents tend to distinguish between minor transgressions, such as engaging in annoying behaviours, and major ones, such as betraying confidence or trust (Hartup & Laursen, 1993). They also recognize that they can support a friend as well as conflicting with him/her (Berndt & Perry, 1986). Therefore, when conflict arises, adolescents are capable of understanding a friend's motivation and can recognize others' legitimate reasons for their behaviour (Cupach et al. 2009).

In regards to conflict management in young adult friendships, a multicultural study was instrumental in the identification of four sets of informal rules that are considered relevant to sustaining the relationship (Argyle, Henderson, Bond, Izuka, & Contarello, 1986). These rules were: exchange rules, which postulate that friends should repay debts and favors; intimacy rules, e.g., friends should trust and confide in one another; third-party rules indicating that friends should be tolerant of each other's relational choices; and coordination rules, e.g., friends should respect one another's privacy. However, when conflict engagement is necessary, strategies such as focusing on the needs and desires of both parties have been found to be highly related to friendship success (Ickes & Hodges, 2013; Sillars, 1981). Young adults who, during interviews regarding their perceptions of partnership, reported that they discuss conflict in a sensitive manner, with conciliation and apology when needed, also reported a higher level of satisfaction and adjustment in their friendships (Canary & Spitzberg, 1990; Cooper & Buchanan, 2010; Waldo, 1984).

In sum, during preadolescence and adolescence there is a tendency for increased affective awareness, development of verbal and non-verbal communication skills, conflict

management abilities, and an increase in self-disclosure among friends. This distinct progression of interactional competencies has been found to affect strategies of friendship maintenance. However, precedent literature is scattered among different disciplines and sometimes not precisely focused on close friendships. Therefore, conclusions regarding friendship maintenance in adolescence have been mainly speculative in nature.

Close Friendships in Youth with ADHD

In general, research regarding friendship in children and youth with ADHD is less developed than the study of general, large-group peer relationships in children and youth with ADHD (Mikami, 2010). There are very few empirical studies in the area of friendship and ADHD, with only a single study examining friendship stability (Blachman & Hinshaw, 2002). When friendship quality is examined, researchers have collected self-reports from children with ADHD (Blachman & Hinshaw, 2002; Heiman, 2005). They have also examined characteristics of the friend, such as whether or not the friend has ADHD and the presence or absence of deviant behaviour (Bagwell et al., 2001; Marshal, Molina, & Pelham, 2003). Multimethod studies that use methodologically sophisticated tasks to assess friendships of youth with ADHD are scarce (Normand, Schneider, & Robaey, 2007). There appear to be no studies that use observational methodology to assess friendship patterns in adolescents with ADHD (Mikami, 2010).

Most studies of close friendships of children and adolescents with ADHD focus on the existence of the friendships, but do not describe their quality, friendship-maintenance aspects or stability (Blachman & Hinshaw, 2002). A small observational study ($n = 24$) that focused on children with ADHD and their interaction with friends suggests that the friendships of children with ADHD are characterized by less intimacy

and reciprocity, and that their play is less associative and cooperative compared to the friendships of control (non-ADHD) children (Tyler, 1993). However, this study, although seminal, has significant limitations. The sample size was very small and the participants were all boys. Additionally, the study relied solely on observational data, was carried out at a single time point, and excluded participants who were on medication.

The results of the Tyler study stand in contrast to another study which investigated the friendship patterns of girls with ADHD and a comparison group of girls without ADHD (Blachman & Hinshaw, 2002). The ratings of the girls with ADHD indicated higher levels of conflict and relational aggression (covert aggression, such as gossiping, lying, betrayal of trust, etc.) between the friends compared with the control group. In further contrast to the Tyler (1993) study, the shortcomings in companionship, validation, and support that characterized the friendships of boys with ADHD were not evident in the girls with ADHD. However, the study of girls with ADHD did not include observational data or friendship ratings by the children's friends. These are known to have higher validity in terms of assessment of specific target behaviours such as friendship, compared to self-reports and caregiver/teacher reports (Pelham, Fabiano, & Massetti, 2005).

Heiman (2005) reported interesting results regarding the nature of a close friendship as perceived by children with and without ADHD (n = 56; 31 boys and 8 girls with ADHD and 17 comparison; 7.0-12.2 years of age). It was found that children with ADHD and those without ADHD defined a "best friend" differently. Specifically, children with ADHD viewed the best friend as a companion, and someone to satisfy the need for mutual entertainment, amusement, and having fun. Children without ADHD

believed that a best friend is someone whom they can count on for emotional support, to care for them, to share intimacy with them, and to provide a sense of security. This finding suggests possible differences in friendship patterns, different relationship dynamics and, probably, different motivations for sustaining the friendship over time, between children with and without ADHD.

Although close friendships can be considered to be extremely influential for an individual's character formation and social development, the nature of this influence is not unidimensional. The nature and direction of this influence are usually ambiguous. Some authors suggest that children who are friends are more compatible with each other and are influenced by one another, as opposed to children who are not friends (Hartup, 1989a; Berndt, 1999). The nature of the influence of friends may be either positive or negative. Therefore, having a best friend with ADHD may not prove to be beneficial for some children, because it might promote in them trends such as classroom disruption and decline in academic performance (Hoza, Molina, Bukowski, & Sippola, 1995). Further research is needed to identify the characteristics of individual friends, the way these characteristics are expressed and perceived within the friendship dyad, and the correlation of the characteristics of the friends with positive and negative aspects of the dyadic relationships. This might contribute to the development of interventions aimed at improving friendships and dyadic relationships of youth with ADHD.

Among the many challenges in studying ADHD is the *self-report bias* demonstrated by children with ADHD. When reporting on their own competencies, children with ADHD, compared to children without ADHD, often provide inflated reports that do not correspond with an objective observer's perspective and are

inconsistent with their actual performance (Hoza et al., 2000). This self-report bias is also present in adolescence and is more typical for adolescents with ADHD in comparison to those without ADHD (Barkley, Fischer, Smallish, & Fletcher, 2002). This underscores the importance of not relying solely on self-report data. One alternative is to incorporate observational methods in order to gain data on friendships in the context of ADHD. However, information obtained in this manner represents limited behavioural sampling that may have restricted generalizability (Dodge, 1983). Alternative data collection options could include information obtained from peers, such as nominations about social standing or characteristics, ratings of degree of liking and ratings in response to behavioural descriptors (e.g. “someone who helps others”). Peer-reported variables such as these have been found to strongly predict later adjustment (Cowen, Pederson, Babigian, Izzo, & Trost, 1973). Information from children and their friends could also be supplemented with information from parents and teachers (Hoza, 2007).

To summarize, there is evidence supporting the notion that children and youth with ADHD have serious difficulties in relationships with their peers. The literature suggests that subsequently, they have specific difficulties in creating and sustaining close friendships. There is solid evidence that the friendships of youth with ADHD differ from the friendships of youth without ADHD, but the literature is scarce regarding the relationship maintenance patterns that develop over time within the friendship dyads of children with ADHD. Additionally, from the literature, the question arises whether the influence of the friend with ADHD on his/her friend who is not diagnosed with ADHD is sufficient to alter the friend’s behaviour, or whether the friend’s behaviour is more powerful in influencing the child with ADHD. Given the prevalence and chronic nature

of ADHD, it is important that more research be focused on factors that may assist the social adaptation of individuals with ADHD. Furthermore, understanding the nature and development of friendships in children with ADHD may aid in accomplishing this goal.

The purpose of this study was to provide more information on the development over time of the patterns of friendship maintenance in children and early adolescents diagnosed with ADHD. Broadly, our goal was to investigate the variation and the change over time of friendship-maintenance patterns between youth with and without ADHD. The current study was the second phase of a multimethod research project that explored the dyadic friendships of children with ADHD (Normand, Schneider, Lee, Maisonneuve, Kuehn, & Robaey, 2010).

In the initial phase of the research, light was shed on specifics of friendships of children with ADHD in juxtaposition to friendships of non-diagnosed comparison children. The results indicated that children with ADHD have friends from a broader age range than comparison children. Referred children with ADHD had friends with higher levels of ADHD symptoms (at home and at school) and increased oppositional behaviour (at school) than did comparison participants. A quarter of the friends of the children with ADHD displayed ADHD symptoms in the clinical range on both the parent and teacher ratings, which was not observed in any of the comparison children's friends.

In relation to comparison children, children with ADHD perceived fewer positive friendship features such as conflict resolution, validation and caring, intimacy, help and guidance, and companionship and recreation. Additionally, children with ADHD perceived more negative friendship features such as conflict, friendship exclusivity, overt aggression toward friends or others, and relational aggression toward friends or others.

The researchers concluded that, even according to self-reports, the friendships of children with ADHD tend to be more problematic than friendships of children without ADHD.

Furthermore, children with ADHD and their friends were significantly less satisfied with their friendships than comparison children and their friends. However, no differences were noted in friendship satisfaction between children with ADHD and their own friends, i.e. they were similarly unsatisfied. The researchers hypothesized that children with ADHD and their friends were less satisfied with their friendships because these relationships are marked by persistent violations of rules during activities and less equitable and sensitive exchange of rewards. The tendency for children with ADHD and other children with externalizing and disruptive behaviours to mutually select one another as friends was considered the reason that the friends of children with ADHD were more tolerant of negative aspects of friendships.

In a fast-paced competitive game, children with ADHD performed more total moves and more illegal manoeuvres, indicating that they were not only generally more invested in the game, but also more likely to violate its rules than comparison children. Children with ADHD made more moves of all kinds, both legal and illegal, which was interpreted as reflective of their hyperactivity and, for about half the sample, comorbid anxiety.

The self-centered and insensitive approach of the children with ADHD in their negotiations with friends was also found to be elevated. While negotiating the sharing of either a limited resource or a game to play with their friend, children with ADHD made more insensitive and self-centered proposals. This reflected their general inability to acknowledge and respond to their friends' social cues, needs, and preferences.

Additionally, the children with ADHD were less likely to query their friends about their preferences in the card-sharing task and more likely to refuse their friends' proposals in the game-choice task than were comparison children. Children with ADHD and high levels of anxiety symptoms made fewer self-centered proposals than children with ADHD only. No differences were found between the affect of children with ADHD and the affect of comparison children across the observational tasks. This was attributed to the friendship context. Interactions with friends are generally positive as friends are expected to provide enjoyable company, resulting in little variance in affect. There was less equally distributed balance of power in the dyads of friends in the ADHD group. Among the factors that were found to not influence the friendship variables were sex, age, ADHD subtype, and medication status (Normand et al., 2010).

Objectives and Hypotheses

The main goal of this study is determining whether the development of the naturally occurring friendships of children and young adolescents with ADHD differs from the development of the friendships of children and youth without ADHD. Our focus is on the longitudinal exploration of characteristics that are central and common to all friendships such as supportiveness, competent relational communication (communication processes in personal relationships), affective synchronicity, problem-solving mechanisms, equity of power, and friendship satisfaction.

This study is guided by three key objectives. The first objective is to investigate the stability of the friendships of youth with and without ADHD in conjunction with contextual factors influencing those friendships such as the place where the friendship started, age of preferred friends, and familial factors.

Our hypotheses regarding the first objective are:

1. Children with ADHD will have less stable and shorter friendships than comparison children.
2. Children and youth with ADHD will have more friends from outside of school than comparison children.
3. Children and youth with ADHD will have younger friends than comparison children.
4. Children with ADHD will belong to single-parent families more often than comparison children.

The second objective is to explore whether there is a change over time in specific aspects of the dyadic friendships of youth with and without ADHD that indicate reciprocity, sensitivity, interest in the friend's wishes, respect for equality in friendship, and fairness in play and respect for rules. Therefore, the first part of the analysis assesses patterns of change and stability in participants' friendships compared to the findings from the first phase of the project, which relied on cross-sectional data (Normand et al., 2010).

Our hypotheses in terms of the second objective are:

5. Children with ADHD and their friends will continue to report more negative features of their friendships than the comparison children, as per the initial findings.
6. In a fast-paced competitive game, children with ADHD will commit more rule violations than comparison children, as per the initial findings.
7. During card-negotiation and game-choice tasks, children with ADHD will make fewer sensitive and more self-centred proposals, will not consider their friend's preferences, and will reject more of their friend's proposals, as per the initial findings.

8. Children with ADHD and their friends will display more negative affect during activities with their friend than comparison children.

The third objective of the study is to explore the development over time of dimensions of friendship such as power imbalance, respect for the other's needs and emotional state, and reciprocity during the friendship-maintenance phase in children with ADHD and comparison children. Since the combination of these aspects varies over time in any friendship, we explore whether there are certain patterns that distinguish the maintenance phase of the friendships of children with and without ADHD.

Our hypotheses regarding the third objective are:

9. There will be an increasing difference over time between ADHD-friend dyads (one participant with ADHD and his/her close friend) and comparison dyads (dyads of friends without ADHD) in displayed affect during interaction. More specifically, we expect that ADHD-friend dyads will be continually less competent in adjusting their affect according to the situation and affect of their friend, which will coincide with increase in the duration of negotiation tasks that require reaching a common decision.

10. The difference over time between youth with ADHD and youth in the comparison group will increase in terms of supportiveness towards their friends, that is, mutual responsiveness to the expression of feelings and desires, intimacy, reliable support, and validation of the friend as a person. We expect that this increased difference will occur because of the failure of children and youth with ADHD to improve in these respects.

11. There will be a difference over time between ADHD-friend dyads and comparison dyads in terms of less equitable distribution of power in ADHD-friend dyads than in comparison dyads.

Method

Participants

For the purposes of this study we initially recruited 133 referred children and their respective friends. The children were recruited from paediatric and ADHD clinics and community schools in the Ottawa-Gatineau area. The recruitment took place over a two-year period. At the time of their initial participation in the study, the participants, as well as their friends, were between the ages of 7 and 13 years. At the initial stage, the ADHD group consisted of 87 participants (67 boys) and their friends and the comparison group consisted of 46 participants (34 boys) and their friends. Each child was asked to invite his/her best friend, with parental permission, to participate in two research sessions that were planned to take place six months apart.

For the initial session, the majority of the referred children (125, or 94.0 %) came with a same-sex friend. Their average age was 10.33 years ($SD=1.92$); 198 of the participants (74.4 %) were boys. French was the language of instruction of 230 (86.5 %) of the participants. The sample consisted mainly of Caucasian children ($n = 214$; 90.6 %). Participants with other cultural backgrounds included Latin-American ($n = 9$; 3.4 %), Arabic ($n=7$; 2.6 %), African ($n = 5$; 1.9 %), and Asian ($n = 4$; 1.5 %). A total of 211 (79.3 %) of the participants were living in two-parent households. The median yearly family income was \$81,000 (range = \$43,709 to \$129,840). At the initial phase of the

study, among the participants in the ADHD group there were 22 ADHD/ADHD dyads (7 girls), where both child and friend had been diagnosed with ADHD. Additionally, in the same group there were 65 dyads (13 girls) where the child had ADHD while their friend did not.

Participants in the ADHD group were required to have a primary diagnosis of ADHD. The ADHD diagnosis was provided by a qualified health care professional (e.g., psychologist, paediatrician, psychiatrist, or family physician). For the purposes of this project, establishment of inter-rater reliability of the primary diagnosis was not sought. However, for all children who participated in the study, the parents granted access to their children's clinical charts and all ADHD diagnoses were verified. In cases where the chart identified the youth with a secondary diagnosis of conduct disorder, oppositional-defiant disorder, learning disability, anxiety disorder, developmental coordination disorder, or attachment disorder, but no other diagnosed mental-health condition, the youth was included in the study. The initial verification of the diagnoses was used at all stages of the project. We excluded participants from the ADHD group who had a Full Scale IQ of less than 80, pervasive developmental disorder, psychosis, or were unable to read/understand the instructions, as well as those who were not enrolled in a regular classroom, or who did not have a friend who was willing to participate. Twenty nine potential members (27 children with ADHD and 2 comparison children), about 22%, not included in the 133 participants reported above, could not participate because they reported that they had no good friends with whom to participate. Since they were not included in the study record of their demographic data was not made.

Participants on medication were also included in the ADHD group. For the purposes of the study, a record was kept of the ADHD medication prescribed and taken. As a second condition for inclusion in the study, the participants with ADHD had to obtain parents' and teachers' T-scores on the Conners Rating Scale-Revised: Long Form (CRS-R: L DSM-IV ADHD subscales; Conners et al. 1998a,b) that were equal to or higher than 65 (Conners, 2000). Conners scores were obtained for all participants at the initial phase of the project and the same scores were used at all stages. (For the detailed Conners scores see Table 1.) In the clinical sample, 71 (81.6%) of children with ADHD were medicated (long-acting stimulants: $n = 54$; 76.1%, short-acting stimulants: $n = 9$; 12.7%, and non-stimulants: $n = 8$; 11.3%).

The ADHD status of the friend brought into the study by the child or young adolescent with ADHD was not taken into account in recruitment. Where the friend was also diagnosed with ADHD, he/she was not excluded from the study. Additionally, friends with other conditions such as oppositional defiant disorder (ODD), conduct disorder (CD), or learning and anxiety difficulties indicated through parents' and teachers' T scores on the CRS-R, were also not excluded from the study.

The comparison group of 46 non-ADHD children and young adolescents and their friends were recruited from local schools and community organizations from the same catchment areas as the participants with ADHD. For inclusion in the comparison group, parents' and teachers' T scores on the CRS-R: L DSM-IV ADHD subscales (Conners et al. 1998a,b) had to be below 60 (Conners, 2000). Parents of the comparison group reported no previously diagnosed psychological disorders. None of the friends of children in the comparison group were diagnosed with ADHD. Exclusion criteria for the

comparison group were: age outside of the range of 7 to 13 years; a previously obtained Full Scale IQ of less than 80 (IQ scores available for 77% of the referred children with ADHD); pervasive developmental disorder; psychosis; inability to read/understand the instructions; not being enrolled in a regular classroom; and not having a friend who was willing to participate.

For the second part of the study 86% (n = 115) of the participants and their friends came back. Reasons for not coming to the second session varied. For 8 of the participants, parents did not provide a reason (ADHD, n = 6). Four parents of participants with ADHD indicated that it was too difficult to bring their child and his/her friend for a session. Three of the ADHD group participants had moved away and 2 parents of the ADHD group stated that their child had lost his/her friend and had no one to participate with. One parent of a participant from the ADHD group said they were not interested in participation at this stage. Of the 115 participants who came back for the second session, 3 participants (ADHD, n = 3) came with a new friend and were therefore excluded from the analyses. This resulted in a Time 2 sample of 112 children and their friends (ADHD group dyads, n = 68; comparison group dyads, n = 44). In regards to demographic data and diagnosis, there was no significant difference between participants who came to Time 1 and Time 2. (For detailed demographic comparison see Table 2.) However, the referred (ADHD) children who did not participate in the second phase of the study were more likely to live in single-parent families ($\chi^2(1,333) = 4.09, p = 0.04, \text{Cramer's } V = 0.18$).

Among the dyads (child and friend) who returned for the second phase in the ADHD group, 34% (n = 38) were between 7:0 and 10:11 years of age and 27% (n = 30) were between 11:00 and 13:11 years of age. In the comparison group, 23 % (n = 26) were

between 7:0 and 10:11 years of age and 16% ($n = 18$) were between 11:00 and 13:11 years of age (see Table 2).

Among the children at Time 2, boys made up 78% ($n = 53$) of the children with ADHD, 75% ($n = 51$) of their friends, 73% ($n = 32$) of the comparison children, and 68% ($n = 30$) of their friends. 6% ($n = 4$) of the ADHD dyads and 4% ($n = 2$) of the control dyads were cross-gender. The language of instruction at school was still mainly French: 81% ($n = 55$) of the ADHD children, 90% ($n = 61$) of the ADHD children's friends, 95% ($n = 65$) of the control children, and 93% ($n = 63$) of the friends of control children were educated in French. There was no significant difference between the groups in regards to sex, cross-gender friendship, or language of schooling (see Table 2).

The median annual family income as reported by parents also did not differ significantly between the groups. In thousands, it was as follows: children with ADHD ($M = 80.71$, $SD = 16.52$), friends of children with ADHD ($M = 84.20$, $SD = 19.31$), comparison children ($M = 79.43$, $SD = 15.41$), and friends of comparison children ($M = 79.46$, $SD = 15.46$).

Among the ADHD dyads that participated in Time 2, 20% ($n = 14$) consisted of a child and friend, both with ADHD diagnosis, and 80% ($n = 54$) consisted of a child with and a friend without ADHD diagnosis. Of the children with ADHD diagnosis, 69% ($n = 47$) were medicated and 31% ($n = 21$) were not medicated. 72% ($n = 49$) of the children with ADHD diagnosis were identified with ADHD Combined Type, 24% ($n = 16$) with ADHD Inattentive Type, and 4% ($n = 3$) with ADHD Hyperactive Type. The average time in months between the two participations was 8 months ($SD = 2.85$) for the ADHD

group and 7.4 months ($SD = 2.02$) for the comparison group. The difference between the groups was not statistically significant.

For the Time 2 session, 95% ($n = 65$) of the participants from the ADHD group and 98% ($n = 43$) of the participants from the comparison group came with the same friend. Participants in all groups perceived their friendships as stable: children with ADHD: $M = 57.24$ months, $SD = 39.12$; friends of children with ADHD: $M = 58.99$ months, $SD = 36.34$; comparison children: $M = 60.57$ months, $SD = 35.61$; friends of comparison children: $M = 56.34$ months, $SD = 38.53$. The majority of the participants came with their best friend again for the second participation: children with ADHD 84% ($n = 57$); friends of children with ADHD ($n = 49$); comparison children 86% ($n = 38$); friends of comparison children 82% ($n = 36$). The difference between the groups on all these criteria was not significant (see Table 3).

In sum, there was no other systematic difference between the children who returned for the second session and those who did not, with the exception of the non-returners coming more often from a single-parent household.

Procedure

The study took place at the Social Development and Mental Health laboratory at the School of Psychology at the University of Ottawa, and at local schools. The data collection in schools was undertaken to facilitate the participation of children and youth from distant parts of the region. For the study, we followed procedures that have been used successfully by Fonzi and colleagues (1997) in their study of friendship status in elementary school children and their friends, and by Tomada, Schneider, & Fonzi (2002)

in their study of verbal and non-verbal interactions in situations of potential conflict involving preschool children and their friends.

This study was conducted in two phases. During phase 1, participants and their friends were invited to a participation location of their convenience where they were introduced to the study, and took part in the initial phase. The second, followup phase took part 6 to 9 months later at the same setting with those participants who chose to return and take part in the study. The variability in the reassessment was a result of naturally occurring circumstances. We started contacting the participants 6 months after their initial participation. However, for some of them, scheduling difficulties caused a delay between participations of up to 9 months. (See Table 4 regarding information collected at the two phases of the project.)

Initial recruitment of the clinical sample followed the aforementioned steps. Recruitment of the non-clinical sample was completed by volunteers, through advertisement and distribution of brochures describing the study in local community centres. After the initial recruitment, each participant (ADHD and comparison) was asked to invite his/her best friend to participate in the study. Basic information about the study was provided to the friend and his/her parents via brochures (see Appendix 1).

Parents/guardians of participants and friends were asked to provide informed consent to participation in the study. An assent form was given to all youth participants. The parent providing the informed consent was asked to complete the Conners 3 Parent Rating Scales (CPRS) and a brief demographic questionnaire. The parents were also given a copy of the Conners Teacher Rating Scales (CTRS) to be completed by the

child's teacher. Both the CPRS and the CTRS are standardized questionnaires designed to measure the extent of ADHD symptoms in children.

Afterward, at both participations the participant and their friend, accompanied by a parent/guardian of the participant, were invited to the laboratory. There, both members of the dyad (the child and his/her best friend) participated separately in an interview about the friendship, part of which entailed corroboration of their relationship as mutual friends. We first asked all participants to state who their friends are and to nominate them, specifying whether they are "best friends" or not. Should the paired "friend" not be on his/her partner's list, we proceeded to the game session, but the data from the dyad was not analyzed. The elimination from statistical analysis was based on the criteria for mutual friendship by Bukowski and Hoza (1989). Each participant also completed a scale (*Friendship Qualities Measure [FQM]*) that provides information on various aspects of the relationship.

Subsequently, the participants were videotaped with their identified friends in a 45-minute session during which they were asked to complete several semi-structured tasks, used successfully in previous research to assess dyadic interactions in delinquent adolescents (Dishion, Crosby, Rusby, Shane, Patterson, & Baker, 1989; Dishion, Andrews, & Crosby, 1995), aggressive children (Dane, 2001), and "normal" school-aged children (Fonzi et al., 1997; Schneider, Fonzi, Tomada, & Tani, 2000). The facilitation and videotaping of the sessions were completed by a research assistant who was not involved in the subsequent data coding and data analysis. Following study participation, each child and young adolescent received a small monetary reward of \$20 (see Appendix 2).

When conducted in the laboratory, the 45-minute session took part in a room approximately 14 by 10 feet. The room was devoid of side noises as much as possible without being soundproof. All visual distractions were removed as well. The participants were videotaped by two video cameras visible to them during interactions that included several tasks. These tasks were broadly grouped into two categories: 1) planning and problem solving and 2) competitive and cooperative behaviours. The furniture was limited to a table and two chairs used by the participants for the planning and problem solving tasks. For the competitive and cooperative behaviours task a separate play-table was brought into the room at the beginning of the task. The time dedicated to each task was not specifically limited and varied within the 45-minute session according to the needs of the participating dyad. When sessions were conducted at a local school, an empty classroom was used. Furniture was moved in order to accommodate a table and chairs for the participants and the play-table when it was introduced to the session. At the schools special effort was made to limit interruptions asking school personnel for privacy and putting a note on the door indicating that a research session was taking place.

Planning and problem solving. The first task in this category consisted of having the friends in the dyad decide together which board game to play on the day of testing from among those available in the room (subsequently, participants had the opportunity to play the chosen game).

The second task involved negotiation about the sharing of a limited resource. Specifically, this task involved the selection and sharing of an uneven number of prized trading cards, which have in a previous study been used to elicit verbal negotiation and cooperativeness (Fonzi et al., 1997). Each dyad was asked to select five trading cards

from a range of options, and then to determine which of the cards each member of the dyad would keep at the end of the procedure. The trading cards were gender-neutral and depicted a range of figures from popular culture, including a wide variety of athletes, pop singers, movie and television stars, and comic book heroes (Fonzi et al., 1997).

Participants were asked to select their preferred cards, to ensure that they negotiated over a valued commodity. The sequence of the tasks was randomly selected at each participation of the dyad to prevent order effects.

Competitive behaviour task. We used a task developed by Fonzi and colleagues (Fonzi et al., 1997; Dishion et al., 1989) to elicit an interaction between the friends in a fast-paced, engrossing game that we believed reflected some of the impulsivity inherent in ADHD. We assessed behaviours in a competitive context. This is based on our contention that competent social action requires the ability to adapt to competitive context (Schneider, Soteras-deToro, Woodburn, Fulop, Cervino, Bernstein et al., 2006). Tryon and Keane's (1991) study on the interactions of popular and aggressive boys during a word-naming game found that competitive conditions revealed more differences than cooperative conditions in the social behaviours of aggressive boys.

The competitive condition permits the distinction between competition that is friendly, enjoyable, and fair, and one that is less amicable in tone and that might involve cheating. The goal of the game is to be quicker than the opponent in transporting five 4 x 3.5 x 5.5 cm wooden blocks, one by one, into the trunk of a 33 x 21 x 15 cm toy truck. The truck had to travel inside a 180 x 36 cm runway, with walls 4.5 cm high, from a starting mark to a finish line and back. According to the rules, all four wheels have to remain on the floor of the narrow runway at all times, and only one car at a time can fit

within the runway. Thus, each time both players want their cars to proceed through the same area at the same time, they have three alternatives: (1) to compete energetically but without breaking the rules, e.g., by pushing against the opponent's car; (2) to compete in violation of the rules, e.g., by lifting wheels of one's car over the walls of the track or over the opponent's car; and (3) to avoid conflicts with their opponents even if this reduces their own chances of winning, e.g., reversing and allowing the opponent to proceed.

Coding procedure. The videotaped interactions of the first and second sessions were coded by graduate and undergraduate students who were blind to the diagnostic status of the participants, to the group that participants belonged to (ADHD or comparison), and to the study hypotheses. Training sessions using a detailed coding manual were conducted, and at each session the coding rules were reviewed, accuracy and reliability were checked, and feedback was provided to the coders. The criterion for reliability was 80% inter-rater reliability, which was ensured through 20% of the videotaped interactions coded independently by two observers to assess for inter-rater reliability. When the inter-rater reliability was achieved, the formal coding was completed using transcriptions of the negotiation tasks and video input through Noldus Observer X 7. Coding drift was minimized through post-training reliability, checked weekly. For definitions of the coding categories, inter-rater reliability data, and intraclass correlations, see Tables 5, 6 and 7.

Measures

Demographic data. Demographic and socio-economic information were collected for all participants in the study from their parents through a brief demographic

questionnaire (see Appendix 3) at Phase 1. This information included the child's age, gender, and medication information, and the socioeconomic status of the family.

ADHD symptoms. The Conners 3 Parent and Teacher Rating Scales (CPRS and CTRS) were used for assessment of ADHD symptoms at Phase 1. The scales have an internal consistency of .77 - .97, test-retest reliability of .71 - .97, and inter-rater reliability of .52 - .94 (Conners Manual, 2000). The well-validated Conners 3 scales assess symptoms of ADHD (inattentiveness, impulsiveness, hyperactivity scales) and other disruptive behaviours (Conners, Sitarenios, & Parker, 1998a).

Friendship information. A *friendship history interview* (see Appendix 4) was used to gather information about friendships such as the name of the friend, friendship duration, place where the friend was first met, and nomination of the listed friends (i.e. selection of a "best friend"). The friendship history interview is a sociometric nomination procedure adopted from the work of Parker and Asher (1993) and Schneider, Dixon, and Udvari (2007). The friendship history interview was used in both phases of the study to gather sociometric information about the children's friendships.

Friendship ratings. The *Friendship Qualities Measure (FQM; Appendix 5)* was used to gather information about specific aspects of the friendship at both phases of the study. This is a 43-item instrument developed by Grotzinger and Crick (1996) which consists of 14 subscales that tap into the following areas: Validation and Caring, Conflict, Companionship and Recreation, Help and Guidance, Intimate Exchange, Ease of Conflict Resolution, Relational Aggression, Overt Aggression, and Exclusivity. The response scale ranges from 1 (not at all true) to 5 (almost always true). Children's responses were summed and averaged for each subscale, resulting in 14 friendship quality scores.

The internal consistency of the FQM subscales, as per the original development article, is acceptable. The subscale alphas are: validation and caring .70; conflict .87; companionship and recreation .68; help and guidance .68; intimate exchange (subject intimacy) .81; intimate exchange (friend intimacy) .81; conflict resolution .68; relational aggression toward friends .73; overt aggression toward friends .79; relational aggression toward others .71; overt aggression toward others .86; and exclusivity .61. The magnitude of interscale correlations range from .05 to .76. Validity data include discrimination between adjusted and maladjusted children (Grotzinger & Crick, 1996).

In the present study, we used all 14 subscales of the FQM. Additionally, in order to systematize the gathered information, we reduced the original 14 subscales to two global factors: positive friendship features (18 items, $\alpha = 0.83$) and negative friendship features (25 items, $\alpha = 0.80$). The correlation between these two dimensions was moderately high ($r = -.33$, $p < .01$), which indicated sufficient independence from one another. (For loadings of the two constructed factors see Table 8). Berndt (1996) suggests that all positive and negative friendship features are linked to two different dimensions defining the quality of friendship. These two dimensions are weakly correlated with one another and therefore have to be considered in conjunction to define the quality of a friendship.

Coding system. The coding categories that were used were derived based on previous research within the field (Dishion et al., 1989; Parker & Herrera, 1996; Fonzi et al., 1997; Schneider et al., 2000). The intraclass correlations between the ratings of the two participants in the dyad served as an index of validity (Furman, 1996). For the combined coding system the intraclass correlations ranged from .45 to .96 (Fonzi et al.,

1997). The coding system demonstrated good discriminative validity. It successfully distinguished the interactions of dyads who are friends from the interactions of dyads who are not friends (Fonzi et al., 1997). The discriminative validity of the coding system was further confirmed by differentiating the friendly interactions of socially withdrawn youth from the friendly interactions of controls (Schneider, 2009).

At both phases of the study the negotiations were coded according to a system developed by Fonzi et al. (1997). The following coding categories were included in the combined coding system that was used at both phases of the study for the negotiation tasks: self/other interest based proposals (Card Sharing task kappa = 0.96, Game Choice N/A); sensitivity to proposals (Card Sharing task kappa = 0.79, Game Choice kappa = 0.81); expression of preference (Card Sharing task kappa = 0.86, Game Choice kappa = 0.79); inquiry about friend's preference (Card Sharing task kappa = 0.83, Game Choice kappa = 0.89); acceptance of friend's proposals (Card Sharing task kappa = 0.77, Game Choice kappa = 0.89); refusal of friend's proposal (Card Sharing task kappa = 0.80, Game Choice kappa = 0.77); balance of power (Card Sharing task kappa = 0.83, Game Choice N/A.); positive affect (Card Sharing task kappa = 0.78, Game Choice kappa = 0.77); negative affect (Card Sharing task kappa = 0.80, Game Choice kappa = 1.00); and neutral affect (Card Sharing task kappa = 0.95, Game Choice kappa = 0.95). (For detailed description of the coding categories and intra-class correlations, see Tables 5 and 6.)

Scoring procedures for the competitive task in both phases of the project were similar to those used by Fonzi et al. (1997) and Schneider et al. (2000). The coding categories included: legal manoeuvres (kappa = 0.87); illegal manoeuvres (kappa = 0.82);

positive affect ($\kappa = 0.80$); negative affect ($\kappa = 0.81$); and neutral affect ($\kappa = 0.88$).

Results

Comparison of Returning and Not-Returning Participants

The children returning ($n = 112$) and not returning ($n = 21$) for Time 2 participation were compared on the following aspects: ADHD status, friendship stability, power balance within the dyad, friendship satisfaction, positive friendship features (as reported by child, friend and dyad), and negative friendship features (as reported by child, friend, and dyad). Only one of these comparisons was significant after Bonferroni correction for multiple comparisons to $p < 0.017$.

Comparing the scores of returning with non-returning children on their perception of negative friendship features, we found that non-returners ($M = 2.0$, $SD = 0.54$) had higher scores than returners ($M = 1.62$, $SD = 0.39$): $F(1,131) = 13.39$, $p < 0.001$, partial $\eta^2 = 0.09$. This result suggests that children not returning for Time 2 reported more negative friendship features at Time 1.

From the rest of the comparisons, there were three approaching significance at $p < 0.017$. For positive friendship features as they were perceived by the child, non-returners ($M = 3.7$, $SD = 0.57$) had lower scores than returners ($M = 4.03$, $SD = 0.61$): $F(1,131) = 4.7$, $p = 0.032$, partial $\eta^2 = 0.03$. In regards to negative friendship features as they were perceived by child and his/her friend, non-returners ($M = 1.85$, $SD = 0.41$) had higher scores than returners ($M = 1.66$, $SD = 0.36$): $F(1,131) = 4.1$, $p = 0.045$, partial $\eta^2 = 0.03$. For friendship satisfaction reported by the dyad, non-returners ($M = 4.62$, $SD = 0.45$) had

lower scores than returners ($M = 4.8$, $SD = 0.37$): $F(1,131) = 4.23$, $p = 0.042$, partial $\eta^2 = 0.03$.

Analytic Strategy for Hypotheses Testing

The average intraclass correlations between the child and his/her friend at Time 1 were: car-race 0.33, card-sharing 0.56, and game choice 0.45. At Time 2 they were: car-race 0.29, card-sharing 0.32, and game choice 0.40. These coefficients indicate that the data for the child and his/her friend were not extensively influenced. Therefore, we conducted analyses at the individual and dyadic level. Dyadic variables were created, averaging the child's and his/her friend's scores on respective variables (Kenny, Kashy, & Cook, 2006).

The main type of analysis used was repeated measures MANOVA. This analysis, although conventional, was optimal in accommodating our sample size and limited number of time points. During the planning of the data analyses, consideration was given to mixed effects regression modelling. However, the analyses that this strategy yielded were limited since they relied only on a difference score calculated from the two time points scores available in our dataset. Two measurement points, as present in our dataset, do not allow for analysis of trajectories of change, but rather reflect an amount of change over time (Zumbo, Amery, & Liu, 2012). Therefore this strategy was not used in the following analyses.

The first wave of analyses aimed at exploring the development of the participants' friendships using as a baseline the findings from the first stage of this project (Normand et al., 2011). The second set of analyses aimed at exploring friendship-maintenance patterns over time. Additionally, we explored individual level factors contributing to a

difference between the friendships of children with ADHD and those of comparison children.

The statistical analyses at phase 1 of this project suggested no significant gender differences in the ADHD and comparison groups in regards to friendship variables. Cross-gender friendships were also not significantly different from same-gender friendships (Normand et al. 2011). Therefore, in order to retain maximum power, we analyzed the data without segregating for gender.

Hypotheses Testing

Friendship stability and duration (Hypothesis #1). The data for the friendship stability analyses were derived from researchers' notes about the number of participants at Time 1 and Time 2. The duration of these friendships (recorded in months) provided data for the friendship duration analyses. Number of friendships and duration were reported at both phases of the project by children with ADHD and comparison children (see Appendix 4).

At Time 1, the ADHD group consisted of 87 children and their friends and the comparison group consisted of 46 children and their friends. At Time 2, the ADHD group consisted of 68 child and friend dyads and a comparison group of 44 dyads. The participants whose data were included in Time 2 analyses were those who retained their friendships over time. Participants who returned at Time 2 with a new friend were excluded from the analyses.

The overall attrition rate between Time 1 and Time 2 was 15 % (n = 21). For the ADHD group attrition was 21 % (n = 19) while for the comparison group it was 4 % (n = 2). There was a significant difference in terms of attrition between the two groups:

$\chi^2(1,133) = 5.07, p = 0.02, \text{Cramer's } V = 0.20$. There was no significant difference between ADHD/ADHD dyads and ADHD/non-ADHD dyads within the ADHD group. In the ADHD group 26% ($n = 5$) of the children not returning for second session could not participate because they had lost their friend. In the comparison group no participants that did not return reported a loss of friends. In other words 6% of the 87 children with ADHD (from baseline) did not maintain their friendship over the 6-month follow up vs. 0% of comparison children.

To further explore stability and duration of friendships, we used the individual data of child and their friend for reported number of friends and duration of friendship in months. From these variables we created four dyadic variables that represented number of friends and duration of friendship at Time 1 and Time 2. Then, we performed a MANOVA with these dyadic variables as dependent variables, within subject factor time, and between subject factor group. The results indicated no significant time by group interaction and no significant main effect for group. However, the analyses indicated a trend approaching statistical significance for time: (Pillai's Trace = 0.53; $F(2,97) = 2.97$; $p = 0.07$; partial $\eta^2 = 0.53$). Univariate followup tests indicated significance of duration of friendship ($F(1,98) = 3.93, p = 0.05$; partial $\eta^2 = 0.04$) and no significance for number of friends. Follow-up paired t-tests indicated no statistically significant difference in the comparison group scores from Time 1 ($M = 57.43, SD = 35.06$) to Time 2 ($M = 62.04, SD = 36.18$); $t(38) = -1.64, p = 0.1$. In the ADHD group there was also no statistically significant difference in friendship stability from Time 1 ($54.66, SD = 34.10$) to Time 2 ($M = 58.36, SD = 34.06$); $t(60) = -1.3, p = 0.19$. These results indicate that the

multivariate trend to significance is due to group differences, with the comparison group having higher duration of friendship than the ADHD group.

It should be noted that the lack of multivariate significance precludes performing univariate and t-test follow up tests. However, since for this study we have a relatively small sample, the trend approaching significance and the follow up univariate statistic are reported. It is our hope that future research with a larger sample may use these data.

Place where friendship started and age of friends (Hypotheses #2 & 3). The data regarding age of friends were collected for all children at Time 1 as a part of the demographic data (see Appendix 3). The data about place where the friendship started were reported by all children at Time 1 and Time 2 through the friendship nominations (see Appendix 4).

A chi-square test of independence was performed to examine the relation between group and place where friendship started. The test did not indicate significant group differences at $p < 0.05$. The ADHD and comparison groups did not differ statistically in regards to the place where their friendships started.

Separate ANOVA analyses for age and school grade revealed no significant difference in age between the children with ADHD ($M = 10.27$, $SD = 1.8$) and their friends ($M = 10.29$, $SD = 2.15$) and control children ($M = 10.37$, $SD = 1.73$) and their friends ($M = 10.26$, $SD = 1.7$) (see Table 2). There was no significant difference in regards to school grade between the children with ADHD ($M = 4.29$, $SD = 1.88$) and their friends ($M = 4.27$, $SD = 1.98$) and control children ($M = 4.23$, $SD = 1.85$) and their friends ($M = 4.36$, $SD = 1.79$).

Single-parent families (Hypothesis # 4). The data regarding number of parents living with the child were collected for all children at Time 1 as a part of the demographic data (see Appendix 3).

A chi-square test of independence was performed to examine the relation between group and number of parents. Similar to Time 1, there was a significant difference between the ADHD and comparison groups in regards to one vs. two-parent household: $\chi^2(1,112) = 12.83, p = 0.02$, Cramer's $V = 0.24$. 73% of the children with ADHD and 75% of their friends were living with two parents, while 93% of the comparison children and 93% of their friends were living with two parents.

The number of parents living with the child was significantly different between the ADHD and comparison groups: $\chi^2(1, N = 112) = 6.77; p = 0.009$. In regards to number of parents in the ADHD comorbidity subgroups (ADHD with anxiety and ADHD with ODD) there was a statistical significance for the ADHD with anxiety group: $\chi^2(2, N = 112) = 6.79; p = 0.03$, where the ADHD with comorbid anxiety group had the highest number of single-parent households compared to ADHD only and ADHD with ODD groups. The results for the ADHD with ODD group were also significant: $\chi^2(2, N = 112) = 6.79; p = 0.03$; participants in this group reported the greatest number of single-parent households.

Friendship features (Hypothesis #5). The data for the following analyses were collected from all children and their friends at Time 1 and Time 2 through the Friendship Quality Measure (see Appendix 5). Dyadic variables were created by averaging the

variables for the child and his/her friend. As dependent variables for this analysis, we used the positive and negative friendship features variables obtained through the Friendship Quality Measure. The positive friendship features variables met the assumptions for multivariate analyses while the negative friendship features variables needed to be inverse transformed in order to meet the assumptions. However, the transformed data did not meet the assumption of homogeneity of covariance (Box's $M = 56.36$; $p < 0.001$). In order to determine whether, in the case of significant Box's M , the null hypothesis can be rejected with confidence, we compared the sample sizes and the sizes of the variance (Tabachnik & Fidell, 2001). For the positive friendship features variables the ratio sample size/variance was acceptable, while for the negative friendship features the variance was high in comparison to sample size. Therefore, although Box's M was significant, the results for negative friendship features can be interpreted with confidence. All other statistical assumptions were met.

A repeated measures MANOVA with positive and transformed negative friendship features as dependent variables, group as a between subject factor, and time as within subject factor, was significant for group main effect (Pillai's Trace = 0.62; $F(2,109) = 3.57$; $p = 0.031$; partial $\eta^2 = 0.62$). The univariate followup tests were statistically significant in regards to positive friendship qualities ($F(1,110) = 6.8$; $p = 0.01$; partial $\eta^2 = 0.06$). The mean value of positive friendship qualities was higher for the comparison group. The within subject factor time was not significant at $p < 0.05$ as main effect or in followup tests.

In order to explore further, we performed a repeated measures MANOVA with the positive and negative friendship features separated for Time 1 and 2 as dependent

variables, not using dyadic data, and comparing children with ADHD, their friends, comparison children, and their friends as separate groups. Within subject factors were negative and positive friendship features and between subject factor was group. The test indicated significant negative friendship features by group interaction (Pillai's Trace = 0.05; $F(1,186) = 3.23$; $p = 0.023$; partial $\eta^2 = 0.05$) and positive friendship features by group interaction (Pillai's Trace = 0.06; $F(1,186) = 4.27$; $p = 0.006$; partial $\eta^2 = 0.06$). The main effects for negative friendship features (Pillai's Trace = 0.94; $F(1,186) = 2849.92$; $p < 0.001$; partial $\eta^2 = 0.94$) and positive friendship features (Pillai's Trace = 0.1; $F(1,186) = 21.78$; $p < 0.001$; partial $\eta^2 = 0.1$) were significant.

Tukey post-hoc comparisons of the four groups indicated no significant difference between: children with ADHD ($M = 2.78$, 95% CI [2.72, 2.92]), control children ($M = 2.83$, 95% CI [2.75, 2.91]), friends of children with ADHD ($M = 2.85$, 95% CI [2.79, 2.92]), and friends of control children ($M = 2.89$, 95% CI [2.81, 2.97]).

In regards to positive friendship features, there was a decrease between Time 1 and Time 2 for all groups. The group of children with ADHD had the lowest mean value for perceived positive friendship features at both times. The group of friends of comparison children had the highest value at Time 1 and the lowest value at Time 2. Comparison children and friends of children with ADHD differed at Time 1 as control children had lower value for positive friendship features. However, at Time 2 the results for these two groups were not significantly different (see Figure 1).

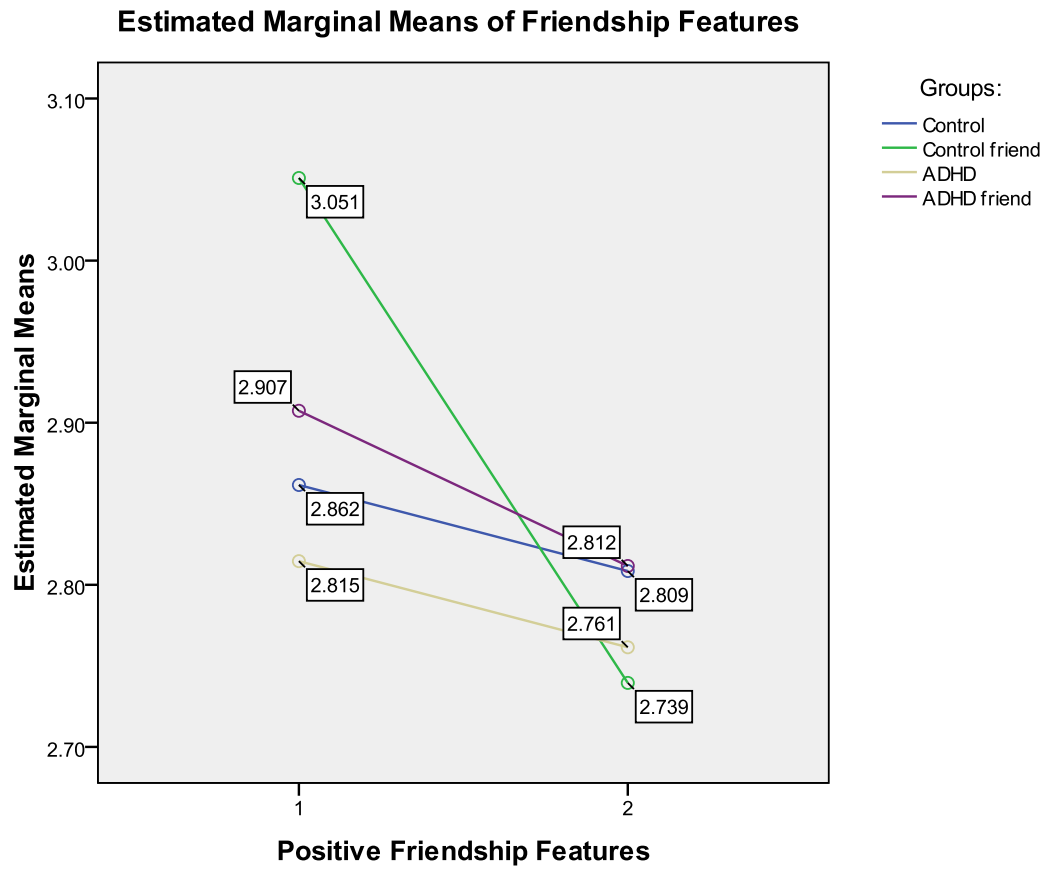


Figure 1. Positive friendship features at Time 1 and Time 2.

In terms of negative friendship features, there was an increase between Time 1 and Time 2 for all groups, with no difference between the groups (see Figure 2).

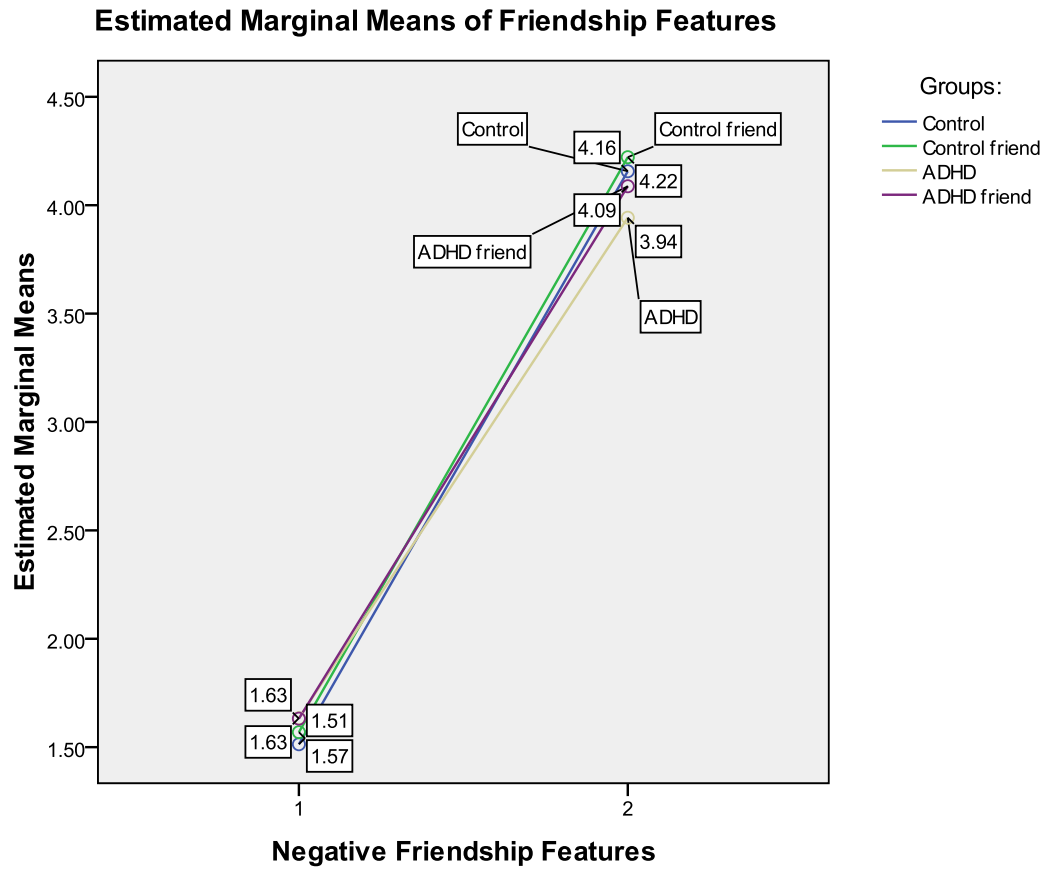


Figure 2. Negative friendship features at Time 1 and Time 2.

In comparison, the findings from the first phase of the project indicated that children with ADHD perceived fewer positive and more negative friendship features than comparison children. The friends of children with ADHD perceived fewer positive friendship features than friends of comparison children (Normand et al., 2011).

Rule violations (Hypothesis #6). The observational data for the following analyses were collected from all children and their friends at Time 1 and Time 2 through the car race task. Dyadic variables were created from the variables for the child and their

friend. The intraclass correlations between the analyzed variables were between .47 and .55, which suggests moderate relationships between the explored variables. For the analyses we used the illegal moves variables from the car-race task. The between subject factor for the analysis was group and the within subjects factor was time.

A repeated measures MANOVA showed significance for time as main effect (Pillai's Trace = 0.18; $F(1,110) = 24.29$; $p < 0.001$; partial $\eta^2 = 0.18$). The univariate followup tests for within subject difference suggested significant difference over time in number of illegal moves ($F(1,110) = 24.29$; $p < 0.001$; partial $\eta^2 = 0.18$). At Time 2 the number of illegal moves was lower for both groups.

In regards to between subject difference, there was significant univariate difference in regards to results for the two groups ($F(1,110) = 12.86$; $p = 0.001$; partial $\eta^2 = 0.1$). The ADHD dyads had made more illegal moves¹ than comparison dyads.

In order to explore further the differences over time, we did a repeated measures MANOVA with individual variables instead of dyadic variables. We divided the participants into four groups: children with ADHD, friends of children with ADHD, control children, and friends of control children. Then we compared the four groups in regards to number of illegal moves separated for Time 1 and 2. Within subject factor were illegal moves and between subject factor was group. Multivariate results were significant for main effect: illegal moves (Pillai's Trace = 0.11; $F(1,219) = 28.41$; $p <$

1

The illegal moves variables used for these analyses were positively skewed. However, transformed variables results were consistent with non-transformed variables results. Therefore, to facilitate interpretation, here we report the non-transformed results.

0.001; partial $\eta^2 = 0.11$) and interaction: illegal moves by group (Pillai's Trace = 0.07; $F(3,219) = 5.44$; $p = 0.001$; partial $\eta^2 = 0.69$). The univariate followup for group as a between subject factor was also significant ($F[3,219] = 8.63$; $p < 0.001$; partial $\eta^2 = 0.11$). Although all groups had reduces number of illegal moves at Time 2, Tukey post-hoc comparisons of the four groups indicated significant difference between: children with ADHD ($M = 8.38$, 95% CI [7.16, 9.6]) and control children ($M = 4.26$, 95% CI [2.74, 5.78]), $p < 0.001$ and children with ADHD and friends of control children ($M = 4.08$, 95% CI [2.54, 5.62]), $p < 0.001$. Additionally, there was a trend approaching significance of a difference between children with ADHD and their friends ($M = 6.24$, 95% CI [5.02, 7.47]), $p = 0.07$. These results indicate that although the number of illegal moves receded over time, the ADHD group still made the most illegal moves in comparison to their own friends and control children and their friends. In comparison, the analyses at the first phase of the project, using cross-sectional approach at Time 1, indicated that children with ADHD made twice as many illegal manoeuvres as comparison children (Normand et al., 2011).

Consideration for friend's wishes and preferences (Hypothesis #7). For the statistical analyses we used dyadic variables regarding the card-sharing and the game planning tasks. These observational data were collected from all children and their friends at both Time 1 and Time 2 through the card-sharing and the game planning tasks. The preliminary data analyses and data cleaning indicated that the negative variables for these tasks lacked statistical variability. Therefore, in order to preserve as much data as possible, we combined negative and neutral variables, creating a non-positive category.

Originally proposals were coded in three categories: self-centered, neutral, and altruistic. The self-centered category did not have sufficient statistical variability, and therefore we created a non-altruistic proposals variable combining the data from the self-centered and neutral categories. Additionally, the proposals were coded as insensitive, new, and sensitive, where the insensitive proposal variables lacked sufficient statistical variability. Therefore, we created non-sensitive proposals variables combining the insensitive and new proposals variables.

Preferences that were originally coded as inquiry of preference and expression of preference both lacked variability. Therefore, we combined the data from the two categories into a total preference category. The responses to preferences, which were initially acceptance and refusal, were also combined into a total response variable, again due to issues with variability.

Card-sharing task. A repeated measures MANOVA was performed with the altruistic and non-altruistic proposals variables as dependent variables. The assumption of equality of variance was not met for non-altruistic proposals in Time 1 (Levene's test: $F = 10.27$; $p = 0.002$). Therefore, Time 1 and Time 2 data were tested separately. However, for the Time 1 data the assumption of equality of variance was still violated. Since the violation of the homogeneity of variance assumption extended to the separate data as well, here we retain the non-separate data statistics to facilitate interpretation. However, since the violation compromised the accuracy of the F test, the interpretation needs to be done with caution and a replication of the study will be needed to verify our findings.

For the repeated measures MANOVA the altruistic and non-altruistic proposals variables were used as dependent variables, the between subject factor for the analysis

was group and the within subjects factor was time. The test was significant only in regards to time (Pillai's Trace = 0.08; $F(2,109) = 4.60$; $p = 0.012$; partial $\eta^2 = 0.08$). The between subject factor group approached significance ($F[2,109] = 2.7$; $p = 0.07$, partial $\eta^2 = 0.05$). These results suggest that there was a change over time within the dyads. The univariate followup tests for within subject difference suggested significant difference over time for the altruistic proposals ($F[1,110] = 8.98$; $p = 0.003$, partial $\eta^2 = 0.075$). The altruistic proposals variable was higher for both groups at Time 2. In regards to between group differences, considering the lack of significance of group at $p < 0.05$, only non-altruistic proposals showed a trend approaching statistical significance ($F[1,110] = 5.17$; $p = 0.025$, partial $\eta^2 = 0.045$) with ADHD group being higher than comparison group.

A repeated measures MANOVA with sensitive and non-sensitive proposals as dependent variables, between subject factor group, and within subject factor time was significant for main effects: group (Pillai's Trace = 0.09; $F(2,109) = 5.14$; $p = 0.007$; partial $\eta^2 = 0.09$) and time (Pillai's Trace = 0.13; $F(2,109) = 8.5$; $p < 0.001$; partial $\eta^2 = 0.13$). The univariate followup tests suggested that both sensitive and non-sensitive proposal variables had a statistically significant change over time: sensitive ($F[1,110] = 4.11$; $p = 0.04$, partial $\eta^2 = 0.04$) and non-sensitive ($F[1,110] = 8.20$; $p = 0.005$, partial $\eta^2 = 0.07$). The sensitive proposals category was lower for both groups at Time 2 while non-sensitive proposals was higher for both groups at Time 2. There was no interaction at $p < .05$. The differences between the groups were statistically significant for non-sensitive proposals ($F[1,110] = 6.82$; $p = 0.01$, partial $\eta^2 = 0.06$) as the comparison group was lower.

However, for this test the assumption of equality of variance was not met for non-sensitive proposals in Time 1 (Levene's test: $F = 16.55$; $p < 0.001$). The analysis was repeated with Time 1 and Time 2 data tested separately. However, for the Time 1 data the assumption of equality of variance was still violated. Since the violation of the homogeneity of variance assumption extended to the separate data, here we retain the non-separate data statistics to facilitate interpretation. However, since the violation has compromised the accuracy of the F test, a replication of the study will be needed to verify our findings, and results have to be interpreted with caution.

A repeated measures MANOVA with number of acceptances and refusals of friend's proposals as dependent variables, group as between and within subject factor time was significant for main effect of time: (Pillai's Trace = 0.09; $F[1,110] = 10.96$; $p = 0.001$; partial $\eta^2 = 0.09$) and not significant for the interaction between time and group. The number of acceptances and refusals in both groups was higher at Time 2 ($M = 2.47$, 95% CI [2.09, 2.86]). These results suggest that all participants and their friends felt more at ease to make propositions and refuse their friends' proposals after being friends for a longer time.

A repeated measures MANOVA, with number of expressed preferences in regards to card sharing as dependent variables, group as between and within subject factor time, was not significant at $p < .05$. This indicated that there was no statistically significant change over time within the child-friend dyads and also no statistically significant change between the two groups.

Game-planning task. A repeated measures MANOVA with number of acceptances and refusals of friend's proposals as dependent variables, group as between

and within subject factor time was not significant at $p < .05$. However, there was a within subject trend approaching significance (Pillai's Trace = 0.03; $F(1,110) = 3.8$; $p = 0.054$; partial $\eta^2 = 0.03$) indicating an emerging difference between the Time 1 and Time 2 results. The number of acceptances and refusals in both groups during the game planning task was lower at Time 2 ($M = 1.01$, 95% CI [0.86, 1.15]). The between subject differences were also not statistically significant at $p < .05$, but there was a trend approaching significance ($F[1,110] = 3.21$; $p = 0.08$, partial $\eta^2 = 0.03$) with the comparison group being lower than the ADHD group.

A multivariate omnibus test with number of expressed preferences in regards to game planning as dependent variables, group between and within subject factor time was significant for main effect of time: (Pillai's Trace = 0.06; $F(1,110) = 7.43$; $p = 0.007$; partial $\eta^2 = 0.06$). At Time 2 both ADHD and comparison group were lower: ADHD ($M = 1.62$, 95% CI [1.2, 2.0]); comparison ($M = 1.4$, 95% CI [0.9, 1.9]). The main effect of group was not significant at $p < 0.05$, which suggests no differences between the groups in regards to number of preferences.

In comparison, the findings from the first phase of the project pertaining to the card-sharing task were that children with ADHD made more insensitive and self-centred proposals and fewer sensitive proposals and asked their friends' preferences less often than comparison children. There were no significant differences between the groups in regards to altruistic, neutral or new proposals. Regarding the game-choice task, the initial findings suggested that children with ADHD made more insensitive proposals and refused their friends' proposals more often than comparison children (Normand et al., 2011).

Displayed affect (Hypothesis #8). The observational data for the following analyses were collected from all children and their friends at Time 1 and Time 2 through the card sharing, game planning, and car race tasks. In order to explore Hypothesis 8, we used dyadic data. The intraclass correlations between the variables analyzed for this hypothesis were between -.52 and .35, which suggests that the relationships between the explored variables were low to moderate. For the analyses we used the affect variables (positive, neutral, and negative affect) from the observational tasks. The positive affect variables were entered in analyses directly¹. The negative affect variables had no significant variability, which prevented them from being used in the analyses, as they did not meet the statistics' assumptions. Therefore, in order to preserve as much data as possible, we averaged the negative and neutral affect variables creating non-positive affect variables.

Card-sharing task. A repeated measures MANOVA was performed with the positive and non-positive affect variables as dependent variables. The between subject factor for the analysis was group and within subjects factor was time. There were no significant multivariate effects for group and time at $p < .05$. However, there was a trend approaching significance ($F(1,110) = 3.84$; $p = 0.053$, partial $\eta^2 = 0.03$) indicating an

1

The positive affect variables used for these analyses were positively skewed. However, transformed variables results were consistent with non-transformed variables results. Therefore, to facilitate interpretation, here we report the non-transformed results.

emerging difference between the ADHD and comparison groups in regards to non-positive affect. The results for the ADHD group were higher.

Game planning task. We did a repeated measures MANOVA with positive and non-positive affect variables as dependent variables, between subject factor group and within subject factor time. Levene's Test of Equality of Error Variances was significant for positive affect at Time 2, which suggests significant discrepancies in cell variance that can lead to unreliable statistical outcomes.

The multivariate omnibus test showed significant between and within subject main effects for group (Pillai's Trace = 0.07; $F(2,109) = 4.23$; $p = 0.02$; partial $\eta^2 = 0.07$) and time (Pillai's Trace = 0.1; $F(2,109) = 6.1$; $p = 0.003$; partial $\eta^2 = 0.1$). There was no significant interaction at $p < 0.5$. The univariate followup tests for within subject difference suggested significant difference over time for both positive affect ($F(1,110) = 6.99$; $p = 0.009$; partial $\eta^2 = 0.06$) and non-positive affect ($F(1,110) = 5.7$; $p = 0.019$; partial $\eta^2 = 0.05$). Both positive and non-positive affect were higher for both groups at Time 2. In regard to between subject effects reflecting the differences between the groups, the positive affect was significantly different between dyads ($F(1,110) = 8.53$; $p = 0.004$; partial $\eta^2 = 0.07$). The positive affect of the comparison group was higher than the positive affect of the ADHD group. The results for non-positive affect were not significant at $p < .05$.

Car-race task. The repeated measures MANOVA with positive and non-positive affect as dependent variables showed no difference between the ADHD and comparison groups. There was significant main effect in regards to time as a within subject factor (Pillai's Trace = 0.1; $F(2,109) = 6.11$; $p = 0.003$; partial $\eta^2 = 0.1$). Univariate followup

tests showed that both positive and non-positive affect were significantly different across the time points. Positive: ($F[1,110] = 9.08$; $p = 0.003$; partial $\eta^2 = 0.08$); non-positive: ($F[1,110] = 12.3$; $p = 0.001$; partial $\eta^2 = 0.1$). Positive affect was lower for both groups at Time 2 while non-positive affect was higher for both groups at Time 2.

In comparison, the analyses at the first phase of the project suggested no significant between group differences with regard to affect on the car-race, card-sharing, and game-choice tasks (Normand et al., 2011).

Displayed affect and duration of negotiation (Hypothesis #9). The observational data for the following analyses were collected from all children and their friends at Time 1 and Time 2 through the card sharing and game planning tasks. We created dyadic variables for the positive and non-positive affect variables in the card-sharing and the game negotiation tasks and used them as dependent variables in the analyses. The duration of the two tasks was entered in repeated measures MANCOVA tests as a covariate to control for length of interaction. The within subject factor was time and the between subject factor was group. The repeated measures MANCOVA for both tasks yielded significant time by task duration (covariate) interaction, which indicated violation of the homogeneity of the slopes assumption to the MANCOVA. Therefore, task duration was entered in repeated measures MANOVA analyses for both tasks as a dependent variable in order to assess group differences over time (Green & Salkind, 2011).

Card-sharing task. The repeated measures MANOVA indicated significant main effect for group: (Pillai's Trace = 0.08; $F(3,108) = 3.21$; $p = 0.03$; partial $\eta^2 = 0.08$). The

within subject results indicating difference over time were not significant at $p < 0.05$. The followup univariate tests indicated significant differences between ADHD and comparison groups in non-positive affect ($F(1,110) = 3.84$; $p = 0.05$; partial $\eta^2 = 0.03$) with ADHD group being higher, and significant difference in duration of negotiation ($F[1,110] = 4.58$; $p = 0.03$; partial $\eta^2 = 0.04$) with ADHD group being higher than the comparison group.

Game planning task. Repeated measures MANOVA yielded significant main effects for group (between subject variance): (Pillai's Trace = 0.08; $F(3,108) = 3.27$; $p = 0.02$; partial $\eta^2 = 0.08$) and time (within subject variance): (Pillai's Trace = 0.1; $F(3,108) = 4.04$; $p = 0.009$; partial $\eta^2 = 0.1$). The followup univariate tests of the within subject results were significant for: positive affect ($F(1,110) = 6.99$; $p = 0.009$; partial $\eta^2 = 0.06$), which was higher at Time 2 for both groups; non-positive affect ($F(1,110) = 5.7$; $p = 0.02$; partial $\eta^2 = 0.05$), also higher at Time 2 for both groups; and duration of negotiation ($F[1,110] = 4.84$; $p = 0.03$; partial $\eta^2 = 0.04$), that was higher at Time 1 for both groups.

The univariate analyses for between subject differences were significant for positive affect ($F[1,110] = 8.53$; $p = 0.004$; partial $\eta^2 = 0.07$) with comparison group higher than ADHD group. Non-positive affect and duration of negotiation were not statistically significant at $p < 0.05$.

However, the results for the game planning task need to be interpreted with caution, since the assumption of equality of variance was not met for positive affect in Time 2 (Levene's test: $F = 8.27$; $p = 0.005$). Since the violation has compromised the accuracy of the F test, a replication of the study will be needed to verify our findings.

Mutual responsiveness, support, and validation (Hypothesis #10).). The data for the following analyses were collected from all children and their friends at Time 1 and Time 2 through the Friendship Quality Measure (see Appendix 5). Repeated measures MANOVA was performed with intimate exchange (subject intimacy), intimate exchange (friend intimacy), help and guidance, and validation and caring as dependent variables. For the analysis we used dyadic variables in order to capture variability within the dyad. The within subject factor was difference across time, and the between subject factor was difference between the ADHD and comparison groups. The test showed significant between and within subject main effects for group (Pillai's Trace = 0.12; $F(4,107) = 3.56$; $p = 0.009$; partial $\eta^2 = 0.12$) and time (Pillai's Trace = 0.08; $F(4,107) = 2.48$, $p = 0.05$; partial $\eta^2 = 0.08$). The univariate followup tests for within subject difference were significant for validation and caring ($F[1,110] = 3.85$; $p = 0.05$; partial $\eta^2 = 0.03$) across time. In regards to between subject differences, there was significant difference between the dyads in regards to intimate exchange (subject intimacy): ($F[1,110] = 7.05$; $p = 0.009$; partial $\eta^2 = 0.06$); help and guidance: ($F[1,110] = 7.13$; $p = 0.009$; partial $\eta^2 = 0.06$); and validation and caring: ($F[1,110] = 9.31$; $p = 0.003$; partial $\eta^2 = 0.08$). In all these categories the comparison group was higher than the ADHD group.

Equitable distribution of power (Hypothesis #11). The data for the following analyses are based on observations of the ADHD and comparison dyads during the card sharing and game planning tasks. Repeated measures logistic regression using generalized estimating equations was used to explore the longitudinal binary data for the power balance observed in child-friend dyads. We used the data gathered at Time 1 and

Time 2 with binomial distribution and logit link function for binary outcomes. As subject effect we chose dyad and as within-subject effect we chose time. Power equality was included in the analyses as a dependent variable. Although the model goodness-of-fit value was sufficient (Quasi likelihood = 6594.05) the validity of this model was uncertain, since there was no variance between Time 1 and Time 2 measurements. However, there was significant difference between ADHD and comparison groups (Wald Chi Square = 4.495, $p = .034$). An odds ratio was used since we have a binary outcome model. The log-odds of power equality ($B = -0.869$) indicated that with a change from comparison group to ADHD group there is a 0.869 points decrease in the log-odds of equality of power.

In order to test further the goodness-of-fit of the model, we ran it again without the repeated measures condition. Although the goodness-of-fit (Quasi likelihood = 596.37) decreased substantially, there was still significant difference between ADHD and comparison groups (Wald Chi Square = 4.24, $p = .039$; $B = -0.654$). This result suggests that if repeated measures factor is disregarded there is still a decrease of 0.654 points in the log-odds of equality of power from comparison to ADHD group.

To account for the variability between the two models, we tested the two time points separately. For Time 1, the group affiliation of a dyad significantly predicted the magnitude of power equality within the dyad (Wald Chi Square = 4.49, $p = 0.034$; $B = -0.869$). The calculated odds ratio ($1/0.419 = 2.39$) implied that as the group changed from comparison to ADHD the odds of equal to non-equal distribution of power increased by 0.419. Additionally, the odds of a control group dyad having equal power compared to not having equal power were 2.39 times the odds of an ADHD dyad having equal power

between the two friends. The results were reliable at 95% CI [0.19, 0.94]. The Time 2 results had no variability, which suggested a lack of between group differences.

Discussion

The current study is a multimethod, longitudinal exploration of friendship patterns of children with ADHD. We relied on information from several sources, such as parental and teacher reports, questionnaire data from the child and his/her friend, and also observational data from several interactive tasks. Consequently, we believe that the results we obtained are comprehensive and reflect natural conditions of friendships in late childhood and early adolescence.

Friendship Stability and Duration (Hypothesis 1)

The majority of our participants in both ADHD and control groups were boys and same-sex friendships predominated. The majority of children in the ADHD group had a friend without ADHD. These proportions did not change throughout the two phases of the study. Most of the children in both groups came to the second session with the same friend, who was predominantly their best friend, and overall perceived their friendships as stable.

Hypothesis one stating that children with ADHD will have less stable and shorter friendships than comparison children was partially supported by our data. The proposition that children with ADHD will have less stable friendships than comparison children was supported. In regards to the proposition that children with ADHD will have shorter friendships, our analyses indicated a trend approaching significance that needs to be explored by future research. In regards to friendship stability, our results suggest that

over time children with ADHD lose more friends, including best friends. Our data analyses also indicated a trend toward significance in regard to duration of friendship, where children in the ADHD group reported having shorter friendships over time than children in the comparison group. This is consistent with the findings of Marton, Weiner, Rogers, & Moore (2012), noting that children with ADHD struggle to keep friendships and their friendships are of shorter duration. Additionally, children with ADHD have been found to have shorter corroborated friendships (Marton et al., 2012) and poorer friendship stability (Blachman & Hinshaw, 2002).

These results are concerning, since friendship and friendship stability are seen as psychosocial protective factors for children and adolescents. Friendship stability is considered as a marker of successful adaptation and as a potential protective factor bolstering favourable behavioural outcomes (Cicchetti, Rogosch, Lynch, & Holt, 1993). Children who have difficulties in maintaining friendships are likely to experience social and psychological maladjustment (Hartup, 1989b). However, research also suggests that friendships are more stable in elementary-school-aged children than in children in early adolescence (Poulin & Chan, 2010). It is possible that the lesser friendship stability and trend to shorter duration of friendships in children with ADHD in our study is influenced by these developmental trends. Regrettably, the size of our sample did not provide us with sufficient power to examine the relationship between age and friendship stability in children and early adolescents with ADHD. Further research is needed to clarify the relationship between these factors and to establish whether the friendships of children with ADHD follow the trends of development of friendships in typically developing children in regard to friendship stability.

Although our findings are significant, it should also be noted that several of the same variables that predicted less friendship stability, such as insensitive proposals, low initial friendship quality, and balance of power (Normand et al., 2013), also predicted the non-return of dyads for second participation. Furthermore, when assessing the reasons for non-return for second participation, we relied on parent report. As reason for not returning, parents of children in the ADHD group provided us with the information about dissolution of their child's friendships. However, research supports the notion that children with ADHD and their parents view friendship networks differently, as often such children report having more friends than reported by their parents (Glass, Flory, & Hankin, 2012). Therefore, future investigation is needed in order to establish more unequivocally the factors that contribute to stability in friendships of youth with ADHD.

Place Where Friendship Started and Age of Friends (Hypotheses 2 & 3)

Contextual factors such as the place where the friendship started are of significant importance for the development of friendships. Friendships that occur outside of school have been associated with an increased frequency of deviant behaviours, such as skipping school (Stattin, Kerr, & Skoog, 2011). An increased peer susceptibility to deviant behaviours has been found to occur when friendships were formed outside of school and friends lived within the same neighbourhood (Dishion, Andrews, & Crosby, 1995). Additionally, it is more likely that socially rejected children will have friendships that originate outside of school (George & Hartmann, 1996). This has been related to parental monitoring of children's activities, as reported by children, parents, and teachers. Parental monitoring of friendship interactions increases supervised time with friends and predicts fewer deviant behaviours (Pettit, Laird, Dodge, Bates, & Criss, 2001).

In our study, we did not restrict the friendship nominations to the classroom environment only. There is an abundance of research showing that children with ADHD are often rated by their peers as unpopular (Erhardt & Hinshaw, 1994; Hoza et al., 2005; Pelham & Bender, 1982). Therefore, procedures that rely on context-specific nominations and establish more restrictive procedures in this regard tend to underestimate the number of friendships, especially among unpopular children (George & Hartmann, 1996).

The age of peers chosen as friends, especially during elementary and middle school years, is guided by social principles such as similarity (Schneider et al., 1994). Children have been found to select as friends peers similar to themselves in achievement (Epstein, 1989), interests, attitudes, and values (Wiener & Schneider, 2002). Children with social difficulties have been found to select younger playmates (Epstein, 1989; Wiener & Schneider, 2002; Wiener & Sunohara, 1998). Socially rejected children often have friends younger than themselves who are generally less accepted. It is hypothesized that this is due to emotional and developmental immaturity, and in selecting younger friends the child is in fact following the principle of similarity (Wiener & Sunohara, 1998).

However, our hypotheses that children and youth with ADHD will have more friends from outside of school and younger friends than comparison children were not supported. Our results did not indicate a significant difference between children with ADHD and comparison children in regards to where the friendships they listed had started. Our results also did not indicate a difference in age of friends between the ADHD and the comparison groups. This may be a consequence of our sampling. The children participating in our study were asked to bring a friend, and often identified the friend they

had brought as a “best friend.” Therefore, it is probable that our sample is part of a subpopulation of youth with ADHD who have relatively fewer social difficulties and therefore have succeeded in establishing meaningful friendships in a way that closely approximates the friendships of the control children. However, additional research is needed to explore the relationship between the place where the friendships of children with ADHD start, the age of the friend, and the subsequent development of these friendships.

Familial Factors (Hypothesis 4)

In our study the attrition rate in the ADHD group was significantly higher than in the comparison group. According to parents’ reports of children with ADHD who did not return for the second participation, their child had lost the friend. Additionally, parents reported difficulties in organizing activities for both child and friend, namely participation in the second stage of our study. These results are an indication of the interpersonal difficulties of children with ADHD. However, they are also pertinent to the predominance of single-parent families in this group.

Our hypothesis that children with ADHD will belong to single-parent families more often than comparison children was supported. Our data suggest that in the ADHD group there were more single-parent households than in the comparison group. Further increase in the number of single-parent households was present in the groups characterised by ADHD with comorbid anxiety and ODD. Probably this leads to greater difficulty for such parents in managing their child’s schedule and guiding his/her activities in a fashion that will mitigate the friendship struggles of children with ADHD.

Parenting has been found to have a great role in the facilitation of friendships during childhood and early adolescence. Pre-arranged play sessions are among the primary bases of friendships among children (Frankel, 2003; Ladd & Hart, 1998). The frequency of initiation by parents of social opportunities for their children has been associated with higher levels of prosocial behaviour and greater peer acceptance (Ladd, 1999).

Furthermore, there is a strong relationship suggested between parental behaviours and peer relationships in children with ADHD. Parent socialization with other parents on the playground was positively correlated with teacher ratings of the child's peer acceptance (Mikami, 2010). Another study found that mothers with ADHD report less consistent parenting behaviours with lower monitoring and knowledge of their child's activities (Murray & Johnston, 2006). Within the same study, the mothers were observed to generate lower-quality solutions to child behaviour problems. This was postulated to be related to impairment in social skills on the part of the mothers with ADHD.

Our results are indirectly suggestive of family stress. Family environment can influence the friendships of children and adolescents by moderating the effect of friendship quality (Ciairano, Rabaglietti, Roggero, Bonino, & Beyers, 2007). Family stress was found to be a predictor for lower self-perception, more depressive feelings, and stronger sense of alienation in adolescents. However, high family stress was also related to higher quality friendships in typically developing adolescents. The increased quality of the friendships was interpreted as a compensatory mechanism (Ciairano et al., 2007).

A child's home environment can interact in multidirectional fashion with extra-familial factors such as relationships with friends (Perkins & Jones, 2004). Relationship

dynamics in the home, such as implicit and explicit knowledge about social constraints and rules, social learning, and positive and negative social feedback, exert an influence over behaviours within the home and with friends (Reis, Collins, & Berscheid, 2000). Psychological difficulties influence relationship dynamics. Mothers of children with ADHD have been found to be at risk of depression (Nigg & Hinshaw, 1998), which contributes to the development of conduct problems among children with ADHD (Chronis, Pelham, Baumann, Kipp, Jones, & Rathouz, 2007). Additionally, elevated parental anxiety has been shown to contribute to elevated anxiety in children with ADHD (Pfiffner & McBurnett, 2006). Parental social maladjustment and psychopathology are risk factors contributing to the general level of familial stress. However, there is no unequivocal data as to how parental psychopathology contributes to the friendships of children and youth with ADHD (Mendelson, 2012).

There is multiple evidence that family environment has a great influence over the behaviours and social interactions of children and adolescents. However, our study lacks sufficient data to make direct inferences about specifics of the family environment in the ADHD and comparison groups. Further research is needed in order to explore the friendship dynamics of children with ADHD and how they may be related to the home environment.

Friendship Features (Hypothesis 5)

Positive friendship quality is considered a key factor in maintaining good friendships (Normand et al., 2013). However, friendships high in positive features have also been found to lead to negative outcomes such as deviancy, co-rumination, that is,

extensive discussion, speculation, and revisiting of problems, and increased internalizing symptoms (Hartup, 2005; Glass et al., 2012).

Our findings support the hypothesis that children with ADHD and their friends consistently and over time report more negative features of their friendships than the comparison children. Our data suggest a significant decrease in reported positive friendship features and an increase in negative friendship features in all groups over time. However, at both participations, ADHD dyads reported fewer positive friendship features than comparison dyads. Children with ADHD had the lowest number of perceived positive friendship features during the initial participation. This result is consistent with research on the friendships of children with externalizing problems, who were found to be capable of establishing friendships, but saw their relationships in a less positive way, with excess individualism and a risk of inequality of exchanges (Laghi, Baiocco, Cannoni, Di Norcia, Baumgartner, & Bombi, 2013). Moreover, the friendships of children without ADHD are found to be marked by higher friendship satisfaction than the friendships of children with ADHD (Ladd, Kochenderfer, & Coleman, 1996; Normand et al., 2013).

When results were considered individually, outside of the dyadic structure, there was also a marked difference between the report of the child and his/her friend. In both groups (ADHD and comparison), at Time 1, the child reported a lower number of positive friendship features than his/her friend. At Time 2, although there was an overall decrease in positive friendship features, the friends of children with ADHD still reported a greater number of positive friendship features than the children with ADHD.

These results reveal some of the interpersonal dynamic within the friendly dyads. In our study, the participation of the child and his/her friend was through the child, who was approached and asked to invite the friend. This gave the child and his/her parents the leading role in arranging the participation. Perhaps this contributed to higher confidence in the child vis-a-vis the study, and subsequently to a more balanced report of perceived friendship features. However, since there is no comparable research, further studies are needed in order to explore this hypothesis.

At Time 2, unexpectedly, the friends of control children reported the fewest positive friendship features in comparison to their own friends, children with ADHD, and friends of the children with ADHD. At Time 1, the friends of comparison children had reported more positive friendship features than all other participants. These results, although surprising, are understandable considering the overall trajectory of friendship development. The social penetration theory (Altman & Taylor, 1973) hypothesizes that as friendship develops the friends become more intimate by becoming more open to the other person. The reporting of fewer positive friendship characteristics in a stable and continuing friendship may be an expression of this tendency. Friends have probably become more spontaneous and realistic about one another and do not need to emphasize positive aspects as much as earlier in the friendship. Furthermore, the decrease in reported positive and increase in reported negative friendship features probably reflects the greater openness and security within the friendship, which allows the two friends to be more intimate with one another, and also more open in their opinions. Additionally, our sample consisted predominantly of Caucasian children, which does not allow for exploration of friendship features and ethnicity. However, there is research suggesting

that white adolescents may be more likely to have lower friend-reported positive friendship quality ratings (Glass et al., 2012).

Research provides mixed results in regards to positive and negative friendship features and whether the absence of positive features or the presence of negative features is more significant for the development of friendships during childhood and adolescence (Bagwell & Schmidt, 2011). La Greca and Harrison (2005) found that adolescents whose friendships had higher level of negative friendship features reported greater social anxiety. Having a best friendship with a high level of positive friendship features alleviated social anxiety. Burk and Laursen (2005) also found a correlation between negative friendship features and parental reports of internalizing problems. In their study, however, positive friendship features demonstrated few reliable ties to conflict management and individual adjustment. Demir and Urberg (2004) reported that both positive and negative friendship features were related to depressed mood and happiness. Positive friendship features were most strongly associated with social adjustment when the quantity of friends and the degree of conflict in the relationship were taken into account. Additionally, within this study positive friendship features had an effect on adjustment only for boys. Positive friendship features were found to predict greater expression of positive affect (Hussong, 2000). However, within the same study, having more friendships with more positive friendship features predicted adolescent substance use. Among American adolescents, having friendships with more positive friendship features was not related to the presence of aggression or externalizing problems (Burk & Laursen, 2005). These studies suggest that although the assessment of friendship quality is connected to the presence of positive and negative friendship features, the connection

is not linear and there are more contributing factors that determine the dimensions of friendships.

There are two main approaches to the assessment of friendship quality. One considers dimensions of friendship quality, assuming that relationships can be differentiated by the amount of particular features, i.e., degree of positive and negative features present. Another approach involves identifying meaningful patterns of friendship quality and the context of the relationship in which they are expressed that might be indicative of the development of friendships (Bagwell & Schmidt, 2011). In that regard, the positive and negative friendship features reported by the friends need to be placed within the context of the particular friendship in order to comprehend their meaning. This asserts the importance of examining multiple features together and recognizing patterns of features (Selfhout, Branje, & Meeus, 2009). Although within the literature friendship quality is associated with adjustment, it is not clear what particular aspects of friendship quality are responsible for positive adjustment (Bagwell & Schmidt, 2011).

Friendship Behaviour Dynamics (Hypotheses 6 & 7)

At their initial participation, children with ADHD performed more rule violations when competing against their friends than did comparison children under the same conditions. However, over time in both groups there was a decrease in rule violations, but the ADHD group was still characterized by a greater number of rule violations. Children with ADHD made more rule violations in comparison both to their own friends, and to comparison children and their friends. This results support our hypothesis that children with ADHD will commit more rule violations than comparison children, as per the initial findings.

These results are consistent with previous findings indicating that children with ADHD have difficulty in associating behaviours and consequences, which obstructs their learning from interpersonal and environmental feedback (Sagvolden, Johansen, Aase, & Russell, 2005). Our results show a learning trajectory for the children with ADHD that coincides with that of all other participants in our study. However, it is of importance that although they are more familiar with the task at their second participation and know the rules and expectations, they still fail to adjust themselves to the task as well as the rest of their peers. Research indicates that children who are rejected by their peers differ from popular children in a number of specific behaviours: verbal and physical aggression, disruptive attempts to enter new groups, and negative classroom behaviours, such as being off task, noisy and bothersome, violating the rules, arguing, and being quick tempered (Guevremont & Dumas, 1994).

An important feature of friendship interaction is the consideration for the friend's wishes and preferences. During the initial participation, children with ADHD made more insensitive and self-centred proposals, refused their friends' proposals more often, and asked their friends' preferences less often than comparison children.

During their second participation, while attempting to share a valued commodity, all children made more altruistic proposals. In addition, the ADHD group was also characterized by a trend toward a greater number of non-altruistic proposals than the comparison group. Both groups made fewer sensitive proposals and more non-sensitive proposals, but the ADHD group was again characterized by a trend toward a higher number of non-sensitive proposals. In both groups there were more acceptances and refusals of friends' proposals at the second participation. These findings only partially

support our hypothesis that, as per the initial findings, children with ADHD will make fewer sensitive and more self-centred proposals, will not consider their friend's preferences, and will reject more of their friend's proposals.

Overall, these results suggest that children with ADHD display more interpersonal activity through making more proposals, both altruistic and non-altruistic. This is consistent with descriptions of children with ADHD as more socially busy, with elevated levels of interpersonal interest and engagement (Whalen, Henker, Castro, & Granger, 1987). Therefore it can be assumed that children with ADHD engage in a higher number of social interactions, both positive and negative, and have greater social visibility compared to typical children the same age. Consequently, this leads to a higher number of negative social exchanges (Whalen & Henker, 1985). This is further exacerbated by atypical intensity of behaviour and affect in ADHD children, which can be characterized as being loud, energetic, or forceful/bossy (Whalen & Henker, 1992).

However, the ADHD group was also characterized by more non-altruistic and non-sensitive proposals. This is not surprising, considering that ADHD children display substantial social knowledge deficits which prevent them from adjusting their behaviour in order to respond to their friends' needs and preferences. The social knowledge deficits were found to be most marked when ADHD children were asked to describe the social behaviours of their peer (Grenell, Glass, & Katz, 1987). Then they displayed much greater tolerance for disruptive and deviant behaviours in others, as opposed to the tolerance showed by comparison children. Melnick and Hinshaw (1996) emphasized the difference in social goals between children with ADHD and typical peers. The children

with ADHD sought domination and justified their trouble-making behaviours as correct and acceptable to a greater extent than control children.

During their second participation, while trying to plan a desired activity, both groups expressed fewer acceptances and refusals of friends' proposals, and expressed fewer preferences. Probably this decrease in communication is due to the familiarity of the situation, since at Time 1 the participants had already made a choice among the same number of games. Probably, during their second participation, and already being familiar with the options and their friends' preferences, they needed less discussion to reach consensus.

Friendship Affect (Hypothesis 8)

The data gathered during the first stage of our project indicated no significant difference between the groups with regard to displayed affect during the interactive tasks. The data gathered at the second stage allowed for a different and more comprehensive view of the affective interactions of the two friends in the ADHD and comparison dyads. In partial support of our hypothesis that children with ADHD and their friends will display more negative affect during activities with their friend than comparison children, we found a difference in displayed affect during the different tasks. Although results were not conclusive, there was a trend characterizing the ADHD group with higher non-positive affect at both participations during the task of sharing a valued commodity. At the second participation, while planning an activity with the friend, both positive and non-positive affect was higher for both groups in comparison to the first participation. However, at the second participation, positive affect was lower in the ADHD group than in the comparison group. In the fast-paced game, during the second participation, positive

affect was lower and non-positive affect was higher for both groups, compared to initial participation.

Overall, these results suggest elevated affective intensity in both groups over time. This is not surprising, considering that the continuity of friendship allowed all participating children to feel more at ease with expressing their emotions with one another, which perhaps brought about the elevated intensity. Additionally, research suggests that children with and without ADHD do not differ in emotional intensity (Braaten & Rosen, 2000).

Together with the elevated intensity, our results indicated more non-positive and less positive affect in the ADHD group. This is consistent with previous findings in the field. Research in ADHD behaviours and emotional characteristics found that children who scored higher on measures of impulsivity had higher levels of negative affect and more variable affect (Shea & Fisher, 1996). Furthermore, parents' reports of the emotional behaviours of children with ADHD reveal more frequent behaviours that are indicative of sadness, anger, and guilt (Braaten & Rosen, 2000). This result supports previous findings of significant correlation between negative affect and ADHD symptoms (Cole, Zahn-Waxler, & Smith, 1994) and is consistent with Barkley's model of ADHD, which predicts that ADHD and emotional control are inversely related (Barkley, 1997).

Although not surprising, these findings pose the question: how do such features affect friendships? Research with individuals with ADHD is scarce, but there is evidence from related fields. Research suggests that aggressive and antisocial children are often rejected by their peers, but they still have friendships (Mrug, Hoza, & Bukowski, 2004).

Therefore, although such children have socially unfavourable characteristics, they are not excluded from involvement in friendships. There is robust research, mostly in the field of childhood aggression, supporting the mutual complementarity of the two friends and their adjustment to one another (Halligan & Philips, 2010). Children select their friends from the peer group available to them and seek within their friendships similarity of attitudes and behaviours, and reinforcement (Dishion et al., 1994). In cases of socially struggling children, their friendships provide a low level of emotional support in spite of their need for such, but they remain within the friendship due to a lack of alternatives (Sijtsema, Lindenberg, & Veenstra, 2010).

Our findings indicated differences in affect between the observational tasks used in our study. This requires more in-depth research, since friendships are also characterized by the activities preferred by the friends. However, our results indicate that on an affective level, the fast-paced game was characterized by a higher non-positive affect, which is often associated with negative friendship features.

Childhood friendships have been found to be characterized by positive and negative features. The positive and negative aspects of friendships are not strongly correlated, which suggests that friendships incorporate both, without positive and negative aspects being mutually exclusive (Berndt, 2004). Among the negative features is rivalry, and when describing friendships, children have acknowledged engagement in intense rivalry (Berndt, 1986). The fast-paced competitive game which we used as one of our observational tasks promotes rivalry between the two friends. That task was constructed so that one of the friends won and the other one lost. Therefore, our results indicating elevation of negative affect for both groups are not surprising. In order to

engage in the game, to participate fully, and to win, children had to be competitive and treat their friend as a rival. This was most probably the emotional motivation behind the observed negative affect.

Adjustment of affect and duration of interaction (Hypothesis 9)

To shed further light on the link between expressed affect and duration of interaction, we looked into the coincidence of non-positive affect and duration of interactions which needed to end with some consensus, i.e., both friends needed to reach an agreement for the task to end. Our findings are in support of the hypothesis that children with ADHD and their friends will be less competent in adjusting their affect according to the situation and the affect of their friend, which will coincide with increase in the duration of negotiation tasks that require reaching a common decision.

In regards to planning a pleasurable activity, positive and non-positive affect was higher for both groups at the second participation. This increase of emotional intensity was probably due to greater familiarity with the friend and the situation, resulting in more openness. The duration of negotiation was higher only at the initial participation, which may be due to familiarity with the activities to choose from and better understanding of the friend's preferences, acquired after the first participation. However, during this task, the ADHD group showed a trend indicating less positive affect during the interaction with their friend than the comparison group.

During the task of sharing a valued commodity, the ADHD group was distinguished by higher non-positive affect and longer duration of negotiation. The elevated duration of negotiation in this task is consistent with difficulties typical for individuals with ADHD, such as difficulties in processing of referential communication

(Nilsen, Mangal, & MacDonald, 2013), which refers to the ability to provide sufficient information and appropriately interpret communicative intent (Grice, 1975). Furthermore, the accurate estimation of time, which is vital in social interactions, is impaired in children with ADHD, as they show significantly elevated overestimation of time intervals (Hurks, & Hendriksen, 2010). The same study suggests that task duration is related to attention, with a higher number of inattention symptoms correlated with larger underestimations of time. This leads to longer time spent on tasks. A recent meta-analysis supports the argument that individuals with ADHD have increased variability in reaction times, which contributes to within subject variability of timing of responses (Kofler, Rapport, Sarver, Raiker, Orban, Friedman, & Kolomeyer, 2013). Reaction times are most often attributed to periodic lapses of attention.

The coinciding duration of interaction and non-positive affect that characterized the ADHD group may indicate a specific dynamic of friendship interaction. Children with ADHD spend more time on tasks that they find challenging, which puts a burden on their partners during these tasks. Furthermore, the lesser amount of positive emotion during these interactions places an increased burden on the relationship. These results fall in line with observed social interactions between children with ADHD and typically developing peers. Although the children with ADHD were found to be competent in social behaviours necessary to enter a group of peers, there was a substantial difference in subsequent conversation and behaviour (Ronk, Hund, & Landau, 2011). Children with ADHD were more tangential in conversation and behaviour, not minding closely the ongoing activity; they displayed more negative attention-getting behaviours, and talked significantly more about themselves than the comparison peers. These results were

associated with inattentiveness to the current social context and deficit in social perspective taking (Marton, Wiener, Rogers, Moore, & Tannock, 2009).

Friendship Quality (Hypotheses 10 & 11)

The expression of mutual responsiveness, support, and validation are significant aspects of any friendship. Our results suggest development over time of validation and caring toward the friend in all participating dyads. Our findings are in support of the hypothesis that children with ADHD differ from comparison children in supportiveness towards their friends. Our results revealed significant differences between the ADHD and comparison groups in intimate exchange directed at the friend, help and guidance, and validation and caring. The ADHD group was lower in all these categories.

Research in empathy provides support for these findings. In his model of empathy, Feshbach states that it may be defined as cognitive and affective components that allow the individual to discriminate and identify emotional states and to take the respective role of the other, and evocation of affective states (Feshbach, 1978). A small sample study of empathy in 6- to 12-year-old children with ADHD indicated that boys with ADHD have decreased empathic reasoning on an empathic reasoning task compared to non-ADHD peers (Braaten & Rosen, 2000). The same study found that children with ADHD were less likely to match their emotion to stories that attempted to elicit negative emotions, while for positive emotions there was no between-group difference. They also gave fewer character-centred interpretations of emotion.

Intimate exchange directed at the friend, help and guidance, and validation and caring are responses to the perceived need of the friend. They are offered if there is an empathic identification with the friend, which, if the friend is in need, will elicit negative

emotion. However, children with ADHD seem to perceive with lowered sensitivity emotional situations that elicit negative emotions in them. This is consistent with our findings that they relate to their friends with less prosocial behaviours.

Research has supported the comparability of knowledge about social norms and expectations between children with ADHD and their typically developing peers. Children with ADHD perform as well as controls when evaluated on the effectiveness of given solutions to hypothetical social problems (Whalen & Henker, 1985). However, when they had to generate their own solutions, which will be the case in unstructured interactions with friends, the ADHD participants were significantly less resourceful than the controls. Furthermore, in structured play tasks it was found that ADHD children engage in much more cheating and are much more critical of their partners than control children (Grenell, Glass and Katz, 1987). These researchers stipulated that the ADHD group was distinctive with social knowledge deficits as to how to maintain relationships and how to deal with interpersonal relationships. Moreover, children with clinical levels of ADHD have been found to show very little prosocial behaviour regardless of reported problems with peers (Paap, Haraldsen, Breivik, Butcher, Hellem, & Stormark, 2013).

In support of our hypothesis that ADHD-friend dyads will be characterised by less equitable distribution of power than comparison dyads, our data indicate a significant difference between the two groups in regards to equality of power within the dyad. The ADHD dyads were characterized by less equal power distribution that did not change over time. This was attributed to the elevated controlling behaviours of children with ADHD toward their friends (Normand et al., 2013). However, there is research that suggests that children with ADHD may catalyze a more directive and domineering

interaction style. The response style employed by children with ADHD was found to be influential over children paired with them in a study by Landau and Milich (1988). They found that the non-ADHD partners in dyads elicited more controlling interactions and hypothesized that perhaps this was in order to compensate for their ADHD partner and maintain balance in the conversation. Furthermore, similar patterns are present in child-teacher interactions, as teachers tend to be more intense and controlling in interactions with ADHD children (Nixon, 2000). Additionally, authoritative parenting style, and negative and controlling interactions, were associated with ADHD Inattentive and Combined type symptoms (Hunt, 2013).

Summary of findings

To summarize, the friendships of children with ADHD who participated in our study differed from the friendships in our comparison group. Overall, children with ADHD had stable friendships. However, their friendships showed a trend toward lower duration and parents' reports further supported that finding. The lower duration and stability of friendships in the ADHD group coincided with more single-parent households in this group, which may indicate elevated family stress. The friendships of ADHD and comparison children were rich in positive and negative friendship features reported by the two friends, and over time there was more open reporting of the negative friendship aspects.

However, the friendship behaviour dynamics differed between the two groups. Children with ADHD violated more rules while playing with their friend, and were less altruistic and sensitive during interactions. However, although there was a difference

between ADHD and comparison children, the behavioural trajectory over time was similar, which might be an indication of similarities in the development of friendships.

Children with ADHD showed less positive and more non-positive affect in their interactions with friends. When a decision that involved a compromise had to be made, the length of interaction was greater and coincided with displayed non-positive affect. Children with ADHD reported less intimacy toward their friend, less help and guidance, and less validation and caring. Additionally, their friendly interactions were observed to be characterized by unequal power distribution.

Clinical Implications

There is substantial evidence that children with good friendships are less likely to be victimized than children without friends (Bukowski et al., 1995; Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004). High quality friendships can protect children against internalizing distress following victimization (Schmidt & Bagwell, 2007). Furthermore, friendships have been found to promote trust and intimacy and the ability to manage conflict (Erwin, 2013). Friendships may also alleviate rejection sensitivity (Bowker, Thomas, Norman, & Spencer, 2011) and may serve as a protective factor against low self-esteem and anxiety (Erath, Flanagan, Bierman, & Tu, 2010). However, the differences in friendship between children with ADHD and comparison children raise questions about the presence of adequate interventions that promote better friendships.

Friendship interventions need to be well aimed and focused at specific goals, such as finding and having a friend, improving the quality of the relationship with a friend already there, and even making friends with a more suitable friend, considering

friendship as a learning experience (Bagwell & Schmidt, 2011). Furthermore, friendship interventions with children with ADHD need to take into account their specific difficulties and strengths in order to assist them effectively in finding more and better friendships.

There is a great number of examples of intervention programs that are focused on peer acceptance and social competence (Asher et al., 1996). However, these programs often do not target friendship initiation and are not adjusted to promote friendships. Instead, they are believed to promote skills and abilities that may indirectly improve friendships (Bagwell & Schmidt, 2011). The main types of such programs are social skills training, social-cognitive programs, and peer-pairing interventions.

The social skills training programs are based on the identification of qualities that characterize children with good peer relations, and teaching these skills to children with poor peer relations (Frankel, 2005). However, although there is some evidence that these programs modify children's behaviour toward their peers, they nonetheless do not lead consistently to change in children's social standing based on peer nominations, or to having more friendships (Bagwell & Schmidt, 2011). Additionally, meta-analyses (Beelmann, Pfingsten, & Losel, 1994; Quinn, Kavale, Mathur, Rutherford, & Forness, 1999; Schneider, 1992) that summarize the utility of social skills training reveal small to moderate post-treatment effects, but weaker long-term effects (Bagwell & Schmidt, 2011).

Although social skills training programs have not shown sufficient effectiveness in improving friendships, there still are a number of areas that link social skills and friendship. These areas are: quantity of friends (Fox & Boulton, 2006), quality of

friendships (Greco & Morris, 2005), and choice of friends (Lansford, Putallaz, Grimes, Schiro-Osman, Kupersmidt, & Coie, 2006). However, the success of social skills training in promoting friendships depends on the environment where the program is implemented. There has been success of social skills training programs when they have operated within a school setting. Since school is a place where friendships occur naturally, the generalization of skills is facilitated since it does not need to be carried across settings. Additionally, the classroom teacher, especially in the elementary school years, may exercise significant influence over peer interactions and formation of friendships (Bagwell & Schmidt, 2011).

Social-cognitive interventions form a different mode of friendship intervention. They are characterized by emphasis on the underlying cognitive processes that mediate successful peer relations, such as conception of other people and oneself, conception of relations between people, and conception of social groups and roles (Malik & Furman, 1993). In such programs skills are taught such as perspective taking, social problem solving, conflict management, and understanding of social goals. Programs such as Coping Power have been successful with aggressive and disruptive school-aged boys, as they helped decrease aggression, increase task persistence, and improve perceived social competence; positive gains were maintained over a 3-year period (Lochman & Wells, 2002).

Peer-pairing interventions are at the level of the dyad, where friendships often occur. An advantage of this type of intervention is the emphasis on ongoing close relationship rather than developing a well of skills and knowledge about relationships in general. In general, peer pairing approaches have been found to be more effective when

the pairs receive coaching by an adult vs. the experience of only playing with socially competent peers (Bierman & Furman, 1984). However, a substantial drawback in establishing the effectiveness of peer-pairing interventions is the lack of systematic empirical evaluation.

A program that has been developed for children with ADHD specifically is the Buddy System intervention, which is an intense 8-week summer treatment program (Hoza, Mrug, Pelham, Greiner, & Gnagy, 2003). The buddy system uses a dyadic approach where teachers and counsellors implement a behaviour modification system, social skills training, and academic remediation, which are reinforced by a token economy system and daily awards. Parents are encouraged to participate by hosting the buddies for play dates outside the camp. The effectiveness of this intervention was closely related to parental involvement, as better outcomes were predicted by the number of times parents arranged a meeting of the dyad. However, although results are promising, further research is needed to evaluate the buddy system approach (Bagwell & Schmidt, 2011).

The current state of peer relationships and friendship interventions suggests that there still is no set of “best practices” that has been proved to be successful on a large scale. Overall, the programs with strong empirical evaluation do not focus on friendship, which leaves unclear to what extent they actually promote and influence friendships. The programs that target friendships typically lack rigorous research and therefore their effectiveness is also unclear. Furthermore, the programs promoting friendship, and specifically friendship in children with ADHD, do not seem to focus on specific

constellations of behaviours children with ADHD exhibit when interacting with friends. Our research may serve to inform and facilitate better targeted interventions.

Although it is recommended that parent involvement is included in the intervention efforts (Bagwell & Schmidt, 2011), this may prove to be complicated. Our research indicates that children with ADHD come from single-parent households more often than most of their peers, which is a clear indication of parenting strain.

Furthermore, ADHD is often associated with elevated parenting stress (Johnson & Reader, 2002; Theule, Wiener, Tannock, & Jenkins, 2013), which can be defined as dissonance between the parent's perceived abilities to parent and the demand that the child and family situation imposes on them (Deater-Deckard, 2004). Elevated levels of parenting stress affect the parent-child relationship and negatively affect parenting practices (Morgan, Robinson, & Aldridge, 2002). Maternal depression has also been associated with parenting stress in this population (van der Oord, Prins, Oosterlaan, & Emmelkamp, 2006) and both ADHD types - Inattentive and Hyperactive were equally associated with family stress, although Inattentive symptoms were associated with less family disruption. However, it is noteworthy that parenting stress is equally associated with ADHD as it is with other child clinical disorders, such as learning disabilities, autism, developmental delays, and internalizing disorders (Theule et al., 2013).

Research also suggests that ADHD is familial (Biederman, Faraone, Keenan, Knee, & Tsuang, 1990; Stawicki, Nigg, & von Eye, 2004) and twin studies imply substantial heritability for the behavioural domains of the disorder (Willcutt, Pennington, & DeFries, 2000). Neuropsychological vulnerabilities in executive functioning and impulse regulation were found in parents and siblings of children with ADHD (Nigg,

Blaskey, Stawicki, & Sachek, 2004). These results suggest that parents of children with ADHD may have various difficulties themselves which further exacerbate their ability to guide and support their children in finding and keeping good friends.

These research data need to be incorporated by the intervention program developers. Children with ADHD have behavioural and affective interactions with their friends that differ from the friendship interactions of their typically developing peers. The vulnerabilities of the parents of children with ADHD and the specifics of their family dynamics also need to be taken into account. This will hopefully make possible the construction of programs that are better tailored to assist parenting efforts and to promote friendships in children with ADHD.

Research provides ample evidence that although inclusion of parents in friendship promotion programs is of great importance for the success of the intervention, parental effort will probably need to be specifically supported by the intervention programs instead of simply expected. In turn, this leads to the question: who else needs to be involved in helping youth with ADHD find and keep friends? Since youth spend a great amount of time at school, perhaps their peers and teachers may be of great assistance in establishing a more nourishing and development-promoting environment. However, this question also needs to be considered from an ethical standpoint. Not all children express equal interest and motivation in having friends (Asher & McDonald, 2004), which implies that interventions need to be voluntary and not imposed. If peers are included in an intervention, it needs to be designed in a manner that would not threaten their well-being or over-expose them to behavioural influences that they would naturally avoid by rejecting a classmate who is disruptive and socially ineffective.

The broad question of generalizability of intervention gains is pertinent for friendship interventions with children with ADHD as well. Research on friendship programs and generalizability of positive outcomes is scarce (Bagwell & Schmidt, 2011). This certainly signifies a demand for greater scientific exploration, but also directs attention to other fields, such as neuropsychology and rehabilitation psychology, which discuss the same issue. Specialists who work with individuals with traumatic brain injury focus rehabilitative efforts on cognitive, social, and behavioural dimensions of the disability (Ylvisaker, Turkstra, & Coelho, 2005). However, research often finds pre-existing behavioural problems in children with traumatic brain injury (Ylvisaker, Jacobs, & Feeney, 2003). This, suggests that the populations with traumatic brain injury and ADHD may be related, which renders intervention results transferable to ADHD and friendship interventions. However, more and specifically targeted research is needed in order to establish that.

Typical interventions for individuals with traumatic brain injury are applied behavioural analysis and positive behaviour supports. Applied behavioural analysis is based on the principle that behaviours increase or decrease in frequency as a result of positive and negative reinforcement. Positive behaviour support is governed by the principle that behaviour is best managed and modified by organizing direct and remote antecedents so that individuals behave successfully, which allows them to build up a repertoire of practices adequate to their social environment. Both strategies have been found to be successful in managing behavioural and social problems in children with traumatic brain injury (Alderman, 2003; Feeney & Ylvisaker, 2003; Ylvisaker & Feeney, 1998).

In sum, although there is a great number of interventions targeting social difficulties, a precious few are aimed at improving friendship interactions. There are promising results that indicate the importance of social partners such as parents, teachers, and peers in the establishment and promotion of friendships, but research is needed to clarify the role and availability of these partners. Interventions from related fields such as neuropsychology and rehabilitation are promising and need to be considered with the ADHD population.

Strengths, Limitations, and Future Directions

One of the major advantages of this study is that it centres on an understudied area of research – the naturally occurring friendships of children and young adolescents with ADHD. Furthermore, the present study is a longitudinal follow-up on the friendships of children and adolescents with ADHD, which is a vastly unexplored area. Another advantage is that through this study we try to identify everyday social interactions in a clinical population of children with ADHD, thus contributing to the literature that has primarily used school samples to assess these interactions. The study employs multiple measures and utilizes several data sources for data collection. This increases the validity of the gathered information and decreases the self-report bias that is characteristic of individuals with ADHD. Additionally, we take into account not only the reports and observations related to participants with ADHD but also their friends without ADHD. This enriches the data and addresses a limitation of the literature that fails to take into account information about the friendship obtained from the friends of the participants with ADHD.

However, the current study has several limitations. The participants in the study are divided into two groups - clinical and non-clinical (comparison) groups. This represents the population in a dichotomous way (i.e., definitive presence or absence of ADHD-related symptoms). However, the literature suggests that ADHD-related symptoms are distributed along a continuum. Therefore, future studies should attempt to recruit participants without a diagnosis of ADHD but who have been identified as having symptoms that are somewhat consistent with the diagnosis.

Due to the sampling, the study also has limited generalizability. The results are valid for the friendships that children and young adolescents with ADHD develop. However, they are not directly applicable to the friendships of children with difficulties only somewhat related to ADHD. The age of the participants (8 -14 years old) might also present as an issue. Such an age range is consistent with what has been studied within the literature, but nonetheless does not form a homogeneous sample. Finally, the nature of ADHD and the clinical sampling result in an uneven gender representation. We had a very small number of females to present in our samples, which did not permit for a sufficient gender-specific differentiation of friendship patterns.

The results were analyzed according to common statistical practices in the field as reported in peer-reviewed journals. We used mainly parametric tests such as MANOVA to analyze the data. However some of the comparisons were underpowered and there were violations to the assumptions of certain tests. Consideration was given to a different statistical approach such as non-parametric tests and mixed effects regression modeling. However, none of the standard non-parametric statistics such as the Kruskal-Wallis test, its extension the Scheirer-Ray-Hare test, or the Friedman's test could accommodate

multiple dependent variables, to account for between-group differences, and include the two time points of measurement that characterized our dataset. The mixed effects regression modeling presented us with limited results in comparison to MANOVA, because our data had only two time points. Therefore, in order to preserve the richness of the data in our results, we used mainly parametric tests reporting all violations to assumptions.

Future research in this area needs to be more natural-environment oriented, preferably with longitudinal followup. Our participants with ADHD were more intense in their interactions with their friends, more dominant, and less considerate of intimacy and catering to the interpersonal needs of their friend. Since these findings were made in a research setting through interactive tasks, they only approximate, but cannot fully represent the natural environment. The natural environment poses unique challenges such as less structure and guidance and is the actual place where friendships begin and develop. Therefore, natural-environment research may be an important venue for acquiring further information about development of friendships of children and youth with ADHD.

Furthermore, longitudinal research in regards to maintenance of friendships is needed. Friendships are long-term relationships that develop and evolve with time and with social experience and experience relating with the friend. Individuals with ADHD have unique interpersonal needs, some of which are placed upon the friend. Consequently, a prolonged intimate interaction may be taxing. More research examining the long term engagement of the friends and their meeting of one another's mutual needs within the relationship is needed.

Our research of friendship behaviours of children with ADHD who have stable friendships has shed some light on typical patterns of interaction of the child with ADHD with his or her friend. Future research including a sample of children with ADHD who fail to establish friendships is needed to identify these or similar patterns. Such data will be valuable in identifying a continuum of behavioural and interpersonal features that support the development of friendships in individuals with ADHD.

Further research is also needed to investigate how the clinical subtypes of ADHD affect longstanding intimate relationships such as friendships. Additionally, we need to better understand the often co-morbid psychological issues such as anxiety, depression, and oppositional defiant features and how they contribute to the complexity of interaction within the friendly dyad. Individuals with ADHD have difficulties understanding emotions and relating empathically to their friends. The compensatory mechanisms that develop within their friendships to make up for the emotion recognition difficulties and decreased empathic consideration remain to be examined in future research.

Different measures of friendship quality need to be compared and a gold standard needs to be established in this area. Furthermore, since these instruments explore a highly sensitive and very intimate matter, such as close friendship, there needs to be correction for social desirability. Such correction may help in distinguishing natural patterns of friendship development from variability in answering the questionnaire at different stages of the study.

References

- Aboud, F. E., & Janani, S. (2007). Friendship and identity in a language-integrated school. *International Journal of Behavioral Development, 31*, 445–453.
- Aboud, F. E., & Mendelson, M. J. (1996). Determinants of friendship selection and quality: Developmental perspectives. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence*, (pp. 87–112). New York: Cambridge University Press.
- Aboud, F. E., Mendelson, M. J., & Purdy, K. T. (2003). Cross-race relations and friendship quality. *International Journal of Behavioral Development, 27*, 165-173.
- Adams, R. G. & Blieszner, R. (1998). Structural predictors of problematic friendships in later life. *Personal Relationships, 5*, 439-447.
- Alderman, N. (2003). Contemporary approaches to the management of irritability and aggression following traumatic brain injury. *Neuropsychological Rehabilitation, 13*, 211–240.
- Altman, I. & Taylor, D. (1973). *Social penetration: The development of interpersonal relationships*. New York: Holt.
- Altman, I., & Taylor, D. (1987). Communication in interpersonal relationships: Social Penetration Theory. In M. E. Roloff and G. R. Miller (Eds.), *Interpersonal processes: New directions in communication research*, (pp. 172-187). Thousand Oaks, CA: Sage.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Arlington, VA: American Psychiatric Publishing.

- Antshel, K., Macias, M., & Barkley, R. A. (2009). The child with attention deficit hyperactivity disorder. In R.B. David, J. B. Bodensteiner, D. E. Mandelbaum, & B. J. Olson (Eds.), *Child Pediatric Neurology*. (pp. 525-540). New York: Demos Medical Publishing.
- Argyle, M., Henderson, M., Bond, M., Iizuka, Y., & Contarello, A. (1986). Cross-cultural variations in relationship rules. *International Journal of Psychology*, *21*, 287-315.
- Arndorfer, C. L. & Stormshak, E. A. (2008). Same-sex versus other-sex best friendships in early adolescence: Longitudinal predictors of antisocial behavior throughout adolescence. *Journal of Youth and Adolescence*, *37*, 1059-1070.
- Arranz Freijo, E. B., Oliva, A., Olabarrieta, F., Martín, J. L., Manzano, A. & Richards, P. M. M. (2006). Quality of family context or sibling status? Influences on cognitive development. *Early Child Development and Care*, *178*(2), 1-12.
- Asher, S. R., & Williams, G. A. (1987). Helping children without friends in home and school contexts. In *Children's social development: Information for teachers and parents* (pp. 1–26). Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education.
- Asher, S. R., Parker, J. G., & Walker, D. L. (1996). Distinguishing friendship from acceptance: Implications for intervention and assessment. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 366– 405). New York: Cambridge University Press.
- Bagwell, C., Molina, B., Pelham, W. & Hoza, B. (2001). Attention-Deficit Hyperactivity Disorders and problems in peer relations: Predictions from childhood to

adolescence. *Journal of American Academy of Child and Adolescent Psychiatry*, 40, 1285–1292.

Bagwell, C.L. & Schmidt, M.E. (2011). *Friendships in childhood and adolescence*. New York: Guilford Press.

Barkley, R. (2004). Adolescents with Attention-Deficit/Hyperactivity Disorder: An Overview of Empirically Based Treatments. *Journal of Psychiatric Practice*, 10, 39-56.

Barkley, R. A. & Edwards, G. (1998). Attention deficit hyperactivity disorder. In R. Halgin & S. K. Whitbourne (Eds.), *A casebook in abnormal psychology: From the files of experts*. (pp. 212-234). New York: Oxford University Press.

Barkley, R. A. (1997). Behavioral inhibition, sustained attention, and executive functions: Constructing a unifying theory of ADHD. *Psychological Bulletin*, 121, 65–94.

Barkley, R. A. (2006). *Attention Deficit Hyperactivity Disorder: A handbook for diagnosis and treatment*, New York: Guilford Press.

Barkley, R. A. (1997a). Attention deficit/Hyperactivity disorder, self regulation, and time: Toward a more comprehensive theory. *Developmental and Behavioral Pediatrics*, 18, 271-279.

Barkley, R. A., Fischer, M., Smallish, L., & Fletcher, K. (2002). The persistence of attention deficit hyperactivity disorder into adulthood as a function of reporting source and definition of disorder. *Journal of Abnormal Psychology*, 111, 279–89.

Beelmann, A., Pfingsten, U., & Losel, F. (1994). Effects of training social competence in children: A meta-analysis of recent evaluation studies. *Journal of Clinical Child Psychology*, 23, 260– 271.

- Bell, R. A. (1985). Conversational involvement and loneliness. *Communication Monographs*, 52, 218–235.
- Belsky, J., & Cassidy, J. (1995). Attachment: Theory and evidence. In M. Rutter, D. Hay, & S. Baron-Cohen (Eds.), *Developmental principles and clinical issues in psychology and psychiatry*. Oxford, England: Blackwell.
- Berndt, T. J. (1981). Age changes and changes over time in prosocial intentions and behavior between friends. *Developmental Psychology*, 17, 408–416.
- Berndt, T. J. (1986). Children's comments about their friendships. In M. Perlmutter (Ed.), *Cognitive perspectives on children's social and behavioural development*. Hillsdale, NJ: Lawrence Erlbaum.
- Berndt, T. J. (1996). Exploring the effects of friendship quality on social development. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 19–40). New York: Cambridge Press.
- Berndt, T. J. (1999). Friends' influence on students' adjustment to school. *Educational Psychology*, 34, 15–28.
- Berndt, T. J. (2002). Friendship quality and social development. *Current Directions in Psychological Science*, 11, 7–10.
- Berndt, T. J., & Perry, T. B. (1986). Children's perceptions of friendships as supportive relationships. *Developmental Psychology*, 82, 319–326.
- Berndt, T. J., Hawkins, J. A., & Hoyle, S. G. (1986). Changes in friendship during a school year: Effects on children's and adolescents' impressions of friendships and sharing with friends. *Child Development*, 57, 1284–1297.

- Berscheid, E., & Reis, H. T. (1998). Attraction and close relationships. In S. Fiske, D. Gilbert, & G. Lindzey (Eds.), *The handbook of social psychology* (4th Ed.). New York: McGraw Hill.
- Biederman, J., Faraone, S. V., Keenan, K., Knee, D., & Tsuang, M. T. (1990). Family-genetic and psychosocial risk factors in *DSM-III* attention deficit disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 29, 526–533.
- Biederman, J., Faraone, S. V., Taylor, A., Sienna, M., Williamson, S., & Fine, C. (1998). Diagnostic continuity between child and adolescent ADHD: Findings from a longitudinal clinical sample. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37, 305–313.
- Biederman, J., Mick, E., & Faraone, S. V. (2000). Age dependent decline of symptoms of Attention Deficit/ Hyperactivity Disorder: Impact of remission definition and symptom type. *American Journal of Psychiatry*, 157, 816–818.
- Bierman, K. L., & Furman, W. (1984). The effects of social skills training and peer involvement on the social adjustment of preadolescents. *Child Development*, 55, 151–162.
- Bigelow, B., & La Gaipa, J. (1975). Children's written descriptions of friendship: A multidimensional analysis. *Developmental Psychology*, 11, 857-858.
- Blachman, D. R., & Hinshaw, S. P. (2002). Patterns of friendship among girls with and without attention-deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology*, 30, 625–640.

- Blair, R. J. R. (2001). Neurocognitive models of aggression, the antisocial personality disorders, and psychopathy. *Journal of Neurological Neurosurgery and Psychiatry* 71, 727–731.
- Blieszner, R. & Roberto, K. A. (2004). Friendship across the life span: Reciprocity in individual and relationship development. In Lang, F. R. & Fingerman, K. L. (Eds.), *Growing together: Personal relationships across the life span* (pp. 159-182). New York, USA: Cambridge University Press.
- Bowker, A. (2004). Predicting friendship stability during early adolescence. *Journal of Early Adolescence*, 24, 85–112.
- Bowker, J. C., Thomas, K. K., Norman, K. E., & Spencer, S. V. (2011). Mutual best friendship involvement, best friends' rejection sensitivity, and psychological maladaptation. *Journal of youth and adolescence*, 40(5), 545-555.
- Braaten, E. B., & Rosén, L. A. (2000). Self-regulation of affect in attention Deficit–Hyperactivity disorder (ADHD) and non-ADHD boys: Differences in empathic responding. *Journal of Consulting and Clinical Psychology*, 68(2), 313-321.
- Branje, S. J. T., Frijns, T., Finkenauer, C., Engels, R., & Meeus, W. (2007). You are my best friend: Commitment and stability in adolescents' same-sex friendships. *Personal Relationships*, 14(4), 587-603.
- Brendgen, M., Markiewicz, D., Doyle, A. B., & Bukowski, W. M. (2001). The relations between friendship quality, ranked-friendship preference, and adolescents' behavior with their friends. *Merrill-Palmer Quarterly*, 47, 395–415.
- Bugental, D. B. (1992). Affective and cognitive processes within threat-oriented family systems. In I. E. Sigel, A. V. McGillicuddy-DeLisi, & J. J. Goodnow (Eds.),

Parental belief systems: The psychological consequences for children (pp. 219–248).

- Buhrmester, D. (1990a). Intimacy of friendship, interpersonal competence, and adjustment in preadolescence and adolescence. *Child Development, 61*, 1101–1111.
- Buhrmester, D. (1990b). Perceptions of sibling relationships during middle childhood and adolescence. *Child Development, 61*, 1387-1398.
- Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology, 55*, 991-1008.
- Bui, K. T., Peplau, L. A., & Hill, C. T. (1996). Testing the Rusbult model of relationship commitment and stability in a 15-year study of heterosexual couples. *Personality and Social Psychology Bulletin, 22*, 1244–1257.
- Bukowski, W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement, and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child development* (pp.15–45). New York: Wiley.
- Bukowski, W. M., Motzoi, C., & Meyer F. (2009). Friendship as process, function, and outcome. In: Rubin K. H., Bukowski W. M., & Laursen B. (Eds.) *Handbook of peer interactions, relationships, and groups*. New York: Guilford Press, 217–231.
- Bukowski, W. M., Sippola, L. K., & Boivin, M. (1995, March). Friendship protects “at risk” children from victimization from peers. In J. M. Price (Chair), *The role of friendship in children’s developmental risk and resilience. Symposium at the*

biennial meeting of the Society for Research in Child Development, Indianapolis, IN.

- Bukowski, W. M., Newcomb, A. F., & Hoza, B. (1987). Friendship conceptions among early adolescents: A longitudinal study of stability and change. *Journal of Early Adolescence*, 7, 143-152.
- Burk, W. J. & Laursen, B. (2005). Adolescent perceptions of friendship and their associations with individual adjustment. *International Journal of Behavioral Development*, 29, 156– 164.
- Burleson, B. R., Metts, M. W. & Kirch, M. W. (2000). Communication in close relationships. In C. Hendrick & S.S. Hendrick (Eds.), *Close relationships: A sourcebook* (pp. 244–258), Thousand Oaks, CA: Sage.
- Burns, G. L., Walsh, J. A., Patterson, D. R., Holte, C. S., Sommers-Flanagan, R., & Parker, C. M. (2000). Attention deficit and disruptive behavior disorder symptoms. Usefulness of a frequency count rating procedure to measure these symptoms. *European Journal of Psychological Assessment*, 17, 25–35.
- Cairns, R. B., Cairns, B. D., Neckerman, H. J., Gest, S. D., & Garipey, J. (1988). Social networks and aggressive behavior: Peer support or peer rejection? *Developmental Psychology*, 24, 815–823.
- Cairns, R. B., Leung, M. C., Buchanan, L., & Cairns, B. D. (1995). Friendships and social networks in childhood and adolescence: Fluidity, reliability, and interrelations. *Child Development*, 66, 1330–1345.

- Canary, D. J., & Spitzberg, B. H. (1990). Attribution biases and associations between conflict strategies and competence outcomes. *Communication Monographs*, 57, 139–151.
- Canary, D. J., & Stafford, L. (1994). Maintaining relationships through strategic and routine interaction. In: D. J. Canary & L. Stafford (Eds.), *Communication and relational maintenance*, (pp. 3-22). San Diego, CA: Academic Press.
- Canary, D., Stafford, L., Hause, K., & Wallace, I. (1993). An inductive analysis of relational maintenance strategies: A comparison among young lovers, relatives, friends, and others. *Communication Research Reports*, 10, 5-14.
- Cantin, S., & Boivin, M. (2004). Change and stability in children's social network and self-perceptions during transition from elementary to junior high school. *International Journal of Behavioral Development*, 28, 561–570.
- Carson, J. L. & Parke, R. D. (1996). Reciprocal negative affect in parent-child interactions and children's peer competency, *Child Development*, 67(6), 2217–2226.
- Cauce, A. M., Mason, C., Gonzales, N., & Hiraga, Y. (1996). Social support during adolescence: Methodological and theoretical considerations. In K. Hurrelmann & S. Hamilton (Eds.), *Social problems and social contexts in adolescence: Perspectives across boundaries* (pp. 131–151). Hawthorne, NY, US: Aldine de Gruyter.
- Chan, A., & Poulin, F. (2007). Monthly changes in the composition of friendship networks in early adolescence. *Merrill-Palmer Quarterly*, 53, 578–602.

- Chase-Lansdale, P. L., Gordon, R. A., Brooks-Gunn, J., & Klebanov, P. K. (1997). Neighborhood and family influences on the intellectual and behavioral competence of preschool and early school-age children. *Neighborhood poverty, 1*, 79-118.
- Chronis, A., Pelham, W., Baumann, B., Kipp, H., Jones, H., & Rathouz, P. (2007). Maternal depression and early positive parenting predict future conduct problems in young children with Attention-Deficit/Hyperactivity Disorder. *Developmental Psychology* 43(1), 70-82.
- Ciairano, S., Rabaglietti, E., Roggero, A., Bonino, S., & Beyers, W. (2007). Patterns of adolescent friendships, psychological adjustment and antisocial behavior: The moderating role of family stress and friendship reciprocity. *International Journal of Behavioral Development*, 31(6), 539-548.
- Cicchetti, D., Rogosch, F. A., Lynch, M., & Holt, K. D. (1993). Resilience in maltreated children: Processes leading to adaptive outcome. *Development and Psychopathology*, 5(04), 629-647.
- Cimpian, A., Arce, H. M. C., Markman, E. M., & Dweck, C. S. (2007). Subtle linguistic cues affect children's motivation. *Psychological Science*, 18(4), 314-316.
- Claes, M. (2003). *L'univers social des adolescents*. Montréal: Les Presses de l'Université de Montréal.
- Cole, P.M., Zahn-Waxler, C., & Smith, K. D. (1994). Expressive control during a disappointment: Variations related to preschoolers' behavior problems. *Developmental Psychology*, 30, 835-846.

- Collins, W. A., Madsen, S. D., & Susman-Stillman, A. (2013). Parenting during middle childhood. *Handbook of Parenting: Volume I: Children and Parenting*, 73.
- Colwell, M. J., Mize, J., & Pettit, G. S. (2002). Contextual determinants of mothers' interventions in young children's peer interactions. *Developmental Psychology*, 38, 492–502.
- Conners' Rating Scales-Revised Technical Manual*. (2000). North Tonawanda, New York: Multi Health Systems.
- Conners, C. K., Sitarenios, G., & Parker, J. D. A. (1998a). Revision and restandardization of the Conners' Teacher Rating Scale (CTRS-R): Factor structure, reliability, and criterion validity. *Journal of Abnormal Child Psychology*, 26, 279-291.
- Conners, C. K., Sitarenios, G., & Parker, J. D. A. (1998b). The revised Conners' Parent Rating Scale (CPRS-R): Factor structure, reliability, and criterion validity. *Journal of Abnormal Child Psychology*, 26, 257-268.
- Cook, J. L., & Cook, G. (2005). *Child development: Principles and perspectives*. New York: Pearson.
- Cooper, J. E., Brooks, A. J., LeCroy, C. W., & Ashford, J. B. (1994). Adolescent friendship patterns: mediators and risky behaviours. Paper presented at the Society for Research in Adolescence, San Diego, California, February.
- Cooper, L. O., & Buchanan, T. (2010). Listening competency on campus: A psychometric analysis of student listening. *The International Journal of Listening*, 24(3), 141-163.

- Cowen, E. L., Pederson, A., Babigian, H., Izzo, L. D., & Trost, M. A. (1973). Long-term follow-up of early detected vulnerable children. *Journal of Consulting & Clinical Psychology, 41*, 438–446.
- Crosnoe, R. (2000). Friendships in childhood and adolescence: The life course and new directions. *Social Psychology Quarterly, 63*, 377-391.
- Crosnoe, R., & Needham, B. (2004). Holism, contextual variability, and the study of friendships in adolescent development. *Child Development, 75*, 264–279.
- Cupach, W. R., Canary, D. J., & Spitzberg, B. H. (2009). *Competence in interpersonal conflict*. Waveland Press.
- Dane, A. V. (2001). A multimethod examination of the friendships of overly aggressive and relationally aggressive children. *Dissertation Abstracts International Section A: Humanities & Social Sciences, 62*(4-A). (UMI No. NQ58988)
- De Goede, I. H., Branje, S. J., & Meeus, W. H. (2009). Developmental changes and gender differences in adolescents' perceptions of friendships. *Journal of Adolescence, 32*, 1105-1123.
- Deater-Deckard, K. (2004). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice, 5*, 314–332.
- Degirmencioglu, S. M., Urberg, K. A., Tolson, J. M., & Richard, P. (1998). Adolescent friendship networks: Continuity and change over the school year. *Merrill-Palmer Quarterly, 44*, 313–337.
- Demir, M., & Urberg, K. A. (2004). Friendship and adjustment among adolescents. *Journal of Experimental Child Psychology, 99*, 68– 82.

- Denham, S. A., & Holt, R. W. (1993). Preschoolers' likability as cause or consequence of their social behavior. *Developmental Psychology, 29*, 271-275.
- Denham, S. A., McKinley, M., Couchoud, E., & Holt, R. (1990). Emotional and behavioral predictors of preschool peer ratings. *Child Development, 61*, 1145–1152.
- Denham, S. A. (2007). Dealing with feelings: How children negotiate the worlds of emotions and social relationships. *Cognitions, Brain, Behaviour, 11*, 1–48.
- Dinida, K. (2000). Relational maintenance. In C. Hendrick & S. S. Hendrick (Eds.), *Close relationships: A sourcebook* (pp. 286-299). Thousand Oaks, CA: Sage.
- Dishion, T. J., Andrews, D. W., & Crosby, L. (1995). Antisocial boys and their friends in early adolescence: Relationship characteristics, quality, and interactional process. *Child Development, 66*(1), 139-151.
- Dishion, T. J., Andrews, D. W., & Crosby, L. (1995). Antisocial boys and their friends in early adolescence: Relationship characteristics, quality, and interactional process. *Child Development, 66*, 139-151.
- Dishion, T. J., Crosby, L., Rusby, J. C., Shane, D., Patterson, G. R., & Baker, J. (1989). *Peer process code: Multidimensional system for observing adolescent peer interaction*. Unpublished manuscript, Oregon Social Learning Center.
- Dishion, T. J., Duncan, T. E., Eddy, J. M., Fagot, B. I., & Fetrow, R. (1994). The world of parents and peers: Coercive exchanges and children's social adaptation. *Social Development, 3*, 255–268.
- Dishion, T. J., Patterson, G. R., & Griesler, P. C. (1994). Peer adaptations in the development of antisocial behavior: A confluence model. In L. R. Huesmann

(Ed.), *Aggressive behavior: Current perspectives* (pp. 61–95). New York: Plenum Press.

Dodge, K. A. (1983). Behavioral antecedents of peer social status. *Child Development*, 54, 1386–1399.

Dodge, K. A., & Frame, C. L. (1982). Social cognitive biases and deficits in aggressive boys. *Child Development*, 53, 620–635.

Dodge, K.A. (1991). Emotion and social information processing. In Garber, J., Dodge, K.A., (Eds.) *The development of emotion regulation and dysregulation*. Cambridge: Cambridge University Press. p 159–181.

Donelson, E. & Gullahorn, J. E. (1977). *Women: A psychological perspective*. New York: Wiley.

Dore, J. (1977). "Oh them sheriff": A pragmatic analysis of children's responses to questions. In S. Ervin-Tripp & C. Mitchell-Kernan (Eds.), *Child discourse*, (pp. 139-163). New York: Wiley.

Douglas, V. I., & Parry, P. A. (1994). Effects of reward and non-reward on attention and frustration in attention deficit disorder. *Journal of Abnormal Child Psychology*, 22, 281-302.

Downs, A., Smith, T., 2004. Emotional understanding, cooperation, and social behavior in high-functioning children with autism. *Journal of Autism and Developmental Disorders*, 34, 625–635.

Duck, S. W. (1994). Steady as s(he) goes: Relational maintenance as a shared meaning system. In D. Canary, & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 45-60). San Diego: Academic Press.

- Dunn, J. (2004). Understanding children's family worlds: Family transitions and children's outcome. *Merrill-Palmer Quarterly*, 50(3), 224-235.
- Dwyer, K. M., Fredstrom, B. K., Rubin, K. H. Booth-LaForce, C., Rose-Krasnor, L., & Burgess, K. B. (2010). Attachment, social information processing, and friendship quality of early adolescent girls and boys. *Journal of Social and Personal Relationships*, 27, 91-116.
- Eccles, J. S., Lord, S., & Buchanan, C. (1996). School transitions in early adolescence: What are we doing to our young people? In J. A. Graber, J. Brooks-Gunn, & A. C. Petersen (Eds.), *Transitions through adolescence: Interpersonal domains and context* (pp. 251–284). Hillsdale, NJ, England: Lawrence Erlbaum Associates.
- Eccles, J., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: Committee on Community-Level Programs for Youth.
- Eccles, J., & Roeser, R. (2003). Schools as developmental contexts. In G. Adams & M. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 129–148). Malden, MA: Blackwell Publishers.
- Epstein, J. L. (1983). Selection of friends in differently organized schools and classrooms. In J. L. Epstein & N. Karweit (Eds.), *Friends in school* (pp. 73-92). New York: Academic Press.
- Epstein, J. L. (1989). The selection of friends: Changes across the grades and in different school environments. In Berndt, T.J. & Ladd, G. W. (Eds.), *Peer relationships in child development*. New York: Wiley, 158-87.

- Erath, S. A., Flanagan, K. S., Bierman, K. L., & Tu, K. M. (2010). Friendships moderate psychosocial maladjustment in socially anxious early adolescents. *Journal of Applied Developmental Psychology, 31*(1), 15-26.
- Erhardt, D., & Hinshaw, S. P. (1994). Initial sociometric impressions of attention-deficit hyperactivity disorder and comparison boys: predictions from social behaviors and from nonbehavioral variables. *Journal of Consulting and Clinical Psychology, 62*, 833-842.
- Ervin-Tripp, S. (1977). Wait for me, Roller Skate! In S. Ervin-Tripp & C. Mitchell-Kernan (Eds.) *Child discourse* (pp. 65-188). New York: Academic Press.
- Erwin, P. (2013). *Friendship in childhood and adolescence*. Routledge.
- Feeney, T.J. & Ylvisaker, M. (2003). Context-sensitive behavioural supports for young children with TBI: short term effects and long-term outcome. *Journal of Head Trauma Rehabilitation, 18*, 33-51.
- Fehr, B. (1996). *Friendship Processes*. Thousand Oaks, CA: Sage.
- Fehr, B., & Russell, J. A. (1991). The concept of love viewed from a prototype perspective. *Journal of Personality and Social Psychology, 60*, 425-438.
- Feshbach, N. (1978). Studies of empathic behavior in children. In B. A. Maher (Ed.), *Experimental personality research* (Vol. 8, pp. 1-47). New York: Academic Press.
- Fonzi, S., Schneider, B. H., Tani, F., & Tomada, G. (1997). Predicting children's friendship status from their dyadic interaction in structured situations of potential conflict. *Child Development, 68*, 496-506.

- Fox, C. L., & Boulton, M. J. (2006). Friendship as a moderator of the relationship between social skills problems and peer victimization. *Aggressive Behavior, 32*, 110–121.
- Frankel, F. (2005). Parent-assisted children's friendship training. In E. D. Hibbs & P. S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically based approaches* (pp. 693–715). Washington, DC: American Psychological Association.
- Furman, W. & Bierman, K. L. (1984). Children's conception of friendship: A multimethod study of developmental changes. *Developmental Psychology, 20*, 925-931.
- Furman, W. & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development, 63*, 103–115.
- Furman, W. (1996). The measurement of friendship perceptions. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *Company they keep: Friendship in childhood and adolescence*, (pp. 41-65). New York: Cambridge University Press.
- Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child development, 63*(1), 103-115.
- Furman, W., & Robbins, P. (1985). What's the point? Issues in the selection of treatment objectives. In: B. H. Schneider, K. H. Rubin, & J. E. Ledingham (Eds.). *Children's peer relations: Issues in assessment and intervention* (pp. 23-45). New York: Springer-Verlag.

- Furman, W. (1982). Children's friendships. In: Field, T., Finley, G., Huston, A., Quay, H. and Troll, L., (Eds.) *Review of human development*, (pp. 78-85). New York: John Wiley.
- Geisthardt, C. L., Brotherson, M. J., & Cook, C. C. (2002). Friendships of children with disabilities in the home environment. *Education and Training in Mental Retardation and Developmental Disabilities*, 37(3), 235-252.
- George, T. P., & Hartmann, D. P. (1996). Friendship networks of unpopular, average, and popular children. *Child Development*, 67(5), 2301-2316.
- Gertner, B., Rice, M., & Hadley, P. (1994). Influence of communicative competence on peer preferences in a preschool classroom. *Journal of Speech and Hearing Research*, 37(4), 913-923.
- Glass, K., Flory, K., & Hankin, B. (2012). Symptoms of ADHD and close friendships in adolescence. *Journal of Attention Disorders*, 16(5), 406-417.
- Granic, I. & Patterson, G. R. (2006). Toward a comprehensive model of antisocial development: a dynamic systems approach. *Psychological Review*, 113, 101–131.
- Granic, I., & Lamey, A. V. (2002). Combining dynamic systems and multivariate analyses to compare the mother-child interactions of externalizing subtypes. *Journal of Abnormal Child Psychology*, 30, 265–283.
- Greco, L. A., & Morris, T. L. (2005). Factors influencing the link between social anxiety and peer acceptance: Contributions of social skills and close friendships during middle childhood. *Behavior Therapy*, 36, 197– 205.

- Green, S. B., & Salkind, N. J. (2011). *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data* (6th Ed.). Upper Saddle River, NJ: Prentice Hall.
- Greenberg, M. T. (2006). Promoting resilience in children and youth: Preventive interventions and their interface with neuroscience. *Annals of the New York Academy of Sciences, 1094*, 139–150.
- Greenberg, M. T., & Kusche, C. A. (1993). *Promoting social and emotional development in deaf children: The PATHS Project*. Seattle: University of Washington Press.
- Greenberg, M. T., Domitrovich, C., & Bumbarger, B. (2001). The prevention of mental disorders in school-aged children: Current state of the field. *Prevention & treatment, 4*(1), 1a.
- Greenberg, M. T., Kusché, C. A., & Speltz, M. (1991). Emotional regulation, self-control, and psychopathology: The role of relationships in early childhood. In *Internalizing and externalizing expressions of dysfunction: Rochester symposium on developmental psychopathology* (Vol. 2, pp. 21-55).
- Greenspan, S. I. (2001). The affect diathesis hypothesis: The role of emotions in the core deficit in autism and in the development of intelligence and social skills. *Journal of Developmental and Learning Disorders, 5*(1), 1-45.
- Grenell, M. M., Glass, C. R., & Katz, K. S. (1987). Hyperactive children and peer interaction: Knowledge and performance of social skills. *Journal of Abnormal Child Psychology, 15*, 1-13.
- Grice, H. P. (1975). Logic and conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics: Vol. 3* (pp. 41-58). New York, NY: Academic Press.

- Grotzinger, J. K., & Crick, N. R. (1996). Relational aggression, overt aggression, and friendship. *Child Development, 67*, 2328-2338.
- Guevremont, D. C., & Dumas, M. C. (1994). Peer relationship problems and disruptive behaviour disorders. *Journal of Emotional and Behavioural Disorders, 2*, 164-172.
- Guralnick M.J. (1990). Peer interactions and the development of handicapped children's social and communicative competence. In Foot, H., Morgan, M., Shute, R., editors. *Children helping children*. Sussex, England: John Wiley & Sons. p 275–305.
- Guralnick, M. J. (1999). Family and child influences on the peer-related social competence of young children with developmental delays. *Mental Retardation and Developmental Disabilities Research Reviews, 5*(1), 21-29.
- Guralnick, M. J., Hammond, M. A., Connor, R. T., & Neville, B. (2006). Stability, change, and correlates of the peer relationships of young children with mild developmental delays. *Child Development, 77*(2), 312-324.
- Guralnick, M. J., Neville, B., Connor, R. T., & Hammond, M. A. (2003). Family factors associated with the peer social competence of young children with mild delays. *Journal Information, 108*(4).
- Guralnick, M.J., Neville, B. (1997). Designing early intervention programs to promote children's social competence. In Guralnick, M.J. (Ed.) *The effectiveness of early intervention*. Baltimore: Brookes. p 579–610.

- Halligan, S. L., & Philips, K. J. (2010). Are you thinking what I'm thinking?: Peer group similarities in adolescent hostile attribution tendencies. *Developmental Psychology*, 46, 1385–1388.
- Harborne, A., Wolpert, M., & Clare, L. (2004). Making sense of ADHD: a battle for understanding? Parents' views of their children being diagnosed with ADHD. *Clinical Child Psychology and Psychiatry*, 9(3), 327-339.
- Hardy, C. L., Bukowski, W. M., & Sippola, L. K. (2002). Stability and change in peer relationships during the transition to middle level school. *Journal of Early Adolescence*, 22, 117–142.
- Hart, E. L., Lahey, B. B., Loeber, R., Applegate, B., & Frick, P. J. (1995). Developmental change in attention-deficit hyperactivity disorder in boys: A four-year longitudinal study. *Journal of Abnormal Child Psychology*, 23, 729–49.
- Hartup, W. W. (1984). The peer context in middle childhood. *Development during middle childhood: The years from six to twelve*, 240-282.
- Hartup, W. W. (1989a). Behavioral manifestations of children's friendships. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child development* (pp. 46-70). New York: Wiley.
- Hartup, W. W. (1989b). Social relationships and their developmental significance. *American Psychologist*, 44, 120-26.
- Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child development*, 67(1), 1-13.
- Hartup, W. W. (2005). Peer interaction: What causes what? *Journal of Abnormal Child Psychology*, 33, 387-394.

- Hartup, W. W., & Abecassis, M. (2002). Friends and enemies. In P. K. Smith & C. H. Hart (Eds.), *Blackwell handbook of childhood social development* (pp. 286–306). Malden, MA: Blackwell.
- Hartup, W. W., & Laursen, B. (1993). Conflict and context in peer relations. In C. H. Hart (Ed.), *Children on playgrounds: Research perspectives and applications* (pp. 44-84). Ithaca, NY: SUNY Press.
- Hartup, W., French, D., Laursen, B., Johnston, M., & Ogawa, J. (1993). Conflict and friendship relations in middle childhood: Behavior in a closed-field situation. *Child Development, 64*, 445–454.
- Hay, D. F., Payne, A., & Chadwick, A. (2004). Peer relations in childhood. *Journal of Child Psychology and Psychiatry, 45*, 84-108.
- Hays, R. B. (1985). A longitudinal study of friendship development. *Journal of Personality and Social Psychology, 48(4)*, 909-924.
- Heiman, T. (2005). An examination of peer relationships of children with and without attention deficit hyperactivity disorder. *School Psychology International, 26*, 330–339.
- Heinrich, L. M. & Gullone, E. (2006). The clinical significance of loneliness: a literature review. *Clinical Psychology Review, 26*, 695–718.
- Hetherington, E. M., Bridges, M., & Isabella, G. M. (1998). What matters? What does not? Five perspectives on the association between marital transitions and children's adjustment. *American Psychologist, 53*, 167-184.
- Hoffman, M. L. (1994). Discipline and internalization. *Developmental Psychology, 30(1)*, 26-28.

- Homans, George C. (1958). "Social Behavior as Exchange". *American Journal of Sociology* 63 (6): 597–606.
- Hornstein, G. A., & Truesdell, S. E. (1988). Development of intimate conversation in close relationships. *Journal of Social and Clinical Psychology*, 7, 49–64.
- Hoza, B. (2007). Peer functioning in children with ADHD. *Journal of Pediatric Psychology*, 32, 655-663.
- Hoza, B., Gerdes, A. C., Mrug, S., Hinshaw, S. P., Bukowski, W. M., Gold, J. A., et al. (2005). Peer assessed outcomes in the Multimodal Treatment Study of children with Attention Deficit Hyperactivity Disorder. *Journal of Clinical Child & Adolescent Psychology*, 34, 74–86.
- Hoza, B., Molina, B. S. G., Bukowski, W. M., & Sippola, L. K. (1995). Peer variables as predictors of later childhood adjustment. *Developmental Psychopathology*, 7, 787–802.
- Hoza, B., Mrug, S., Gerdes, A. C., Hinshaw, S. P., Bukowski, W. M., Gold, J. A. et al. (2005). What aspects of peer relationships are impaired in children with attention-deficit/hyperactivity disorder? *Journal of Consulting and Clinical Psychology*, 73, 411–423.
- Hoza, B., Mrug, S., Pelham, W. E., Greiner, A. R., & Gnagy, E. M. (2003). A friendship intervention for children with attention-deficit/hyperactivity disorder: Preliminary findings. *Journal of Attention Disorders*, 6, 87– 98.
- Hoza, B., Waschbusch, D. A., Pelham, W. E., Molina, B. S. G., & Milich, R. (2000). Attention-Deficit/Hyperactivity Disordered and control boys' responses to social success and failure. *Child Development*, 71, 432–446.

- Huang-Pollock, C. L., Mikami, A. Y., Pfiffner, L. & McBurnett, K. (2009). Can executive functions explain the relationship between Attention Deficit Hyperactivity Disorder and Social Adjustment. *Journal of Abnormal Child Psychology*, (37), 679-691.
- Hunt, J.C. (2013). Associations Between Different Parenting Styles and Child Behavior. *PCOM Psychology Dissertations*. Paper 262. Retrieved from: http://digitalcommons.pcom.edu/psychology_dissertations/262
- Hurks, P. P. M., & Hendriksen, J. G. M. (2010). Retrospective and prospective time deficits in childhood ADHD: The effects of task modality, duration, and symptom dimensions. *Child Neuropsychology*, 17(1), 34-50.
- Hurt, E.A, Hoza, B., Pelham, W.E. (2007) Parenting, family loneliness, and peer functioning in boys with attention-deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology*, 35, 543–555.
- Hussong, A. M. (2000). Perceived peer context and adolescent adjustment. *Journal of Research on Adolescence*, 10, 391– 415.
- Ickes, W., & Hodges, S. D. (2013). Empathic Accuracy in Close Relationships. *The Oxford Handbook of Close Relationships*, 348.
- Johnson, J. H., & Reader, S. K. (2002). Assessing stress in families of children with ADHD: Preliminary development of the Disruptive Behavior Stress Inventory (DBSI). *Journal of Clinical Psychology in Medical Settings*, 9, 51–62.
- Jones, W. H., Hobbs, A. S., & Hockenbury, D. (1982). Loneliness and social skill deficits. *Journal of Personality and Social Psychology*, 42, 682-689.

- Jourard, S. (1971). *Self-disclosure: An experimental analysis of the transparent self*. New York: John Wiley.
- Kamins, M. L., & Dweck, C. S. (1999). Person versus process praise and criticism: implications for contingent self-worth and coping. *Developmental psychology, 35*(3), 835.
- Kendall, P. C., & Braswell, L. (1993). *Cognitive-behavioral therapy for impulsive children*. Guilford Press.
- Kenny, D. A. (1995). The effect of nonindependence on significance testing in dyadic research. *Personal Relationships, 2*, 67-75.
- Kerns, K. A., Eso, K., & Thomson, J. (1999). Investigation of a direct intervention for improving attention in young children with ADHD. *Developmental Neuropsychology, 16*, 273-295.
- Kerns, K. A., Klepac, L., & Cole, A. (1996). Peer relationships and preadolescents' perceptions of security in the child-mother relationship. *Developmental Psychology, 32*, 457-466.
- Kiesner, J., Poulin, F., & Nicotra, E. (2003). Peer relations across contexts: Individual-network homophily and network inclusion in and after school. *Child Development, 74*, 1-16.
- Kofler, M. J., Rapport, M. D., Sarver, D. E., Raiker, J. S., Orban, S. A., Friedman, L. M., & Kolomeyer, E. G. (2013). Reaction time variability in ADHD: A meta-analytic review of 319 studies. *Clinical Psychology Review, 33*(6), 795-811.
- Kupersmidt, J. B., Coie, J. D., & Dodge, K. A. (1990). The role of poor peer relationships in the development of disorder. In S. Asher & J.D. Coie (Eds.), *Peer rejection in*

childhood. Cambridge studies in social and emotional development (pp. 274–305). New York: Cambridge University Press.

- Kupersmidt, J. B., Griesler, P. C., DeRosier, M. E., Patterson, C. J., & Davis, P. W. (1995). Childhood aggression and peer relations in the context of family and neighborhood factors. *Child development, 66*(2), 360-375.
- La Greca, A. M., & Harrison, H. M. (2005). Adolescent peer relations, friendships, and romantic relationships: Do they predict social anxiety and depression? *Journal of Clinical Child and Adolescent Psychology, 34*, 49– 61.
- Ladd, G. & Hart, C. (1998). Creating Informal Play Opportunities: Are Parents' and Preschoolers' Initiations Related to Children's Competence With Peers? *Developmental Psychology, 28* (6), 1179-1187.
- Ladd, G. (1999). Peer relationships and social competence during early and middle childhood. *Annual Review of Psychology, 50*, 333-359.
- Ladd, G.W., Kochenderfer, B. J., & Coleman, C. C. (1996). Friendship quality as a predictor of young children's early school adjustment. *Child Development 67*, 1103–1118.
- Laghi, F., Baiocco, R., Cannoni, E., Di Norcia, A., Baumgartner, E., & Bombi, A. S. (2013). Friendship in children with internalizing and externalizing problems: A preliminary investigation with the pictorial assessment of interpersonal relationships. *Children and Youth Services Review, 35*(7), 1095-1100.
- Landau, S., & Milich, R. (1988). Social communication patterns of ADD boys. *Journal of Abnormal Child Psychology, 16*, 69-81.

- Lansford, J. E., Putallaz, M., Grimes, C. L., Schiro-Osman, K. A., Kupersmidt, J. B., & Coie, J. D. (2006). Perceptions of friendship quality and observed behaviors with friends: How do sociometrically rejected, average, and popular girls differ? *Merrill-Palmer Quarterly*, *52*, 694–720.
- Laursen, B. (1993). The perceived impact of conflict on adolescent relationships. *Merrill-Palmer Quarterly*, *39*, 535-550.
- Laursen, B. (1996). Closeness and conflict in adolescent peer relationships: Interdependence with friends and romantic partners. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 186–210). New York: Cambridge University Press.
- Ledbetter, A.M., Griffin, E., & Sparks, G.G. (2007). Forecasting "friends forever": A longitudinal investigation of sustained closeness between best friends. *Personal Relationships*, *14*(2), 343-350.
- Legerski, J. P., Biggs, B. K., Greenhoot, A. F., & Sampilo, M. L. (2014). Emotion Talk and Friend Responses Among Early Adolescent Same-sex Friend Dyads. *Social Development*.
- Leibson, C. L., Katusic, S. K., Barbaresi, W. J., Ransom, J., & O'Brien, P. C. (2001). Use and costs of medical care for children and adolescents with and without Attention-Deficit/Hyperactivity Disorder. *Journal of the American Medical Association*, *285*, 60–66.
- Levin, H.S., Goldstein, F.C., Williams, D.H., & Eisenberg, H.M. (1991). The contribution of frontal lobe lesions to the neurobehavioral outcome of closed head injury. In:

Levin H.S., Eisenberg H.M., Benton A.I., eds. *Frontal Lobe Function and Dysfunction*. New York: Oxford University Press. 318–338.

Lochman, J. E., & Wells, K. C. (2002). Contextual social-cognitive mediators and child outcome: A test of the theoretical model in the coping power program. *Development and Psychopathology, 14*, 945– 967.

Maccoby, E. E. (1990). Gender and relationship: A developmental account. *American Psychologist, 45*, 513-520.

Maedgen, J. W., & Carlson, C. (2000). Social functioning and emotional regulation in the attention deficit hyperactivity disorder subtypes. *Journal of Clinical Child Psychology, 29*, 30–42.

Mahoney, J. L. (2000). School extracurricular activity participation as a moderator in the development of antisocial patterns. *Child Development, 71*, 502–516.

Mahoney, J. L., Larson, R. W. & Eccles, J. S. (2005). *Organized activities as contexts of development: extracurricular activities, after-school and community programs*. Mahwah, N.J.: Lawrence Erlbaum.

Malik, N. M., & Furman, W. (1993). Practitioner review: Problems in children's peer relations: What can the clinician do? *Journal of Child Psychology and Psychiatry, 34*, 1303– 1326.

Mannarino, A. P. (1978). The interactional process in preadolescent friendships. *Psychiatry, 41*, 308-312.

Marshal, M. P., Molina, B. S. G., & Pelham, W. E. (2003). Childhood ADHD and adolescent substance use: An examination of deviant peer group affiliation as a risk factor. *Psychology of Addictive Behaviors, 17*, 293–302.

- Martin, R. (1997). "Girls don't talk about garages!": Perceptions of conversation in same-sex and cross-sex friendships. *Personal Relationships*, 4, 115-130.
- Marton, I., Weiner, J., Rogers, M., & Moore, C. (2012). Friendship characteristics of children with ADHD. *Journal of Attention Disorders*.
- Marton, I., Wiener, J., Rogers, M., Moore, C., & Tannock, R. (2009). Empathy and social perspective taking in children with Attention-Deficit/Hyperactivity Disorder. *Journal of Abnormal Child Psychology*, 37, 107–118.
- Marton, I., Wiener, J., Rogers, M., Moore, C., & Tannock, R. (2009). Empathy and social perspective taking in children with Attention Deficit/Hyperactivity Disorder. *Journal of Abnormal Child Psychology*, 37, 107-118.
- Masten, C. L., Telzer, E. H., Fuligni, A. J., Lieberman, M. D., & Eisenberger, N. I. (2010). Time spent with friends in adolescence relates to less neural sensitivity to later peer rejection. *Social Cognitive and Affective Neuroscience*, SCAN 2010, 1-9.
- Matheson, C., Olsen, R. J., Weisner T., & Dykens, E. (2007). A good friend is hard to find: Friendship among adolescents with disabilities. *American Journal on Mental Retardation*, 112, 319-329.
- Mathur, R. & Berndt, T. J. (2006). Relations of friends' activities to friendship quality. *The Journal of Early Adolescence*, 26,365-388.
- Matthews, S. (1986). *Friendships through the life course*. Beverly Hills, CA: Sage.
- McDougall, P., & Hymel, S. (2007). Same-gender versus cross-gender friendship conceptions: Similar or different? *Merrill-Palmer Quarterly*, 53, 347–380.

McGee, R., & Feehan, M. (1991). Are girls with problems of attention under-recognized?

Journal of Psychopathology and Behavioral Assessment, 13, 187–198.

McGuire, K. & Weisz, J. R. (1982). Social cognition and behavior correlates of

preadolescent "chumship". *Child Development, 53*, 1478-1484.

McMahon, R. J., Long, N., & Forehand, R. L. (2011). Parent training for the treatment of oppositional behavior in young children: Helping the noncompliant child.

In *Clinical handbook of assessing and treating conduct problems in youth* (pp. 163-191). Springer New York.

Melnick, S. M., & Hinshaw, S. P. (1996). What they want and what they get: The social goals of boys with ADHD and comparison boys. *Journal of Abnormal Child Psychology, 24*, 169-185.

Mendelson, L. J. (2012) The role of parental psychopathology in friendship among children with AD/HD. (Masters thesis). Retrieved from Dissertations and Theses database. (UNCG; <http://library.uncg.edu/>)

Mikami, A. Y. (2010). The importance of friendship for youth with Attention-Deficit/Hyperactivity Disorder. *Clinical Child and Family Psychology Review, 13*, 181–198.

Mikami, A., Lerner, M., Griggs, M, McGrath, A. & Calhoun, C. (2010). Parental influence on children with Attention-Deficit/Hyperactivity Disorder: II. Results of a pilot intervention training parents as friendship coaches for children. *Journal of Abnormal Child Psychology, 38*, 737-749.

Morgan, J., Robinson, D., & Aldridge, J. (2002). Parenting stress and externalizing child behaviour. *Child & Family Social Work, 7*, 219–225.

- Mounts, N. S. (2000). Parental management of adolescent peer relationships: What are its effects on friend selection? In K. Kerns, J. Contreras, & A. Neal-Barnett (Eds.), *Family and peers: Linking two social worlds* (pp. 169–193). Westport, CT: Praeger.
- Mouttapa, M., Valente, T., Gallaher, P., Rohrback, L. A., & Unger, J. B. (2004). Social network predictors of bullying and victimization. *Adolescence, 39*, 315–335.
- Mrug, S., Hoza, B., & Bukowski, W. M. (2004). Choosing or being chosen by aggressive-disruptive peers: Do they contribute to children's externalizing and internalizing problems? *Journal of Abnormal Child Psychology, 32*, 53–65.
- Murray, C., & Johnston, C. (2006). Parenting in mothers with and without attention-deficit/hyperactivity disorder. *Journal of abnormal psychology, 115*(1), 52.
- Nærland, T. (2011). Language competence and social focus among preschool children. *Early Child Development and Care, 181*, 599-612.
- Nangle, D. W., Erdley, C. A., Newman, J. E., Mason, C. A., & Carpenter, E. M. (2003). Popularity, friendship quantity, and friendship quality: Interactive influences on children's loneliness, and depression. *Journal of Clinical Child and Adolescent Psychology, 32*, 546–555.
- Neckerman, H. J. (1996). The stability of social groups in childhood and adolescence: The role of the classroom social environment. *Social Development, 5*, 131–145.
- Nelson, J. & Aboud, F. E. (1985). The resolution of social conflict between friends. *Child Development, 56*, 1009–1017.
- Newcomb, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin, 117*, 306–347.

- Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113*, 99–128.
- Nigg, J. T., & Hinshaw, S. P. (1998). Parent personality traits and psychopathology associated with antisocial behaviors in childhood attention-deficit hyperactivity disorder. *Journal of Child Psychology and Psychiatry, 39*(2), 145-159.
- Nigg, J. T., Blaskey, L. G., Stawicki, J. A., & Sachek, J. (2004). Evaluating the end phenotype model of ADHD neuropsychological deficit: Results for parents and siblings of children with ADHD combined and inattentive subtypes. *Journal of Abnormal Psychology, 113*(4), 614-625.
- Nilsen, E. S., Mangal, L., & MacDonald, K. (2013). Referential communication in children with ADHD: challenges in the role of a listener. *Journal of Speech, Language, and Hearing Research, 56*(2), 590+.
- Nixon, E. (2001). The social competence of children with attention deficit hyperactivity disorder: A review of the literature. *Child and Adolescent Mental Health, 6*(4), 172-180.
- Normand, S. (2011). How do children with ADHD (mis)manage their real-life dyadic friendships? A multi-method investigation. (Doctoral dissertation). Retrieved from UOTTAWA DSPACE. (Identifier: <http://hdl.handle.net/10393/20139>)
- Normand, S., Schneider, B. H., & Robaey, P. (2007). Attention deficit/hyperactivity disorder and the challenges of close friendship. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 16*, 67–73.

- Normand, S., Schneider, B. H., Lee, M. D., Maisonneuve, M.-F., Kuehn, S. M., & Robaey, P. (2010 Sep 8. [Epub ahead of print]). How do children with ADHD (mis)manage their real-life dyadic friendships? A multi-method investigation. *Journal of Abnormal Child Psychology*.
- Normand, S., Schneider, B., Lee, M., Maisonneuve, M.-F., Chupetlovska-Anastasova, A., Kuehn, S. & Robaey, P. (2013). Continuities and changes in the friendships of children with and without Attention-Deficit/Hyperactivity Disorder: A longitudinal, observational study. *Journal of Abnormal Child Psychology*, *41*, 1161-1175.
- O'Brien, J. W., Dowell, L. R., Mostofsky, S. H., Denckla, M. B., & Mahone, E. M. (2010). Neuropsychological profile of executive function in girls with attention-deficit/hyperactivity disorder. *Archives of Clinical Neuropsychology*, *25*, 656-670.
- Olson, K. R., & Dweck, C. S. (2008). A blueprint for social cognitive development. *Perspectives on Psychological Science*, *3*, 193–202.
- Olsson, A. (2011). The impact of social cognition on emotional learning from and about others: a neurobiological perspective. In T. Schachtman & S. Reilly (Eds.), *Associative learning and conditioning theory: human and non-human applications*. New York: Oxford University Press.
- Oswald, D. L., & Clark, E. M. (2003). Best friends forever?: High school best friendships and the transition to college. *Personal Relationships*, *10*, 187-196.
- Oswald, D. L., Clark, E. M., & Kelly, C. M. (2004). Friendship maintenance: An analysis of individual and dyad behaviors. *Journal of Social & Clinical Psychology*, *23*, 413-441.

- Paap, M.C.S., Haraldsen, I.R., Breivik, K., Butcher, P.R., Hellem, F.M., & Stormark, K.M. (2013). The Link between Peer Relations, Prosocial Behavior, and ODD/ADHD Symptoms in 7–9-Year-Old Children, *Psychiatry Journal*, v. 2013, 319874.
- Parker, J. G. & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*, 29, 611-621.
- Parker, J. G., & Gottman, J. M. (1989). Social and emotional development in a relational context: Friendship interaction from early childhood to adolescence. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relations in child development* (pp. 95–131). New York: Wiley.
- Parker, J. G., & Herrera, C. (1996). Interpersonal processes in friendship: A comparison of abused and nonabused children's experiences. *Developmental Psychology*, 32, 1025-1038.
- Parker, J. G., & Seal, J. (1996). Forming, losing, renewing, and replacing friendships: Applying temporal parameters to the assessment of children's friendship experiences. *Child Development*, 67, 2248–2268.
- Parker, J. G., Rubin, K. H., Erath, S. A., Wojslawowicz, J. C., & Buskirk, A. A. (2006). Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In D. Cicchetti, & D. J. Cohen (Eds.), *Developmental psychopathology, Vol. 1: Theory and methods* (2nd ed., pp. 419–493). Hoboken, NJ: John Wiley & Sons Inc.

- Pelc, K., Kornreich, C., Foisy, M. L., & Dan, B. (2006). Recognition of emotional facial expressions in attention-deficit hyperactivity disorder. *Pediatric Neurology* 35 (2), 93–97.
- Pelham, W. E., Fabiano, G. A., & Massetti, G. M. (2005). Evidence-based assessment of attention deficit/hyperactivity disorder in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, 34, 449-476.
- Pennington, B. F., & Ozonoff, S. (1996). Executive functions and developmental psychopathology. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 37, 51–87.
- Pennington, B.F., Welsh, M. (1995). Neuropsychology and developmental psychopathology. In Cicchetti, D., Cohen, D., (Eds.) *Handbook of developmental psychopathology*. Cambridge: Cambridge University Press. p 254–290.
- Perkins D. F., & Jones K. R. (2004). Risk behaviors and resiliency within physically abused adolescents. *Child Abuse and Neglect*, 28, 547-563.
- Petronio, S. (2002). *Boundaries of privacy: Dialectics of disclosure*. Albany: State University of New York Press.
- Pettit, G. S., Laird, R. D., Dodge, K. A., Bates, J. E., & Criss, M. M. (2001). Antecedents and behavior-problem outcomes of parental monitoring and psychological control in early adolescence. *Child Development*, 72(2), 583-598.
- Pfiffner, L., & McBurnett, K. (2006). Family Correlates of Comorbid Anxiety Disorders in Children with Attention Deficit/Hyperactivity Disorder *Journal of Abnormal Child Psychology*, 34, 725–735.

- Place, K. S., & Becker, J. A. (1991). The influence of pragmatic competence on the likeability of grade-school children. *Discourse Processes, 14*, 227-241.
- Poulin, F. & Chan, A. (2010). Friendship stability and change in childhood and adolescence. *Developmental Review, 30*, 257-272.
- Poulin, F., & Boivin, M. (2000). The role of proactive and reactive aggression in the formation and development of boys' friendships. *Developmental Psychology, 36*, 233-240.
- Quinn, M., Kavale, K., Mathur, S., Rutherford, R., & Forness, S. (1999). A meta-analysis of social skill interventions for students with emotional or behavioral disorders. *Journal of Emotional and Behavioral Disorders, 7*, 1478- 1487.
- Reis, H. T., Collins, W. A., & Berscheid, E. (2000). The relationship context of human behavior and development. *Psychological Bulletin, 126*, 844-872
- Riggio, R. E. (1986). Assessment of basic social skills. *Journal of Personality and Social Psychology, 51*(3), 649-660.
- Riggio, R. E. (2010). Before emotional intelligence: research on nonverbal, emotional, and social competences. *Industrial and Organizational Psychology, 3*(2), 178-182.
- Riggio, R. E., & Carney, D. (2003). Manual for the social skills inventory. MindGarden. Redwood City, CA.
- Ronk, M., Hund, A., & Landau, S. (2011). Assessment of social competence of boys with attention-Deficit/Hyperactivity disorder: Problematic peer entry, host responses, and evaluations. *Journal of Abnormal Child Psychology, 39*(6), 829-840.

- Rose, A. J. & Rudolph, K. D. (2006). A review of sex differences in peer relationship processes: Potential trade-offs for the emotional and behavioral development of girls and boys. *Psychological Bulletin*, 132, 98-131.
- Rose, A. J., & Asher, S. R. (2000). Children's friendships. In S. S. Hendrick & C. Hendrick (Eds.), *Close relationships: A sourcebook* (pp. 47-57). Thousand Oaks, CA: Sage.
- Rose, S. 1985. Same- and cross-sex friendships and the psychology of homosociality. *Sex Roles*, 12, 63-74.
- Rose, S., & Serafica, F. C. (1986). Keeping and ending best, close, and casual friendships. *Journal of Social and Personal Relationships*, 3, 275-88.
- Rosenfeld, L. B., & Kendrick, W. L. (1984). Choosing to be open: An empirical investigation of subjective reasons for self-disclosing. *Western Journal of Speech Communication*, 48, 326-343.
- Rotenberg, K. J. (2010). The relationship between loneliness and interpersonal trust during middle childhood. *Journal of Genetic Psychology*, 165, 233-249.
- Roth, J. L., & Brooks-Gunn, J. (2003). What exactly is a youth development program? Answers from research and practice. *Applied Developmental Science*, 7, 92-109.
- Rubin, K. H., & Burgess, K. (2002). Parents of aggressive and withdrawn children. In M. Bornstein (Ed.), *Handbook of Parenting* (2nd ed., Vol. 1, 383-418). Hillsdale, NJ: Erlbaum.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2011). Peer interactions, relationships, and groups. In Rubin, K. H., Bukowski, W. M., & Laursen, B. (Eds.), *Handbook of peer interactions, relationships, and groups*. Guilford Press.

- Rubin, K. H., Bukowski, W., & Parker, J. G. (1998). Peer interactions, relationships, and groups. In: N. Eisenberg (Ed.), *Handbook of Child Psychology, Vol.3, Social, Emotional, and Personality Development* (pp. 619–700). New York: Wiley.
- Rubin, K.H., Fredstrom, B., & Bowker, J. (2008). Future directions in friendship in childhood and early adolescence. *Social Development, 17*, 1085-1096.
- Rusbult, C. E. (1980). Commitment and satisfaction in romantic associations: A test of the investment model. *Journal of Experimental Social Psychology, 16*, 172–186.
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships, 5*, 357–391.
- Sagvolden, T., Johansen, E. B., Aase, H., & Russell, V. A. (2005). A dynamic developmental theory of Attention-Deficit/Hyperactivity Disorder (ADHD) predominantly hyperactive/ impulsive and combined subtypes. *The Behavioral and Brain Sciences, 28*, 397–419.
- Samter, W. (2003). Friendship interaction skills across the life-span. In J. O. Greene & B. R. Burlison (Eds.), *Handbook of communication and social interaction skills* (pp. 637-684), Mahwah, NJ: L. Erlbaum Associates.
- Schneider, B. H, Soteras-deToro, M. P., Woodburn, S., Fulop, M., Cervino, C., Bernstein, S. et al. (2006). Cross-cultural differences in competition amongst children and adolescents. In X. Chen, D. French, & B.H. Schneider (Eds.), *Cultural dimensions of children's peer relations*. (pp. 93-107). New York: Cambridge University Press.

- Schneider, B. H. (1992). Didactic methods for enhancing children's peer relations: A quantitative review. *Clinical Psychology Review, 12*, 363–382.
- Schneider, B. H. (2000). *Friends and enemies: Peer relations in childhood*. Oxford University Press.
- Schneider, B. H. (2009). An observational study of the interactions of socially withdrawn/anxious early adolescents and their friends. *Journal of Child Psychology and Psychiatry, 50*, 799-806.
- Schneider, B. H., Dixon, K. & Udvari, S. (2007). Closeness and competition in the inter-ethnic and co-ethnic friendships of early adolescents in Toronto and Montreal. *Journal of Early Adolescence, 27*, 115-138.
- Schneider, B. H., Fonzi, A., Tani, F., & Tomada, G. (1997). A cross-cultural exploration of the stability of children's friendships and the predictors of their continuation. *Social Development, 6*, 322–339.
- Schneider, B. H., Fonzi, A., Tomada, G., & Tani, F. (2000). A cross-national comparison of children's behaviour with their friends in situations of potential conflict. *Journal of Cross-Cultural Psychology, 31*, 259-268.
- Schneider, B. H., Wiener, J., & Murphy, K. (1994). Children's friendships: The giant step beyond peer acceptance. *Journal of Personal and Social Relationships, 11*, 323–340.
- Selfhout, M. H. W., Branje, S. J. T., & Meeus, W. H. J. (2009). Developmental trajectories of perceived friendship intimacy, constructive problem solving, and depression from early to late adolescence. *Journal of Abnormal Child Psychology, 37*, 251–264.

- Selman, R. L. (1981). The child as a friendship philosopher. In S. Asher & J. Gottman (Eds.), *The Development of Children's friendships* (pp. 242-272). New York: Cambridge University Press.
- Selman, R. L., & Schultz, L. H. (1990). Making a friend in youth. Chicago: University of Chicago Press.
- Selman, R. L., & Schultz, L. H. (1990). Making a friend in youth: Developmental theory and pair therapy. Chicago: University of Chicago Press.
- Selman, R. L., Schultz, L. H., Nakkula, M., Barr, D., Watts, C., & Richmond, J.B. (1992). Friendship and fighting: A developmental approach to the study of risk and prevention of violence. *Development and Psychopathology*, 4, 529– 558.
- Semrud-Clikeman M. (2010). The role of inattention and social perception and performance in two subtypes of ADHD. *Archives of Clinical Neuropsychology*, 25, 771-780.
- Shea, B., & Wiener, J. (2003). Social exile: the cycle of peer victimization for boys with ADHD. *Canadian Journal of School Psychology*, 18(1-2), 55-90.
- Shelton, N. J., Richeson, J. A., & Bergsieker, H. B. (2009). Interracial friendship development and attributional biases. *Journal of Social and Personal Relationships*, 26,179-193.
- Shulman, S., Laursen, B., Kalman, Z., & Karpovsky, S. (1997). Adolescent intimacy revisited. *Journal of Youth and Adolescence*, 26, 597–617.
- Sijtsema, J. J., Lindenberg, S. M., & Veenstra, R. (2010). Do they get what they want or are they stuck with what they get?: Testing homophily against default selection

for friendships of highly aggressive boys. The TRAILS study. *Journal of Abnormal Child Psychology*, 38, 803– 813.

- Sillars, A. L. (1981). Attributions and interpersonal conflict resolution. In J. H. Harvey, W. J. Ickes & R. F. Kidd (Eds.), *New directions in attribution research, Vol. 3* (pp.279-305). Hillsdale, NJ: Erlbaum.
- Smith, B., Barkley, R. A., & Shapiro, C. (2006). Attention deficit hyperactivity disorder. In E. J. Mash & R. A. Barkley (Eds.), *Treatment of Childhood Disorders*. New York: Guilford Press; 65-136.
- Soorya L.V. & Halpern D. (2009). Psychosocial interventions for motor coordination, executive functions, and socialization deficits in ADHD and ASD. *Primary Psychiatry*. 16(1), 48-54.
- Spencer, T. J., Biederman, J., & Mick, E. (2007). Attention-Deficit/Hyperactivity Disorder: Diagnosis, Lifespan, Comorbidities, and Neurobiology. *Journal of Pediatric Psychology*, 32, 631-642.
- Stattin, H., Kerr, M., & Skoog, T. (2011). Early pubertal timing and girls' problem behavior: Integrating two hypotheses. *Journal of Youth and Adolescence*, 40(10), 1271-1287.
- Staub, E., & Eisenberg, N. (1981). Social cognition, affect, and behavior: An essay and review of Robert Selman's "The growth of interpersonal understanding: Developmental and clinical analyses". *Developmental Review*, 1, 385–400.
- Stawicki, J., Nigg, J. T, & von Eye, A. (2004). Family history data on the relation of ADHD combined and inattentive subtypes: New findings and meta-analysis. Manuscript submitted for publication.

- Steenbeek, H. & van Geert P. (2008). An empirical validation of a dynamic systems model of interaction: do children of different sociometric statuses differ in their dyadic play? *Developmental Science*, *11*, 253–281.
- Steinberg, L. (2001). We know some things: Parent–adolescent relationships in retrospect and prospect. *Journal of research on adolescence*, *11*(1), 1-19.
- Strassberg, Z. (1995). Social information processing in compliance situations by mothers of behavior-problem boys. *Child Development*, *66*(2), 376–389.
- Stuss, D.T., Gallup, G.G., & Alexander, M.P. (2001). The frontal lobes are necessary for ‘theory of mind’. *Brain* *124*, 279–286
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using Multivariate Statistics: Fifth Edition*. Boston, MA: Pearson Education.
- Taylor, A. S., Peterson, C. A., McMurray-Schwarz, P., & Guillou, T. S. (2002). Social skills interventions: Not just for children with special needs. *Young Exceptional Children*, *5*(4), 19-26.
- Taylor, D., & Altman, I. (1987). Communication in interpersonal relationships: Social penetration processes. In M. Roloff & G. Miller (Eds.), *Interpersonal processes: New directions in communication research* (pp. 257–277). Newbury Park, CA: Sage.
- Tedesco, L. A. & Gaier, E. L. (1988) Friendship bonds in adolescence. *Adolescence*, *23*, 127-136.

- Theule, J., Wiener, J., Tannock, R., & Jenkins, J. (2013). Parenting stress in families of children with ADHD: A meta-analysis. *Journal of Emotional and Behavioral Disorders, 21*(1), 3-17.
- Tomada, G., Schneider, B. H., & Fonzi, A. (2002). Verbal and Nonverbal Interactions of Four- and Five-Year-Old Friends in Potential Conflict Situations. *The Journal of Genetic Psychology, 163*, 327-339.
- Tryon, A. S., & Keane, S. P. (1991). Popular and aggressive boys' initial social interaction patterns in cooperative and competitive settings. *Journal of Abnormal Child Psychology, 19*, 395-406.
- Turner, H. A., Finkelhor, D., Hamby, S. L., & Shattuck, A. (2013). Family structure, victimization, and child mental health in a nationally representative sample. *Social Science and Medicine, 87*, 39-51.
- Tyler, A. L. (1993). Mutuality and intimacy in Attention Deficit Hyperactivity Disorder and Normal Boys' Friendship Relations. Unpublished master's thesis, University of Richmond, VA.
- Uekermann, J., Kraemer, M., Abdel-Hamid, M., Schimmelmann, B.G., Hebebrand, J., Daum, I., Wiltfang, J., & Kis B. (2010). Social cognition in attention-deficit hyperactivity disorder (ADHD). *Neuroscience & Biobehavioral Reviews, 34*(5), Special Section: Dopaminergic Modulation of Lifespan Cognition, 734-743.
- van der Oord, S., Prins, P. J., Oosterlaan, J., & Emmelkamp, P. M. (2006). The association between parenting stress, depressed mood and informant agreement in ADHD and ODD. *Behavior Research and Therapy, 44*, 1585-1595.

- Van Doorn, M. D., Branje, S. J., VanderValk, I. E., De Goede, I. H., & Meeus, W. H. (2011). Longitudinal spillover effects of conflict resolution styles between adolescent-parent relationships and adolescent friendships. *Journal of Family Psychology, 25*(1), 157.
- Waldo, M. (1984). Roommate communication as related to students' personal and social adjustment. *Journal of College Student Personnel, 25*, 39-44.
- Walker, K. (1994). *Men, women, and friendship: What they say, what they do*. *Gender & Society, 8*, 246-265.
- Way, N., & Chen, L. (2000). Close and general friendships among African American, Latino, and Asian American Adolescents from Low-Income Families. *Journal of Adolescent Research, 15*, 274–301.
- Way, N., & Greene, M. L. (2006). Trajectories of Perceived Friendship Quality During Adolescence: The Patterns and Contextual Predictors. *Journal of Research on Adolescence, 16*, 293-320.
- Way, N., & Pahl, K. (2001). Individual and contextual-level predictors of perceived friendship quality among ethnic minority, low-income adolescents. *Journal of Research on Adolescence, 11*, 325–349.
- Wehmeier, P. M., Schacht, A., & Barkley, R. A. (2010). Social and emotional impairment in children and adolescents with ADHD and the impact on quality of life. *Journal of Adolescent Health, 46*, 209-217.
- Weimer, B. L., Kerns, K. A., & Oldenburg, C. M. (2004). Adolescent's interactions with a best friend: Associations with attachment style. *Journal of Experimental Child Psychology, 88*, 102-120.

- Welsh, M. C. (2002). Developmental and clinical variations in executive functions. In U. Kirk & D. Molfese (Eds.), *Developmental variations in language and learning*. (pp. 139-185). Mahwah, NJ: Lawrence Erlbaum Associates.
- Werner, C. M., Altman, I., & Brown, B. B. (1992). A transactional approach to interpersonal relations: Physical environment, social context and temporal qualities. *Journal of Social and Personal Relationships*, 9, 297- 323.
- Werner, N. E., & Crick, N. R (2004). Maladaptive peer relations and the development of relational and physical aggression during middle childhood. *Social Development*, 13, 495–514.
- Whalen, C. K., & Henker, B. (1985). The social worlds of hyperactive (ADHD) children. *Clinical Psychology Review*, 5, 447-478.
- Whalen, C. K., & Henker, B. (1992). The social profile of Attention Deficit Hyperactivity Disorder. Five fundamental facets. *Child and Adolescent Clinics of North America*, 1, 395-410.
- Whalen, C. K., Henker, B., Castro, J., & Granger, D. (1987). Peer perceptions of hyperactivity and medication effects. *Child Development*, 58, 816-828.
- Whalen, C. K., Henker, B., Collins, B. E., Finck, D., & Dotemoto, S. (1979). Peer interaction in a structured communication task: comparisons of normal and hyperactive boys and of methylphenidate (Ritalin) and placebo effects. *Child Development*, 50, 388–401.
- Wheeler, J., & Carlson, C. L. (1994). The Social Functioning Of Children With ADD With Hyperactivity And ADD Without Hyperactivity A Comparison Of Their

Peer Relations And Social Deficits. *Journal of emotional and behavioral disorders*, 2(1), 2-12.

Wiener, J. & Schneider, B. (2002). A Multisource Exploration of the Friendship Patterns of Children with and Without Learning Disabilities. *Journal of Abnormal Child Psychology*, 30(2), 127-141.

Wiener, J. (2004). Do peer relationships foster behavioral adjustment in children with learning disabilities? *Learning Disability Quarterly*, 27(1), 21-30.

Wilens, T. E., Biederman, J., & Spencer, T. J. (2002). Attention Deficit/Hyperactivity Disorder across the lifespan. *Annual Review of Medicine*, 53, 113–131.

Willcutt, E. G., Pennington, B. F., & DeFries, J. C. (2000). Etiology of inattention and hyperactivity/impulsivity in a community sample of twins with learning difficulties. *Journal of Abnormal Psychology*, 28, 149–159.

Willoughby M. T. (2003). Developmental course of ADHD symptomatology during the transition from childhood to adolescence: a review with recommendations. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 44, 88-106.

Won-Doornink, M. J. (1985). Self-Disclosure and Reciprocity in Conversation: A Cross-National Study. *Social Psychology Quarterly*, 48, 97-107.

Wood, B. & Gardner, R. (1980). How children get their way: Directives in communication. *Communication Education*, 29, 264-272.

Ylvisaker, M. & Feeney, T.J. (1998). *Collaborative Brain Injury Intervention: Positive Everyday Routines*. San Diego, CA: Singular Publishing.

- Ylvisaker, M., Jacobs, H.E., & Feeney, T. (2003). Positive supports for people who experience behavioural and cognitive disability after brain injury: a review. *Journal of Head Trauma Rehabilitation*, 18, 7–32.
- Ylvisaker, M., Turkstra, L. S., & Coelho, C. (2005). Behavioral and social interventions for individuals with traumatic brain injury: A summary of the research with clinical implications. *Seminars in speech and language*, 26(4), 256-267.
- Yu, S., Ostrosky, M. M., & Fowler, S. A. (2011). Children's Friendship Development: A Comparative Study. *Early Childhood Research & Practice*, 13(1), n1.
- Zelazo, P. D. & Muller, U. (2002). Executive function in typical and atypical development. In U. Goswami (Ed.), *Blackwell handbook of childhood cognitive development*. (pp. 445-469). Malden, MA: Blackwell Publishers Ltd.
- Zumbo, B.D., Amery, D. Wu, & Liu, Y. (2012). Measurement and statistical analysis issues with longitudinal assessment data. In K. Ercikan, M. Simon, & M. Rousseau (Eds.), *Improving large scale education assessment: Theory, issues, and practice*. New York: Taylor and Francis/Routledge.

Tables

Table 1

Descriptive Statistics for Conners Ratings: Means and SDs (in parentheses).

Adapted from "How do children with ADHD (mis)manage their real-life dyadic friendships? A multi-method investigation"

by Normand, S., 2011, Doctoral dissertation. Retrieved from UOTTAWA DSPACE. (Identifier: <http://hdl.handle.net/10393/20139>)

Rating-scale data *b*

	Referred ADHD (n = 87)	Referred Comparison (n = 46)	Friend of ADHD (n = 87)	Friend of Comparison (n = 46)	<i>F</i> (3,258) ^a	Partial η^2
CPRS-R (<i>T</i> -scores) ^b						
DSM-IV Inattention	73.86 (8.65) _a	46.96 (5.64) _b	55.78 (11.90) _c	48.96 (7.21) _b	123.71****	0.59
DSM-IV Hyperactivity	71.37 (13.67) _a	47.76 (4.44) _b	55.04 (12.42) _c	49.57 (7.78) _b	64.80****	0.43
Opposition	68.11 (12.94) _a	49.70 (6.86) _b	54.65 (12.90) _b	49.89 (10.15) _b	39.42****	0.31
Peer Problems	68.75 (13.93) _a	48.87 (5.40) _b	53.83 (11.76) _b	48.93 (6.19) _b	52.25****	0.38
CTRS-R (<i>T</i> -scores) ^b						
DSM-IV Inattention	64.66 (10.94) _a	46.42 (5.02) _b	53.92 (11.15) _c	46.75 (6.57) _b	51.58****	0.40
DSM-IV Hyperactivity	61.82 (13.75) _a	45.71 (4.17) _b	52.01 (9.47) _c	46.80 (5.46) _b	35.08****	0.31

Opposition	61.08 (15.09) _a	48.16 (7.45) _{bc}	53.30 (11.73) _b	47.25 (5.10) _c	19.11***	0.20
Peer Problems	59.56 (15.96) _a	49.42 (6.56) _b	52.38 (11.79) _b	47.36 (5.21) _b	12.97***	0.14

Note.

Entries with different subscripts differ significantly.

^a One-way ANOVA.

^b For the parent questionnaire (CPRS-R), data were available for only 83 friends of children with ADHD instead of 87. For the teacher questionnaire (CTRS-R), data were available for 80 referred children with ADHD, 45 referred comparison children, 71 friends of children with ADHD, and 44 friends of comparison children.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 2

Descriptive Statistics for Demographic Data of the Time 2 sample: Means and SDs (in parentheses)

	Child ADHD (n = 68)	Child control (n = 44)	Friend of ADHD (n = 68)	Friend of Control (n = 44)	<i>F or χ^2</i> (3, 224) ^a	Effect sizes ^b
Age (years)	10.27 (1.8)	10.37 (1.73)	10.29 (2.15)	10.26 (1.7)	0.04	0.00
Grade (years)	4.29 (1.88)	4.23 (1.85)	4.27 (1.98)	4.36 (1.79)	0.41	0.00
Children's sex (% boys)	78.00	73.00	75.00	68.00	<i>1.39</i>	0.79
Language of instruction (% French)	81.00	95.00	90.00	93.00	<i>7.17</i>	0.18
Two-parent household (%)	73.00 _a	93.00 _b	75.00 _a	93.00 _b	<i>12.83**</i>	0.24
Median annual family income (000s)	80.71 (16.52)	79.43 (15.41)	84.20 (19.31)	79.46 (15.46)	1.03	0.14
Cross-gender friendships (%)	6.00	4.54	6.00	4.54	<i>0.19</i>	0.29
Months between Time 1 & Time 2	8.00	7.40	8.00	7.40	1.01	0.14

Note.

Entries with different subscripts differ significantly.

^a One-way ANOVA for continuous variables; Pearson chi-square statistic (in italics) for categorical variables.

^b Effect size type: Partial η^2 for continuous variables; Cramer's V for categorical variables.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 3

Descriptive Statistics for Friendship Nominations: Means and SDs (in parentheses)

	Child ADHD (n = 68)	Child control (n = 44)	Friend of ADHD (n = 68)	Friend of Control (n = 44)	<i>F or χ^2</i> (3, 224) ^a	Effect sizes ^b
Same friend at Time 2 (%)	95.00	98.00	95.00	98.00	<i>0.71</i>	0.56
Number of friends listed (Time 1)	6.20 (2.14)	6.86 (1.86)	6.67 (2.08)	6.56 (2.10)	1.05	0.01
Number of friends listed (Time 2)	6.17 (2.31)	7.13 (1.69)	6.88 (2.06)	7.14 (1.69)	2.69	0.35
Friend as a best friend Time 1 (%)	85.00	89.00	80.00	84.00	<i>1.37</i>	0.78
Friend as a best friend Time 2 (%)	84.00	86.00	73.00	82.00	<i>3.62</i>	0.13

Note.^a One-way ANOVA for continuous variables; Pearson chi-square statistic (in italics) for categorical variables.^b Effect size type: Partial η^2 for continuous variables; Cramer's V for categorical variables.* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4

Information collected at the two phases of the project.

	Time 1	Time 2
ADHD status	X	
Medication status	X	
Demographic data	X	
Friendship nominations	X	X
Friendship Quality Measure	X	X
Game planning task	X	X
Card sharing task	X	X
Car race task	X	X

Table 5

Definitions of Car-Race Task Categories

Adapted from “Continuities and changes in the friendships of children with and without Attention Deficit/Hyperactivity Disorder: A longitudinal, observational study” by Normand, S., Schneider, B., Lee, M., Maisonneuve, M.-F., Chupetlovska-Anastasova, A., Kuehn, S. Robaey, P., 2013, *Journal of Abnormal Child Psychology*, 41, 1161-1175.

Category (kappa)	Definition (Intra-class correlation: T1, T2)
Compliance with rules	
Legal maneuvers (0.87)	Legal maneuvers include the following: avoiding contact with partner’s car legally (e.g., pulling one’s car backwards; waiting for partner before entering the runway); making contact with partner’s car without breaking any rules; proper positioning of car and blocks during loading and unloading. (0.29, 0.30)
Illegal maneuvers (0.82)	Illegal maneuvers include the following: avoiding contact with partner’s car by breaking the rules (e.g., lifting one’s car in the air); making contact with partner’s car while one’s own car is in an illegal position (e.g., driving up the sides of the runway); infraction of rules during loading or unloading. (0.15, 0.06)
Affect	
Positive (0.80)	The extent to which members of the dyad express nonverbal and verbal positive affect, including positive facial expressions and laughter. 1 to 3 rating [1 = the child is smiling for most of the segment; 3 = the child is thoroughly positive with extended bouts of giggling or laughter] (0.57, 0.48)

Negative (0.81)	The extent to which partners express negativity toward one another or toward the task in terms of their facial affect and speech. This includes orders, threats, reprimands, visible tension, and nervousness. 1 to 3 rating [1 = the child is complaining or exhibiting some frustration toward the friend or task; 3= the child is expressing extensive negative affect vocally or physically at any point in the segment](0.05, 0.04)
Neutral (0.88)	The extent to which partners manifest neutral affect for most of the segment. (0.57, 0.55)

Table 6

Definitions of Negotiation Categories for Card-Sharing and Game-Choice Tasks

Adapted from “Continuities and changes in the friendships of children with and without Attention Deficit/Hyperactivity Disorder: A longitudinal, observational study” by Normand, S., Schneider, B., Lee, M., Maisonneuve, M.-F., Chupetlovska-Anastasova, A., Kuehn, S. Robaey, P., 2013, *Journal of Abnormal Child Psychology*, 41, 1161-1175.

Category (kappa: Card-Sharing/ Game Choice)	Definition (Intra-class correlation: T1, T2)
Proposals	
Self/Other interest-based (0.96/n.a)	The extent to which a proposal made by a child favors himself/herself or his/her friend in terms of the number of cards negotiated during this specific proposal. -1 to 1 rating [-1 = self-centered proposal; 0 = neutral proposal; 1=altruistic proposal] (0.45/n.a.; 0.22/n.a.)
Sensitivity (0.79/0.81)	The extent to which a proposal made by a child acknowledges and responds to his/her friend’s social cues, needs, and preferences. -1 to 1 rating [-1 = insensitive proposal; 0 = new proposal; 1 = sensitive proposal] (0.64/0.57; 0.28/0.12)
Preference	
Expression (0.86/0.79)	Disclosure of personal preferences about the outcome of the negotiations. (0.62/0.43; 0.21/0.38)
Inquiry (0.83/0.89)	Inquiry about friend’s personal preferences regarding the outcome of the negotiations. (0.18/0.17; 0.01/0.09)

 Responses

Acceptance (0.77/0.89)	Unqualified acceptance of a proposal. (0.25/0.46; 0.20/0.16)
Refusal (0.80/0.77)	Total rejection of a proposal. (0.47/0.19; 0.36/0.20)
Balance of power ^a (0.83/n.a.)	The degree to which one partner in the dyad possesses more influence or control during the interaction than the other. Indications of controlling behaviours include choice of cards, speech turn-taking, and leader/monitor roles. 0 to 1 rating [0 = equal balance between the children; 1 = unequal balance between the children] (n.a. /n.a.)

Affect

Positive (0.78/0.77)	The extent to which members of the dyad express nonverbal and verbal positive affect, including positive facial expressions and laughter. 1 to 3 rating [1 = the child is smiling for most of the segment; 3 = the child is thoroughly positive with extended bouts of giggling or laughter] (0.70/0.62; 0.62/0.96)
Negative (0.80/1.00)	The extent to which partners express negativity toward one another or toward the task in their facial affect and speech. Includes orders, threats, reprimands, visible tension and nervousness. 1-3 rating [1 = the child is complaining or exhibiting some frustration toward the friend or task; 3 = extensive negative affect expressed vocally or physically at any point in the segment] (0.84/0.45; 0.12/n.a.)
Neutral (0.95/0.95)	The extent to which partners manifest neutral affect for most of the segment. (0.93/0.73; 0.88/0.86)

Note.

n.a. = Not applicable.

^aThe coding produced one score per dyad for this category.

Table 7

Inter-rater reliability for Car Race, Card-Sharing and Game-Choice Tasks

Adapted from “Continuities and changes in the friendships of children with and without Attention Deficit/Hyperactivity Disorder: A longitudinal, observational study” by Normand, S., Schneider, B., Lee, M., Maisonneuve, M.-F., Chupetlovska-Anastasova, A., Kuehn, S. Robaey, P., 2013, *Journal of Abnormal Child Psychology*, 41, 1161-1175.

Inter-rater reliability (kappa):	T1/T1	T1/T2	T2/T2
Category Car-race			
Compliance with rules			
Legal maneuvers	0.87	0.80	0.80
Illegal maneuvers	0.82	0.78	0.76
Affect			
Positive	0.80	0.79	0.88
Negative	0.81	0.84	0.84
Neutral	0.88	0.79	0.85
Category Card-Sharing/Game Choice			
Proposals			
Self/Other interest-based	0.96	0.80	0.87
Sensitivity	0.79	0.79	0.85

Preference

Expression	0.86	0.85	0.85
Inquiry	0.83	0.80	0.80

Responses

Acceptance	0.77	0.81	0.72
Refusal	0.80	0.81	0.81

Balance of power^a

0.83	0.74	0.97
------	------	------

Affect

Positive	0.78	0.81	0.87
Negative	0.80	0.76	0.87
Neutral	0.95	0.84	0.88

Note.

n.a. = Not applicable.

^aThe coding produced one score per dyad for this category.

T1/T1=Inter-rater reliability at Time 1; T1/T2=Inter-rater reliability between Time 1 and Time 2 coders; T2=Inter-rater reliability at Time 2.

Table 8

Factor Loadings for the Friendship Qualities Measure

Adapted from "How do children with ADHD (mis)manage their real-life dyadic friendships? A multi-method investigation" by Normand, S., 2011, Doctoral dissertation. Retrieved from UOTTAWA DSPACE. (Identifier: <http://hdl.handle.net/10393/20139>)

Subscale	Factor	
	Negative	Positive
Conflict (invited friend)	.76	-.18
Overt aggression towards friends	.70	-.12
Relational aggression towards friends	.69	-.05
Conflict (referred child)	.65	-.32
Overt aggression towards others	.65	-.02
Relational aggression towards others	.54	-.02
Friend's demands for exclusivity	.48	-.09
Referred child's desire for exclusivity	.34	.02
Validation and caring	-.14	.79
Intimate exchange (invited friend)	-.11	.77
Intimate exchange (referred child)	-.15	.74
Help and guidance	.06	.68
Companionship and recreation	-.02	.62
Conflict resolution	-.33	.41

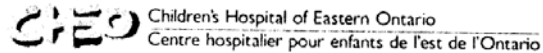
Note.

Bold typeface denotes primary loading.

Appendices

Appendix 1

/



- **Title of Study:** Children's Attention and the Challenges of Close Friendship

- **Why are we doing this study?**

We are doing a research study about how children your age get along with their friends. A research study is a project used to learn things and a report about what we have learned. We would like you and a good friend of yours to participate. This study is about the ways kids do things with their friends. Some of the things we want to find out are: 1) How well do the kids in the study pay attention to what their friends want?; 2) How do the friends plan what they want to do?; 3) How do the friends solve problems together?; 4) How well do the friends play together?; 5) How long do the kids in the study stay friends; 6) How do they decide whether or not to stay friends?

- **What if I have questions?**

You can ask questions if you do not understand any part of the study. If you have questions later that you don't think of now, you can talk to me again or you can call the Study Coordinator, Sébastien Normand, at the University of Ottawa, 562-5800 ext. 3582.

- **If I am in the study what will I be asked to do?**

If you decide that you want to be part of this study, you will be asked to come to the University of Ottawa with your friend once every six months for the next two years. We will ask you and your friend to play different games, discuss your plans and solve some problems. We will ask both of you to answer some questions about your friendship. Each session will last 60 minutes.

We will also be getting some information about you from your teachers about your behaviour at school and your abilities. We will also ask you to answer some questions that help us understand your thinking abilities. We will also ask your parents to tell us a bit about your behaviour.

Both you and your friend will receive 20\$ for any session you choose to participate in.

- **Will the study help me?**

If you are in the study it may not benefit you in any way. However, the study will help us to understand how children make and keep friends. The information you



give us will help us learn how to help kids who are having trouble making and keeping friends.

▪ **Will being in the study cause any problems for me?**

There should not be any big problems and we hope that the friends who are helping us with this study enjoy the games and discussions. However, this does take some time. Also, you might be a little bit uncomfortable when you tell us some personal information about your friendship.

▪ **Do I have to be in this study?**

You do not have to be in this study if you do not want to be. If you decide that you don't want to be in the study after we begin, that's OK too. Nobody will be angry or upset. We are telling your parents about the study and you should talk to them about it too.

▪ **Who will know about the things my friend and I tell you?**

The information collected about you during this study will be kept safely locked up, and nobody will know who you are except the people doing the research. If we write an article about what we learn from the study, we will not use your name.

▪ **What happens after the study?**

When we are finished this study we will write a report about what was learned. This report will not include your name or that you were in the study.

You will be given a copy of this form to keep for yourself. If you decide to be in the study, please sign your name below.

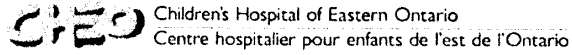
Participant's Signature

Date

Researcher's Signature

Date

Appendix 2



CHILDREN'S ATTENTION AND THE CHALLENGES OF CLOSE FRIENDSHIP

Confirmation of the honorarium received by the participants

I confirm that _____ & _____ have received \$20 for having participated in this research session.

Parent's name : _____ Date: _____

Parent's signature: _____

Researcher : _____ Date: _____

Researcher's signature: _____

Appendix 3

Child's Name: _____ Today's Date: _____

Date of Birth: _____

Gender: Male Female Age : _____ Grade : _____

School name: _____

Teacher's full name: _____

Language of instruction: French

English

Is your child usually on medication? Yes No

If yes, what is the name of the medication : _____

In what dosage : _____

Did your child take his medication today? Yes No

If yes, at what time : _____

Biological parents living with the child: Two-parent

Single parent

Occupations: Father : _____

Mother : _____

☺ THANK YOU FOR YOUR PARTICIPATION! ☺

Appendix 4

Your Name: _____

Date: _____ Session #: _____

General Instructions: Please write the name of your friends. For each friend, put down how long you have been friends, and whether or not this is your best friend in the whole world. We will not tell anybody your answers.

Friend's Name	How long have you been friends?	Is this your best friend in the whole world? (circle only one)
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

Where did you meet each other ?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Appendix 5

FQM
v. Grotmeter & Crick, 1996

Name: _____

Date: _____ Session #: _____

THINGS I DO WITH MY FRIEND

I'm going to read you some sentences about friendships. Please put an "X" in the box that tells how true each sentence is about your friendship with _____.

Examples:

A. I like to play kickball with my friend.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

B. My friend and I both like to clean our rooms.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

1. My friend gives me advice with figuring things out.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

2. My friend ignores me when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

3. It is easy to make up quickly with my friend if we have a fight.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

FQM
v. Grottpeter & Crick, 1996

4. I can tell my friend about my problems.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

5. I feel jealous if I see my friend playing with another kid.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

6. My friend hits and kicks me when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

7. My friend can tell me his/her secrets.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

8. My friend makes me feel important and special.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

9. I get mad at my friend a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

10. When my friend and I don't like someone, we won't let them play with us.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

FQM
v. Grottpeter & Crick, 1996

11. My friend and I threaten to beat others up if they don't do what we tell them to do.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

12. My friend would rather play alone with me, and not with other kids.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

13. My friend does fun things with me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

14. My friend gets mad at me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

15. My friend shares things (like CDs or games) with me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

16. My friend tells my secrets to other kids when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

17. It is easy to get over arguments with my friend.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

18. I can tell my friend my secrets.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

FQM
v. Grotmeter & Crick, 1996

19. It's OK with me if my friend plays with other kids when I am busy.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

20. My friend says he/she will beat me up unless I do what he/she says.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

21. My friend can talk with me about the things that make him/her sad.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

22. My friend tells me I am good at things.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

23. I disagree with my friend a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

24. When my friend and I are mad at someone, we ignore them or don't talk to them.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

25. My friend and I hit and kick others we are mad at.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

FQM
v. Grotmeter & Crick, 1996

26. My friend gets jealous if he/she sees me playing with another kid.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

27. My friend plays with me at recess.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

28. My friend gets annoyed with me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

29. My friend tells me he/she won't like me anymore unless I do what he/she says.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

30. My friend does special favors for me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

31. My friend pushes and shoves me when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

32. When one of us hears a rumor about someone we don't like, we tell each other and pass it on.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

33. I can talk with my friend about the things that make me sad.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

FQM
v. Grotmeter & Crick, 1996

34. It's OK with my friend if I play with other kids when he/she is busy.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

35. It is easy to talk with my friend about how to get over being mad at each other.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

36. My friend and I push and shove others when we are mad at them.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

37. My friend can tell me about his/her problems.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

38. My friend annoys me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

39. My friend says he's/she's sorry if he/she hurts my feelings.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

40. My friend won't let me play with him/her and his/her other friends when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

FQM
v. Grotmeter & Crick, 1996

41. I would rather play alone with my friend, and not other kids, too.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

42. My friend disagrees with me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

43. My friend picks me as partners for things.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	---------------------	-------------------	-----------------------	----------------

44. How is this friendship going?

It's Going Really Badly	It's Going Kind of Badly	It's Going OK	It's Going Pretty Well	It's Going Really Well
-------------------------------	--------------------------------	------------------	------------------------------	------------------------------

45. How happy are you with this friendship?

Very Unhappy	A Little Unhappy	Not Really Happy Or Unhappy	Kind of Happy	Very Happy
-----------------	---------------------	-----------------------------------	------------------	---------------