THE ASSOCIATION BETWEEN CHILDREN’S TEMPERAMENT, SOCIAL GOAL ORIENTATION, SOCIAL BEHAVIOR, AND SOCIAL STATUS: A TWO-STUDY EXAMINATION

by

ELISABETH ANNE QUINTRELL

(Under the Direction of A. Michele Lease)

ABSTRACT

Study 1:

Some children who are rejected withdraw, whereas other children aggress towards their peers or display other disrupting externalizing behaviors (Rose-Krasnor, 2014 for review). Research has established that these two behaviors are associated with peer rejection; thus, understanding risk factors to these behavioral outcomes is beneficial for developing peer rejection interventions. Research suggests that both temperament and social goals are risk factors for these problem social behaviors (Rubin et al, 1990; Ojanen et al, 2014). Our study sought to determine whether temperament and social goals are predictive of these social behaviors and, whether including both temperament and social goals in analyses aids in predicting the specific type of aggressive behavior. Our results indicated that proactive and reactive aggression and social withdrawal can be predicted by temperament and social goals. Both social goal orientations and temperament aided in predicting which type of social aggression was exhibited: instrumental social goals were a significant predictor of proactive aggression, while affective/
instrumental social goals were not significant predictors of reactive aggression. Lastly, negative affect (chained with high impulsivity) acted as a general risk factor for all problem outcome behaviors.

Study 2:

Studies suggest that the pathway to peer acceptance and/or peer rejection includes multiple factors, including personality/temperamental traits and skilled social behavior (Panak & Garber, 1992; Asher & Coie, 1990). One factor that influences the production of skilled behavior is a child’s social goals, which, in turn, affect the pathway to social acceptance. The present study sought to determine whether social goals moderate the relationship between temperamental traits and social preference in a sample that included children in late childhood. We found that instrumental social goals did not have a significant moderating effect on the relationship between temperamental traits and social acceptance. However, affective social goals were significant moderators for certain temperamental traits. Higher affective social goals moderated the relationship between low inhibition and social preference positively. The relationships between high inhibition and social preference and negative affect and social preference were moderated negatively by affective social goals. Implications for social goal intervention implementation within programs like SEL and PBIS are discussed.

INDEX WORDS: Social Goals; Social Behavior; Temperament; Social Status; Proactive Aggression; Reactive Aggression; Social Withdrawal
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CHAPTER 1
DISsertation Introduction

As children move from late childhood to early adolescence their social interactions increase in frequency, importance, and complexity (Harris, 1995; Furman & Buhrmester 1992). Peer aggression and bullying also increase at this important point in development (Bjorkqvist, Lagerspetz, Kaukainen, 1992). Furthermore, links have been observed between aggressive behavior in childhood and the subsequent development of psychopathology (Coie et al, 1992; Cole et al. 2010; Rigby, 2002; Hawker & Boulton, 2000). To date, there is an abundance of research correlating factors like social status (i.e., popular, rejected, well-liked children) and gender to social behavior (i.e., aggression, prosocial behavior, etc.) (Vaillancourt & Hymel, 2006; Quintrell et al, in press; Rose et al, 2004; Andreou, 2006; Card et al, 2008; Rodkin et al, 200; etc.), but research that examines explanatory factors for why children and adolescents behave certain ways in the social setting is much less common. Some potential explanatory factors worth examining include temperament traits and social goals/motivations.

Research in childhood temperament traits has gained significant ground in the last few decades but has its roots in personality psychology, which has a much longer history. In the 1930’s, psychologists in Germany (Baumgarten) and the United States (Allport and Odbert) began to look closely at language, specifically, descriptions of personality, to create a scientific taxonomy. Allport and Odbert (1936) went through the entirety of Webster’s New International Dictionary (1925) to extract all personality-relevant terms, which totaled to a list of 18,000. From these 18,000 terms, they identified four major categories (Pervin & John, 1999).
In 1943, Raymond Cattell used the Allport and Odbert list as a catalyst for his multidimensional model of personality structure. Using factor analysis, Cattell reduced the trait list from thousands to create his 16 Personality Factors (16PF) Questionnaire (Cattell, Eber, Tatsuoka, 1970). Fiske (1949) and Tupes and Christal (1961) were able to reanalyze Cattell’s variables to find five factors, which reliably reoccurred and were replicated by researchers for the next 20-30 years. This five-factor structure is known today as the Big Five or Five Factor Model (FFM) and includes extraversion/surgency, agreeableness, conscientiousness, emotional stability/neuroticism, and intellect/openness (Goldberg, 1981).

By the mid 20th century, some personality researchers began to shift their focus from adults to children. In 1970, *Scientific American* published “The Origin of Personality” by Alexander Thomas, Stella Chess, and Herbert Birch, based on Thomas and Chess’ research in the New York Longitudinal Study. This study began in the late 1950s and followed 140 children from birth to adolescence. They sought to answer basic questions of human development such as whether or not children have innate personalities. Thomas and Chess found that there were nine stable characteristics (activity level rhythmicity, distractibility, approach withdrawal, adaptability, attention span and persistence, intensity of reaction, threshold of responsiveness, and quality of mood), which could be scored on a three-point scale (low, medium, high). The ratings on these characteristics then define a child’s temperament, which is easily detected within the first several months of life. They soon began to notice that several “temperament types” emerged. These were coined as “easy children” (a compilation of positive mood, regular bodily functions, low intensity of reaction, and adaptability), “difficult children” (irregular bodily functions, intense reactions, withdrawal from new situations, and negative mood), and “slow to warm up” (generally low activity level, withdrawal from new stimuli, somewhat negative in
mood). Thomas and Chess reported that 42 out of the original sample of 141 developed significant behavioral problems, and of those 42 children, most had been classified as “difficult” and the remainder as “slow to warm up.” These results offered a new perspective on the continuity of personality, the predictive validity of temperament, and the long-lasting effects of early childhood (Thomas & Thomas, 1970; Caspi 2000).

While the FFM has strong validity, particularly for research on adult populations (Van der Linden et al, 2010; Asendorpf & Van Aken, 2003; John & Srivastava, 1999), another school of thought has reduced the factors further to a two-factor model of temperament. This is based on Jeffrey Gray’s conceptual framework, which suggests that there are two major brain systems that form the foundation of temperament and thus personality: The behavioral inhibition system (BIS), which involves responses to punishment, and the behavioral activation system (BAS) which involves responses to rewards. The thought is that these two systems are independent. Individuals who have more sensitive BIS and BAS systems likely learn the cues of reward and/or punishment more quickly. The theory suggests that children who are high on BIS typically withdraw and are more likely to physically withdrawal and become difficult to soothe in unfamiliar settings. BAS on the other hand involves high activity level and lack of task persistence (Gray 1972, 1981; Compas et al, 2004; Deal et al, 2005; Martin & Bridger, 1999).

Like personality and temperamental traits, research in social goals attempts to answer questions about why people behave the way that they do. Goals are typically defined as internal representations of desired states (Austin & Vancouver, 1996). Research on children’s social goals and motivations centers around a few leading concepts: approach vs. avoidance goals, affective/communal vs. instrumental/agentic, and the Interpersonal Circumplex Model (agency vs. submission vs. communion) (Rodkin et al, 2013; Buhrmester, 1996; Baumeister & Leary,
Social influence strategies are closely related, as they are the means to carrying out an individual’s goals. These range from prosocial strategies to a myriad of aggressive strategies. In general, research suggests that aggressive strategies are related to goals of agency, power, and dominance, while goals of communion are related to prosocial strategies (Ojanen et al, 2005; Rudolph et al, 2011).

The first study of this two-study dissertation investigates the relationship between temperament, social goal orientation, and proactive/reactive aggression and social withdrawal. Previous research suggests that temperament effects the way a child interacts with the social environment, for example, whether they make risky choices, or attempt to disengage from dangerous situations (Bell, 1974). The purpose of the current study is to build upon past research in this area to determine whether temperament and social goals are predictive of these problematic social behaviors, and whether proactive and reactive aggression are distinguishable by social goals and temperamental traits.

The focus of the second study is to examine if the relationship between temperament and social preference is moderated by social goals. Previous research suggests that there is a relationship between social preference and social goal orientation (Chung and Asher 1996; Ojanen et al, 2005; Renshaw & Asher, 1982; Lochman et al, 1993). Research also suggests that temperament may affect a child’s social competence, which in turn is related to social preference (Eisenberg et al 1993). Specifically, high negative emotionality, low self-regulation, and high reactivity are related to poor social skills (Sanson et al, 1996; Eisenberg et al, 1993). In this study, we seek to determine how/if a child’s social goal orientation moderates the relationship between temperamental traits and social preference.
CHAPTER 2

THE PATHWAY FROM TEMPERAMENT AND SOCIAL GOALS TO SOCIAL WITHDRAWAL AND PROACTIVE/REACTIVE AGGRESSION

Social development researchers have found correlations between peer rejection and numerous maladjustment outcomes. Among these are anxiety and depression (Pedersen et al, 2007; Bagwell et al 1998; Gazelle & Ladd, 2003), suicidal ideation (Prinstein et al, 2000), and academic difficulties and delinquency (Ladd 1990; Coie 199; Kupersmidt, et al 1990; Parker & Asher, 1987). Some children who are rejected withdraw socially, whereas other children who are rejected aggress towards their peers or display other disrupting externalizing behaviors (Rubin, Hymel, Mills, & Rose-Krasnor, 2014 for review). Research has established that these two behaviors (social aggression and withdrawal) are associated with peer rejection; thus, understanding precursors and risk factors to these behavioral outcomes is beneficial for developing peer rejection interventions.

One avenue to developing interventions focuses on the intentions underlying the expressed behavior by examining social goals and motivations. Past studies suggest that communal goals are positively correlated to prosocial behavior, and negatively associated with withdrawal and aggression, whereas agentic/dominance oriented goals are associated with aggression (Ojanen et al, 2005; Crick 199, Sijtsema et al, 2009; Jarvinen & Nicholls, 1996; Salmivalli et al, 2005; Erdley & Asher, 1996). Researching social goals and the role they have on behavior is important, because recently there have been promising reports of social
interventions centered around changing children’s social goals to, in turn, positively affect their social behavior (Garandeau, Lee & Salmivalli, 2014; Frey et al, 2005; Atria & Spiel, 2007).

In order to develop peer rejection interventions, it is necessary to identify risk factors for that rejection. Research has shown that, in addition to social goals, there are emerging linkages in the literature between internalizing and externalizing behavior to specific temperament risk factors (Rothbart, Ahadi, & Evans, 2000; Rubin et al, 2002; Blair et al, 2004; Caspi et al, 1995; Rothbart et al, 1994). For example, research suggests that certain temperamental traits are risk factors for problem social behaviors (i.e., withdrawal and aggression), which often lead to peer rejection and in serious cases are associated with or are symptomatic of psychopathology (Gray 1982; Barkley 1997; Quay 1988; Johnson et al, 2003 and Muris et al, 2005 for reviews). Studies by Deal, Halverson, Havil, and Martin (2005) and Rothbart et al (2001) suggest that the temperamental trait of inhibition (BIS) predicts social withdrawal, whereas impulsivity (BAS) and negative affect predict aggression. BIS and BAS also are risk factors for various psychiatric disorders (Barkley 1997; Johnson et al, 2003; Muris et al, 2005). The current study seeks to determine if children’s social goals and temperamental risk factors are predictive of social withdrawal and reactive/proactive aggression.

**Social Goals**

Understanding children’s social motivations is a vital step to developing useful interventions targeting problem behavior. Previous research suggests that children have different social motivations/goals that affect the way in which they navigate the social world (Jarvinen & Nicholls, 1996; Lochman et al, 1993; Erdley et al, 1997; Ojanen et al, 2005). These social goals vary from goals of dominance, power, and influence to goals of communion, intimacy, and relationship maintenance (Caravita & Cillessen, 2012; Ojanen et al, 2005; Salmivalli et al, 2005).
There are also goals oriented towards approaching social situations and gaining skills and friends versus avoiding social interactions and embarrassment (Gable et al, 2006; Ryan & Shim, 2006; Elliot & Thrash, 2002). Previous research suggests that goals of dominance and power are related to above average rates of aggressive behavior, whereas goals of communion and intimacy are related to above average rates of prosocial behavior (Ojanen et al, 2005; Salmivalli et al, 2005). Recently researchers have based social interventions in elementary and middle schools on changing social goals in order to decrease aggressive behavior (Garandeau, Lee & Salmivalli, 2014; Frey et al, 2005; Atria & Spiel, 2007).

There are various goal/motivation theories present in the literature; however, we have chosen to use the instrumental/affective model. Our study utilizes this theory of social goals due to its connection to aggressive behavior (Hawley et al, 2002; Kwon & Lease, 2007), as well as its relation to other well-established measures of social goals (i.e., communion vs. dominance, relationship maintenance vs. instrumental, etc.) (Erdley & Asher, 1996; Jarvinen & Nicholls, 1996; Ojanen et al 2005, Salmivalli et al 2005). This view of social goals is based on the value put on social relationships and friendship. In this model, affective goals motivate a person to engage in relationships for intimacy, companionship, and trust, whereas instrumental goals motivate one to engage in relationships for extrinsic reasons and for what they can “buy you” (Hawley et al, 2002).

**Temperament**

There are clear linkages of temperament to basic motivation and attention systems (Rothbart et al, 2000; Elliot & Thrash, 2002; Zentner & Bates, 2008; Derryberry & Rothbart, 1988). Gray’s theory of behavioral inhibition and behavioral activation is one such model. His conceptual framework suggests that there are two major brain systems that form the foundation
of temperament and, thus, personality: The behavioral inhibition system (BIS) and the behavioral activation system (BAS). The prevailing thought is that these two systems are independent. The BIS system regulates the experience of anxiety-relevant cues and is sensitive to punishment and novelty. The BAS system, on the other hand, is sensitive to reward (Carver & White, 1994). The theory suggests that children who are high on BIS typically withdraw and may become upset in novel situations, and those high on BAS are more likely to be impulsive, have high activity level, lack task persistence, and display negative emotions and frustration when there are obstructions to reward (Gray 1972, 1981).

The predictive utility of these basic temperamental traits has recently been illuminated in studies of psychopathology. Research in childhood psychopathology often focuses on two types of problem outcomes: externalizing and internalizing problems (Achenbach & Edelbrock, 1978; Farmer et al, 2002; Crijen, Achenbach, Verhulst, 1997). This same research, in turn, has found two major risk factors for these general problem outcomes: impulsivity (BAS) and inhibition (BIS) (Johnson et al, 2003 and Muris et al, 2005 for reviews). Some researchers theorize that deficits in behavioral inhibition puts some at risk for ADHD (Barkley 1997, Quay, 1988) and psychopathy (Fowles 1980), whereas high levels of BIS are related to anxiety (Gray 1982) and depression (Johnson et al, 2003). High BAS has been found to be related to conduct disorder and antisocial personality disorder (Quay, 1993) and drug/alcohol abuse (Johnson et al, 2003), whereas low levels of BAS are related to depression (Johnson et al, 2003 and Muris et al, 2005 for reviews).

Similar to the connection between BIS/BAS and psychopathology, previous research has demonstrated links between traditional temperament traits (i.e., inhibition, sociability, negative emotionality, impulsivity, etc.), social behavior, and maladjustment. With regard to internalizing
problems, research has shown that adolescents who were classified as inhibited during
toddlerhood were much more likely to have symptoms of social anxiety than those who were
classified as outgoing (Schwartz, Snidman & Kagan, 1999). More generally, preschool inhibition
has been shown to predict internalizing behavior problems later in childhood (Sanson et al, 2004
for review). Low sociability in 15 year olds was found to predict depression for males at 20 years
of age; The same was found for females; however, for women this relationship was moderated
by social support. (Katainen et al, 1999). Furthermore, negative emotionality has been shown to
be a risk factor for depression for both genders (Windle, 1992).

Research on externalizing behavior in early childhood suggests that negative affectivity,
emotionality, and impulsivity in toddlerhood are related to externalizing behavior problems in
preschool (Hagekull, 1994), and negative affectivity and surgency in early childhood have been
shown to relate to aggressive behavior in 6 and 7-year-old children (Rothbart, Ahadi, & Hershey,
1994). Furthermore, there is evidence to suggest that early inhibition may serve as a protective
factor against externalizing behavior problems in childhood and adolescence (Schwartz et al,
1999; Sanson et al, 1996; Sanson et al, 2004 for review). This possible protective relationship
between inhibition and externalizing behavior is important to investigate, given the connection
between peer rejection and other forms of maladjustment to externalizing and internalizing
behavior problems in childhood and adolescence (Bagwell et al 1998; Prinstein et al, 2000; Ladd

Social Behavior

As noted previously, social aggression and withdrawal are associated with peer rejection
and, in extreme cases, psychopathologies, such as depression, anxiety, suicide, etc. (Parker &
Asher, 1987; Hymel, Rubin, Rowden, & LeMare, 1990; Ladd & Troop-Gordon, 2003; DeRosier
However, there are several different types of aggressive behavior, which are associated with differing types of risk profiles. Thus, a discussion on the different forms and functions of aggressive behavior follows. With regards to form, direct/overt/physical aggression characterizes outward, obvious, instances such as a child pushing another child in the hallway. Indirect/reputational/relational refers to less direct forms, for example, rumor starting and refusing to allow a classmate to take part in a group activity. Verbal aggression refers to name-calling and teasing (Xie et al, 2003; Prinstein & Cillessen, 2003; Card et al, 2008). The current study employs a mix of overt and indirect/relational, as well as reactive, peer nominated aggression measures.

Not only can the form of aggressive behavior vary by situation, the function can vary as well. Reactive aggression can be predicted by negative emotionality (Vitaro et al, 2006; Fite et al, 2009), is often related to a hostile attribution bias or a perceived threat, and is correlated to attention deficits/impulsivity (Dodge et al, 1997) and self-regulation difficulties (Ojanen & Kiefer, 2013), as well as peer victimization and depression (Sijtsema et al., 2009; Crick & Dodge, 2009; Poulin & Boivin, 2000; Prinstein & Cillesson, 2003). If the behavior is not explicitly in reaction to anything, but is used to gain some tangible outcome, then it typically is classified as proactive aggression (Dodge, 1991b). Proactive aggression is typically employed as a strategy to gain social resources or dominate/intimidate a peer (Dodge & Coie, 1987; Poulin & Boivin, 2000, Ojanen & Kiefer, 2013), can be associated with high peer status (Schwartz, 1999; Poulin & Boivin, 2000), social preference (Prinstein & Cillesson, 2003), humor (Poulin & Boivin, 2000), and can be predicted by negative emotionality (Ahadi & Rothbart, 1994; Rothbart et al, 2001). Unlike reactive aggression, children in the same peer groups and who are socially tied to one another typically exhibit similar levels of proactive aggression (Crick & Grotpeter,
While reactive aggression remains more constant across childhood and adolescence, proactive instrumental/relational aggression increases throughout development (Ojanen and Kiefer, 2013). The current study examines proactive and reactive aggression separately as they likely have differing associations with temperamental traits and social goals.

We chose to examine the relationship between goals, temperament, and social withdrawal in addition to aggression. Social withdrawal is a strong correlate of peer rejection during middle childhood and adolescence (Deater & Deckhard, 2001; Boivin & Hymel, 1995; Rubin et al, 1990; Parker & Asher, 1987), so understanding this relationship has important applications. Research in this area is somewhat sparse, but there appears to be an interesting relationship between withdrawal and social goals, as studies in this area are somewhat conflicting. Rubin et al (2009) found that withdrawn children were less likely to meet their social goals than were less withdrawn peers. On the other hand, several studies have found that withdrawal is associated with low levels of both communal and agentic goals (Ojanen et al, 2005; Salmivalli et al, 2005). Our thoughts are that this relationship is more complicated than these studies have demonstrated. In fact, Salmivalli et al (2005) found that for boys, lack of communal (affective) goals did not contribute to withdrawal. Social withdrawal is also tied to negative emotionality, in that negative emotionality is closely connected to emotion dysregulation. Emotion dysregulation refers to a child’s inability to control their emotional responses and is a risk factor for social withdrawal (Eisenberg et al, 2000; Eisenberg et al, 2001). In this way, while a direct link between negative emotionality and social withdrawal has not been explicitly reported, previous research suggests some type of relationship between the two, possibly mediated by emotion dysregulation. Thus, perhaps the results of this study will help to determine whether temperament is a better predictor
of withdrawal than are social goals, and whether negative emotionality (i.e., negative affect) can reliably predict social withdrawal.

**Current Study**

As mentioned previously, children who are rejected by peers and those who have some form of psychopathology often demonstrate one of two major types of social problem behaviors: social withdrawal or aggression (Deater-Deckhard, 2001; Boivin & Hymel, 1995; Johnson et al, 2003; Barkley 1997; Quay, 1988; Gray 1982; Kupersmidt & Patterson, 1991; Coie et al, 1992; Boivin & Hymel, 1995; Rubin et al, 1990). Research suggests that both temperament (inhibition, impulsivity, and negative affect) and social goals (instrumental relationship goals) are risk factors for these problem social behaviors (Rubin et al, 1990; Salmivalli et al, 2005; Ojanen et al, 2014; Erdley & Asher, 1996; Rothbart et al, 1994; Eisenberg et al, 2000; Booth-LaForce & Oxford, 2008).

Our study seeks to determine whether temperament and social goals are predictive of these problematic social behaviors. More specifically, does including both temperament and social goals in our analyses aid in predicting the specific type of aggressive behavior (reactive vs. proactive)? Our hypothesis is that negative emotionality (affect) will act as a general predictor of all of the problem outcome behaviors: reactive aggression, proactive aggression, and social withdrawal. In addition, we expect that temperament (i.e., impulsivity and inhibition) and social goals will more specifically differentiate between outcome behaviors. Our hypothesis is that (a) high levels of impulsivity will be related to high levels of reactive aggression, whereas (b) instrumental goals will be positively related and affective goals negatively related to proactive aggression, and lastly (c) high levels of inhibition will be related to social withdrawal.
Methods

PARTICIPANTS
Participants consisted of 473 fourth and fifth grade students (52% girls; mean age= 11.08 years; 58% White, 40% African American/Black, and 2% Other) from 26 classrooms in a school system in the rural southeastern United States. The participating schools averaged 70% free and reduced lunch.

Participation in the study required both parental consent and child assent. Consent forms were sent home with students to their parents in the spring of the school year. Data collection took place during the late spring of the school year. The forms included a designated area to sign granting consent and a place to sign denying consent. The rate of consent for child participation was 88%.

Measures included in this study were peer, teacher, and self-report. Questionnaires were group administered by trained research team-members in two 1-hour sessions, and written items were read aloud to students. All students in the class were given a token gift for their time, whether they participated in the study, or not.

The participants were told that their answers were confidential and were asked to keep their responses to themselves in order to minimize classroom discussion related to the questionnaire. Each participant was given a class roster with a corresponding number for each student to ensure quick and easy nomination. Peer nomination items allowed the participants to nominate three participating classmates for each item, and students were asked to choose the student(s) who best fit the description for the peer-nomination items.
Measures

BEHAVIOR NOMINATIONS

For this study, we used peer nominations items of behavior commonly used in studies of children’s peer relationships, and which have been shown to correlate with teacher nominations (Crick, 1996; Blake et al., 2012; Crick et al., 2006). Peer nominations are useful because peers are able to provide a different and unique perspective into the complex social structure of late childhood and early adolescence. Furthermore, often the social behaviors of interest in this study are not readily detected by teachers and other adults (McEvoy, Estrem, Rodriguez, & Olson, 2003).

Each participant was told that they could nominate up to three participating classmates on these items. The instructions also stated that the students could nominate a peer for more than one item. Peer nomination behavior scores were then standardized by classroom to control for varying numbers of nominators across classrooms (Coie et al, 1982). Items were standardized to a mean of 0 and standard deviation of 1 by classroom. Multiple forms of aggressive behavior tend to fall under the construct of “proactive aggression,” so multiple items were used to measure this, including relational items (“This person tries to keep certain people from being in their group during activities,” “This person says mean things to people, calls names, and teases others in a mean way,” and “Some children tell others that they will stop liking them unless the friends do what they say”) and an overt aggression item (“Somebody who tries to get what he or she wants by hitting, shoving, pushing, or threatening others”). Internal consistency for behavioral items was examined using Cronbach’s alpha. The alpha for proactive aggression was .83. Only one item was used to assess reactive aggression (“Even when others don’t mean to make them mad, this type of person overreacts”) and social withdrawal (“This person looks like her or she
wants to play with others or join in on a game but seems afraid or shy”) and, therefore, internal consistency was not measured.

FRIENDSHIP GOALS (INSTRUMENTAL/AFFECTIVE)

Following earlier research from Hawley, Little, and Pasupathi (2002) a 22-item, 4-point (strongly disagree, disagree, agree, strongly agree), self-report scale was included to assess affective and instrumental friendship goals (i.e., valuing friendship for quality and intimacy vs. for what you can gain from friendships). This scale drew from previous research by Deci and Ryan (1985) and has been widely used and cited by researchers in the social motivation field (i.e., Ojanen et al. 2005, Ojanen et al. 2010, Salmivalli, 2010, etc.) The students were given the following instructions: “Below is a list of reasons kids might have for becoming friends with another kid. I would choose to become friends with…” Children were asked to choose whether they strongly disagreed, disagreed, agreed, or strongly agreed with the statement. Items are listed in Appendix A.

Principal components analysis was used to identify and compute composite scores for the factors underlying the Friendship Goals scale. Initial eigenvalues indicated that two factors would be retained according to the Kaiser and Guttman rule, accounting for a total of 36% of the variance. The first factor, instrumental goals, explained 22% of the total variance, while the second factor, affective goals, explained 16% of the total variance. Internal consistency for each of the factors was examined using Cronbach’s alpha. The alphas were adequate: .78 for instrumental goals (12 items) and .81 for affective goals (10 items). No substantial increases in alpha for any of the scales could have been achieved by eliminating more items.
TEMPERAMENTAL TRAITS: ICID

Temperamental traits were assessed through teacher report using a 61-item version of the Index of Children’s Individual Differences, short form (ICID-S). The ICID-S (50 item short version) was further reduced by Deal, Halverson, Martin, Victor & Baker in 2007, however, that version was unavailable when the data for the current study was collected. Thus, an interim form of the ICID was used containing 61 items. The ICID has been widely cited in temperament research and is based on the five-factor model of personality (Deal et al, 2003; Deal et al, 2007; Zupancic et al, 2004; Grist et al, 2012; Herzoff and Tackett, 2012, etc). The ICID was developed by gathering and analyzing over 50,000 parental descriptors of children from eight different countries (Deal et al, 2003). The scale measures 14 temperament dimensions: intelligence, open/curious, achievement orientation, positive emotionality, considerate-of-others, activity level, negative emotionality, antagonistic, strong-willed, distractibility, disorganized, inhibition, social withdrawal, and insecure/fearful. Following previous work by Ahadi and Rothbart (1994), Rothbart and colleagues (2001), Martin and Bridger (1999), and Deal et al (2005), we chose to examine inhibition, impulsivity, and negative affect (emotionality) domains. Inhibition, impulsivity and negative affect are being widely studied by psychopathology researchers: Impulsivity and inhibition appear to be the primary temperamental risk factors for internalizing and externalizing disorders (Gray 1982; Barkley 1997; Quay 1988; Johnson et al, 2003 and Muris et al, 2005 for reviews), whereas negative affect (or emotionality) appears to operate as a risk factor for psychopathology in general (Muris & Ollendick, 2005; Rothbart, Ahadi, & Hershey, 1994; Leon et al, 1999). Results from a previous study were reviewed to determine which ICID items should be included into each of the three temperament domains (Deal et al, 2007). Specifically, Deal and colleagues examined the ICID domains for correlation with the
Temperament Assessment Battery (TAB-R, Martin and Bridger, 1999) Inhibition and Impulsivity factors. They found that the ICID “Antagonism” domain (“Manipulates to get his/her own way, is stubborn, hard-headed, mean, selfish, uncooperative, forgets things easily and is easily distracted”) correlated strongly with the TAB (.58) Impulsivity scale, thus this domain makes up our Impulsivity (+) or *high impulsivity* factor. The ICID domain “Agreeable” (“Sweet, a joy to be with, friendly, cheerful, sensitive to others’ feelings, affectionate, kind and caring”) was broken up into two domains in the Deal et al (2007) study, “Positive Emotions” and “Considerate,” and was strongly negatively correlated with the TAB Impulsivity (-.42 and -.45) scale. Thus, the “Agreeable” domain comprises our Impulsivity (-) or *low impulsivity* factor. The ICID “Shy” domain (“Lacks confidence, is insecure, has difficulty making friends, is slow to warm up to new people/situations, withdrawn, and fearful”) correlated strongly with the TAB (.68) scale of Inhibition, thus making up our Inhibition (+) or *high inhibition* factor. And lastly, the ICID “Sociability” domain (“Always on the move, energetic, outgoing, sociable, loves to be with other people, and makes friends easily”) on the ICID was strongly negatively correlated with Inhibition on the NEO-FFI and TAB (-.66), thus comprising our Inhibition (-) or *low inhibition* factor.

For our temperament measure, teachers were given the instructions “Please read each statement. Look at the scale and circle the number that corresponds to the degree that you think the statement describes the child in comparison to other children his/her age. 1= much less than the average child or not at all, 2= less than in the average child, 3= slightly less than in the average child, 4= same as in the average child, 5= slightly more than in the average child, 6= more than in the average child, 7= much more than in the average child.” The items are listed in Table 1.1. Internal consistency for each of the factors was examined using Cronbach’s alpha.
Because our scales for inhibition and impulsivity measure both directions of the construct (positive and negative values), the reliability of the scales were below our expectations when including both directions of the construct in one factor. However, when separating inhibition and impulsivity into the positive and negative directions, reliability of the scales improved. Thus, we decided to keep the constructs separate for the remainder of the study. The items measuring negative affect only evaluate the positive direction of the construct, thus it remains one factor.

The analyses resulted in .91 for negative affect (4 items), .92 for Impulsivity (+)/ high impulsivity (9 items), .95 for Impulsivity (-)/ low impulsivity (7 items), .87 for Inhibition (+)/ high inhibition (6 items), and .90 for Inhibition (-)/low inhibition (6 items).
<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Affect</td>
<td>Is quick-tempered</td>
</tr>
<tr>
<td></td>
<td>Gets angry easily</td>
</tr>
<tr>
<td></td>
<td>Is moody</td>
</tr>
<tr>
<td></td>
<td>Is irritable</td>
</tr>
<tr>
<td>Impulsivity (+)</td>
<td>Manipulates to get his/her own way</td>
</tr>
<tr>
<td>high impulsivity</td>
<td>Wants things his/her own way</td>
</tr>
<tr>
<td></td>
<td>Is stubborn</td>
</tr>
<tr>
<td></td>
<td>Is hard-headed</td>
</tr>
<tr>
<td></td>
<td>Is mean</td>
</tr>
<tr>
<td></td>
<td>Is selfish</td>
</tr>
<tr>
<td></td>
<td>Is uncooperative</td>
</tr>
<tr>
<td></td>
<td>Forgets things easily</td>
</tr>
<tr>
<td></td>
<td>Is easily distracted</td>
</tr>
<tr>
<td>Impulsivity (-)</td>
<td>Is sweet</td>
</tr>
<tr>
<td>low impulsivity</td>
<td>Is a joy to be with</td>
</tr>
<tr>
<td></td>
<td>Is friendly</td>
</tr>
<tr>
<td></td>
<td>Is cheerful</td>
</tr>
<tr>
<td></td>
<td>Is sensitive to others’ feelings</td>
</tr>
<tr>
<td></td>
<td>Is affectionate</td>
</tr>
<tr>
<td></td>
<td>Is kind and caring</td>
</tr>
<tr>
<td>Inhibition (+)</td>
<td>Lacks confidence</td>
</tr>
<tr>
<td>high inhibition</td>
<td>Is insecure</td>
</tr>
<tr>
<td></td>
<td>Has difficulty making friends</td>
</tr>
<tr>
<td></td>
<td>Is slow to warm up to new</td>
</tr>
<tr>
<td></td>
<td>people/situations</td>
</tr>
<tr>
<td></td>
<td>Is withdrawn</td>
</tr>
<tr>
<td></td>
<td>Is fearful</td>
</tr>
<tr>
<td>Inhibition (-)</td>
<td>Is always on the move</td>
</tr>
<tr>
<td>low inhibition</td>
<td>Is energetic</td>
</tr>
<tr>
<td></td>
<td>Is outgoing</td>
</tr>
<tr>
<td></td>
<td>Is sociable</td>
</tr>
<tr>
<td></td>
<td>Loves to be with other people</td>
</tr>
<tr>
<td></td>
<td>Makes friends easily</td>
</tr>
</tbody>
</table>
PROCEDURE

Research Design

A correlational research design was applied to explore the statistical relationships defined in the research questions. The limitation of a correlational research design based on survey data is that it cannot make conclusions about the existence of causal relationships (Pearl, 2009). Consequently, it was not possible to examine if the temperament factors, social goal orientations, and gender were causal factors that had a direct effect, impact, or influence on aggression/withdrawal. It was, however, possible, using a correlational research design to determine the extent to which temperament factors, social goal orientations, and gender were statistically significant predictors of aggression and withdrawal (Cohen, Cohen, West, & Aitken, 2003).

Path Analysis

The correlational research design involved the use of path analysis, which is an extension of multiple regression analysis. Path analysis is widely used by researchers to construct models based on the statistical associations between multiple variables, depicted in a path diagram (Wuensch, 2016). Modern path analysis methods include covariance-based (CB) modeling using software such as AMOS, and variance-based modeling with partial least squares (PLS) using software such as SmartPLS (Hair, Anderson, Babin, Tatman, & Black, 2010). In the context of the current study, the advantage of PLS was that it is a non-parametric method, meaning that, unlike MLR and CB modeling, PLS has no restrictions on the measurement levels or distributional characteristics of the variables. PLS operates effectively with nominal, ordinal, and interval level variables, even if they deviate very strongly from normality (Haenlein & Kaplan 2004; Hair, Hult, Ringle, & Sarstedt, 2014). The Kolmogorov-Smirnov Z statistic was computed
to test the normality of the variables; all of the variables deviated significantly from normality ($p < .01$). Thus, parametric descriptive statistics (e.g., mean and standard deviation) and inferential statistics (e.g., MLR and covariance-based path analysis) were not justified for the current study, because all of the variables deviated strongly from normality. The path analysis was conducted using SmartPLS, because PLS is a non-parametric method and is especially useful to construct models using highly skewed ordinal variables collected in a cross-sectional survey (Wong, 2013).

**Data Analysis Procedure**

The data were standardized using Z scores, thus the $\beta$ coefficients could range from -1 through 0 to +1. The $R^2$ values were interpreted to provide an estimate of the effect sizes (i.e., the proportions of the variance in the exogenous variables explained by the endogenous variables). The criterion for interpreting $R^2$ followed the criterion of Ferguson (2009) where < 4% was a negligible effect, 25% a moderate effect, and 64% (or higher) a strong effect. A bootstrapping procedure with 5000 sub-samples was carried out to provide extra confidence that the results were not sample-specific. After bootstrapping, the mean (M) and standard error (SE) of each $\beta$ coefficient was computed. Two-tailed one-sample $t$-tests (where $t = M/SE$) were conducted to determine if the mean value of each $\beta$ coefficient was significantly different from zero at the conventional $\alpha = 0.05$ level of significance, within an infinite number degrees of freedom. To evaluate the results of the path analysis, the $\beta$ coefficients were functionally interpreted in the same way as the standardized partial regression coefficients in a multiple regression model (Hair et al. 2014).
RESULTS

Research Questions

Several research questions guided this study. (1) The first was to determine to what extent proactive/reactive aggression and social withdrawal can be predicted by temperament factors, social goal orientations, and gender. (2) We also sought to discover whether including both temperament and social goals in the analyses aids in predicting the specific type of aggressive behavior. Furthermore, we aimed to determine (3) whether negative affect acts as a general predictor of all problem outcome behaviors. To do this we ran path analyses for each outcome variable (proactive aggression, reactive aggression, and social withdrawal) with each temperament factor (negative affect, low and high impulsivity, and low and high inhibition), social goal orientation score (instrumental and affective social goals) and gender as exogenous variables.

Descriptive statistics for study variables are shown in Table 1.2. In initial analyses, we found that, for all three models, high impulsivity and negative affect were strongly positively correlated (correlations for study variables are listed in Table 3). Thus, to avoid violating the assumption that exogenous variables should not be strongly correlated, negative affect and high impulsivity were chained together on a single path for predicting proactive aggression, reactive aggression, and social withdrawal. Specific results for each outcome behavior are explained in the following sections. The path diagrams displaying the β coefficients (next to the arrows) and the R² values (within the oval symbols representing the exogenous variables) for proactive aggression are illustrated in Figure 1.1, reactive aggression in Figure 1.2, and social withdrawal in Figure 1.3.
Table 1.2

Descriptive statistics for study variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impulsivity</td>
<td>452</td>
<td>9.00</td>
<td>62</td>
<td>30.29</td>
<td>11.69</td>
</tr>
<tr>
<td>Low impulsivity</td>
<td>458</td>
<td>7.00</td>
<td>49</td>
<td>31.68</td>
<td>8.47</td>
</tr>
<tr>
<td>High inhibition</td>
<td>450</td>
<td>6.00</td>
<td>39</td>
<td>19.7</td>
<td>7.13</td>
</tr>
<tr>
<td>Low inhibition</td>
<td>456</td>
<td>6.00</td>
<td>42</td>
<td>27.37</td>
<td>6.43</td>
</tr>
<tr>
<td>Negative affect</td>
<td>457</td>
<td>4.00</td>
<td>28.0</td>
<td>13.35</td>
<td>5.98</td>
</tr>
<tr>
<td>Instrumental Social Goals</td>
<td>466</td>
<td>1.0</td>
<td>4.0</td>
<td>2.44</td>
<td>.63</td>
</tr>
<tr>
<td>Affective Social Goals</td>
<td>464</td>
<td>1.8</td>
<td>4.0</td>
<td>3.41</td>
<td>.402</td>
</tr>
<tr>
<td>Proactive Aggression</td>
<td>473</td>
<td>-4.62</td>
<td>11.91</td>
<td>.00</td>
<td>3.37</td>
</tr>
<tr>
<td>Reactive Aggression</td>
<td>473</td>
<td>-1.67</td>
<td>3.42</td>
<td>.00</td>
<td>.973</td>
</tr>
<tr>
<td>Social Withdrawal</td>
<td>473</td>
<td>-1.72</td>
<td>3.68</td>
<td>.00</td>
<td>.973</td>
</tr>
</tbody>
</table>
Table 1.3  

**Correlation coefficients (Pearson’s R) for study variables**  

Note: **. Correlation is significant at the 0.01 level (2-tailed).  
*. Correlation is significant at the 0.05 level (2-tailed).

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Low Impulsivity</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. High Impulsivity</td>
<td>-.642**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. High Inhibition</td>
<td>-.465**</td>
<td>.488**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Low Inhibition</td>
<td>.638**</td>
<td>-.199**</td>
<td>-.636**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Negative Affect</td>
<td>-.657**</td>
<td>.872**</td>
<td>.446**</td>
<td>-.248**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Proactive Aggression</td>
<td>-.312**</td>
<td>.456**</td>
<td>.022</td>
<td>.064</td>
<td>.508**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Reactive Aggression</td>
<td>-.280**</td>
<td>.388**</td>
<td>.030</td>
<td>.067</td>
<td>.498**</td>
<td>.771**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Social Withdrawal</td>
<td>.021</td>
<td>-.128**</td>
<td>.165**</td>
<td>-.128**</td>
<td>-.128**</td>
<td>-.281**</td>
<td>-.2**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Instrumental Social Goals</td>
<td>-.092*</td>
<td>.112*</td>
<td>.032</td>
<td>.00</td>
<td>.106*</td>
<td>.137**</td>
<td>.089</td>
<td>-.079</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Affective Social Goals</td>
<td>.149**</td>
<td>-.096*</td>
<td>-.106*</td>
<td>.120*</td>
<td>-.035</td>
<td>-.077</td>
<td>-.031</td>
<td>.029</td>
<td>.174**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11. Gender</td>
<td>.084</td>
<td>-.019</td>
<td>.008</td>
<td>-.016</td>
<td>-.016</td>
<td>.008</td>
<td>-.028</td>
<td>.274**</td>
<td>-.121*</td>
<td>.136**</td>
<td>1</td>
</tr>
</tbody>
</table>
Proactive Aggression

Overall the path model predicting proactive aggression indicated that social goals and temperament variables predicted a moderate proportion of the variance. Specifically, 42.1% of the variance in proactive aggression was explained by the path analysis.

Figure 1.1 Path analysis to predict Proactive Aggression
Note: Underline denotes significant path Beta

Consistent with expectations, the chained high impulsivity and negative affect path was the strongest positive predictor of proactive aggression ($\beta = 0.491, t = 9.786, p < .001$). Also, as expected low inhibition ($\beta = -0.104, t = 2.216, p = .026$) was a significant predictor of proactive
aggression as well. Also, consistent with predictions, instrumental social goals, as anticipated, ($\beta = 0.070, t = 2.078, p = .038$) were a significant predictor of proactive aggression.

Surprisingly, high inhibition ($\beta = 0.243, t = 4.056, p < .001$) acted as significant and positive predictor of proactive aggression. This was not expected, and at first glance appears counterintuitive. Why would highly inhibited children proactively aggress towards their peers? However, after further examination of the items making up the high inhibition factor this result is more understandable, as elaborated on in the discussion section. Lastly, gender (coded by 1 = Male and 2 = Female) was also a significant predictor of proactive aggression ($\beta = -0.134, t = 1.984, p = .047$), suggesting that girls were less likely to exhibit proactive aggression than boys. Two of the exogenous variables were not significant predictors of proactive aggression, specifically low impulsivity ($\beta = -0.011, t = 0.191, p = 0.848$) and affective social goals ($\beta = -0.065, t = 1.875, p = .061$).

Overall, children exhibiting higher levels of impulsivity/negative affect and inhibition, as well as engaging in friendships for extrinsic reasons (instrumental social goals), tended towards higher levels of proactive aggression (i.e., they said mean things, called people names, teased, prevented others from being in their group, told friends to do what they said, and got what they wanted by hitting, shoving, pushing, or threatening others).

**Reactive Aggression**

Overall, the path model predicting reactive aggression indicated that social goals and temperament variables predicted a moderate proportion of the variance. Specifically, 28.3% of the variance in reactive aggression was explained by the path analysis.
The chained high impulsivity and negative affect factor was the strongest positive predictor of reactive aggression ($\beta = 0.468, t = 8.164, p < .001$). We did not expect to see a strong relationship between inhibition and reactive aggression; however, low inhibition negatively predicted reactive aggression ($\beta = -0.107, t = 2.323, p = .020$), while high inhibition was a significant positive predictor of reactive aggression ($\beta = 0.209, t = 4.056, p < .001$). Again, this result might be explained once individual items on the inhibition scales are examined.

Four of the exogenous variables were not significant predictors of reactive aggression, specifically gender ($\beta = -0.040, t = 0.712, p = .477$); low impulsivity ($\beta = -0.004, t = 0.067, p = .946$); affective social goals ($\beta = -0.021, t = 0.791, p = .429$); and instrumental social goals ($\beta = 0.029, t = 0.986, p = .324$). As a result, reactive aggression was not directly statistically associated with gender, or with low impulsivity, and/or with engagement in friendship related to social goals. But rather, children who tended towards high impulsivity and negative affect, were...
insecure and lacked self-confidence (*high inhibition* items), and who were not sociable, open, and outgoing (*low inhibition* items) displayed higher levels of *reactive aggression*.

**Social Withdrawal**

Overall, $R^2 = 0.170$ indicated that a less than moderate proportion (17.0%) of the variance in *social withdrawal* was explained by the path analysis.

![Path analysis to predict Social Withdrawal](image)

*Figure 1.3 Path analysis to predict Social Withdrawal*

*Note: Underline denotes significant path Beta*

As expected, *high inhibition* was the strongest predictor of *social withdrawal* ($\beta = 0.241$, $t = 5.801, p < .001$). The chained *high impulsivity* and *negative affect*, was also a significant negative predictor of *social withdrawal* ($\beta = -0.222$, $t = 5.243, p < .001$). Unsurprisingly, *low inhibition* negatively predicted *social withdrawal* ($\beta = -0.179$, $t = 3.101, p = .002$).
Four of the exogenous variables were not significant predictors of social withdrawal, specifically gender ($\beta = -0.010$, $t = 0.317$, $p = .751$); low impulsivity (-) ($\beta = 0.082$, $t = 1.692$, $p = .091$); affective social goals ($\beta = -0.008$, $t = 0.279$, $p = .668$); and instrumental social goals ($\beta = -0.012$, $t = 0.478$, $p = .632$). Thus, social withdrawal was not directly statistically associated with gender, low impulsivity and/or with engagement in friendship related to social goals. Overall, children who tended towards higher degrees of high inhibition (e.g., insecurity, difficulty making friends, etc.), high degrees of high impulsivity, and lower degrees of low inhibition (e.g., sociability, openness, etc.) exhibited higher levels of social withdrawal.
DISCUSSION

Our study had three major goals: (a) To determine to what extent proactive, aggression, reactive aggression and social withdrawal can be predicted by temperament factors, social goal orientations, and gender, (b) to determine the extent to which negative affect acts as a general predictor of all problem outcome behaviors, and (c) to discover whether including both temperament and social goals in the analyses aids in predicting the specific type of aggressive behavior children perceived their peers to exhibit.

Our results indicated that (1) proactive and reactive aggression and social withdrawal can be predicted by temperament, social goals, and gender. As expected, we found the largest predictor for proactive and reactive aggression to be high impulsivity/negative affect, whereas the largest predictors of social withdrawal were high inhibition and impulsivity/negative affect. While these predictors accounted for the largest amount of variance, other variables still played significant roles. (2) Both social goal orientations and temperament aided in predicting which type of social aggression was exhibited: instrumental social goals were a significant predictor of proactive aggression, while neither affective nor instrumental social goals were significant predictors of reactive aggression. (3) Lastly, as expected, negative affect (chained with high impulsivity) did act as a general risk factor for all problem outcome behaviors.

Negative Affect as a General Risk Factor

In agreement with prior research, our findings suggest negative affect acts as a general risk factor for various types of problematic social behaviors (Muris & Ollendick, 2005; Rothbart, Ahadi, & Hershey, 1994; Leon et al, 1999). Furthermore, we found that a combination of temperament and social goals helped to predict peer rated proactive aggression beyond the general risk factor of negative affect. Additionally, we found that impulsivity and inhibition
predicted reactive aggression and social withdrawal beyond the general risk factor of negative affect.

Interestingly, we found negative affect to be very closely related to impulsivity. The items making up the high impulsivity scale included the following: “manipulates to get his or her way, wants things his or her way, is stubborn, is hard headed, is mean, is selfish, is uncooperative, forgets things easily, and is easily distracted” (Deal et al, 2007), while the negative affect scale included the following: “is quick-tempered, gets angry easily, is moody, and is irritable” (Deal et al, 2007). Thus, the impulsivity factor includes items that at face value seem to relate more closely to the idea of negative affect than impulsivity (i.e., “mean, selfish, stubborn”, etc.), in addition to more classic aspects of impulsivity (i.e., “easily distracted, and forgets things easily”). As a result, it makes sense that negative affect and high impulsivity were so strongly correlated in the path analyses.

Predicting Type of Aggression from Temperament and Social Goals

Prior research has suggested that children with high levels of impulsivity and negative emotionality/affect engage in more aggressive behavior than children with low levels of these temperament traits (Rothbart et al, 1994; Rothbart et al, 2001; Deal et al, 2005). Previous research also suggests that children who endorse instrumental social goals engage in more aggressive behavior (Ojanen et al, 2005; Rudolph et al, 2011). The present findings add to this research by differentiating between the types of aggressive behavior using measures of temperament and social goals. We found that children who were had high degrees of negative affect/high impulsivity as well as high inhibition (i.e., “lacks confidence, is insecure, is withdrawn”, etc.) and instrumental goals exhibited more proactive aggression. Gender was also marginally predictive with boys engaging in proactive aggression more often than girls. On the
other hand, low impulsivity and affective social goals were not significant predictors. We anticipated that negative affect and instrumental goals would be predictive of proactive aggression; however, we incorrectly expected that children with higher affective goals would be less likely to act with proactive aggression with peers. In other words, we thought higher degrees of affective goals would be “protective.” Furthermore, we did not anticipate any relationship between high inhibition and proactive aggression. This result appears to be in direct conflict with studies like Wichmann et al (2004), which suggests that inhibited children prefer nonassertive/withdrawn social strategies. However, after a closer look at the items making up the high inhibition factor, which includes items related to insecurity, lacking confidence, and being fearful, perhaps this can at least partly be explained by ineffective social skills of inhibited and insecure children (Stewart & Rubin, 1995; Rubin, 1985). Furthermore, the proactive aggression measure included items tapping into relational aggression; some have argued that children who aggress in social or relational ways with peers do so at least partly due to poor social competence (Rose-Krasnor, 1997; Hawley, 2007).

We correctly anticipated that negative affect and high impulsivity would positively predict reactive aggression; however, we did not anticipate that high inhibition would act as a significant predictor. Again, this is likely related to the items measuring insecurity and low confidence within the high inhibition factor. This seems consistent with the literature, which suggests that children who are less socially skilled engage in reactive aggression more often than their more outgoing peers (Bierman et al, 1993). Furthermore, Poulin and Boivin (2000) found that not only was reactive aggression perceived more negatively by peers than proactive aggression, it was associated with social and behavioral maladjustment, social withdrawal, peer victimization, and negative peer status.
The nonsignificant relationship found between reactive aggression and gender is not surprising. Prior research has had similar results to ours, and reported no gender differences for reactive forms of aggression (Connor et al, 2003) or a negligibly higher rate in boys (Little et al, 2003). The fact that social goals did not have an effect on reactive aggression met our expectations, as reactive aggression appears to be more related to poor impulse control and poor social skills rather than social motivation (Raine et al, 2006; Xu & Zhang, 2007).

**Predicting Social Withdrawal from Temperament**

Our findings supported the hypothesis that social withdrawal would be related to temperament but not friendship goals. Specifically, social withdrawal was strongly predicted by high inhibition, whereas high impulsivity/negative affect as well as low inhibition negatively predicted social withdrawal. Consequently, consistent with previous research (Rubin et al, 2002; Eisenberg et al, 2000; Eisenberg et al, 2001), we found that children who exhibited higher levels of insecurity, shyness, fearfulness (high inhibition), and low degrees of sociability/openness (low inhibition) as well as high degrees of stubbornness, manipulation, distractedness, etc. (high impulsivity) tended towards higher levels of social withdrawal. Again, consistent with the literature, both genders were equally likely to exhibit social withdrawal (Coplan, Molina, Lagace-Seguin, & Wichmann, 2001; Coplan et al., 1994; Coplan & Rubin, 1998; Rubin, 1982). Prior research has shown that gender differences arise not in the prevalence of social withdrawal but in its social implications (i.e., fostering higher social maladjustment in boys) (Simpson & Stevenson-Hinde, 1985; Coplan et al, 2001; Rubin et al, 1993). Our results also suggest that social goals and low impulsivity (i.e., “considerate, sensitive, friendly”, etc.) (Deal et al, 2007) were not predictive of social withdrawal.

**Future Directions and Limitations**
While our study illuminates clear connections between temperamental traits, social goals, and social behaviors not previously reported in the literature, there are some clear limitations. Most importantly, it would have been ideal to analyze longitudinal data to better capture temperamental traits during early childhood and relate those to social behavior and goals in late childhood. Similarly, our study includes teacher report of temperamental traits versus the traditional parent report, which has both strengths and weaknesses. A particular strength of our study is the inclusion of three different sources of raters: Peer reported behavior, self-reported social goals, and teacher reported temperament.

Another limitation with our study was our measure of temperament. Our restructured use of the ICID required us to use temperament factors (particularly impulsivity) that differed from what one would typically think of those constructs. Ideally we would have been able to use a scale that measured a more classic construct of impulsivity and inhibition, or create our own. This is something that will be considered in future studies.

Practically speaking, our findings suggest that we can use temperamental traits and social goals to inform the likelihood of social aggression and withdrawal. Social goals are particularly of interest when it comes to interventions because they are potentially malleable. Previous research has shown success in targeting social goals as a means for changing social behavior, specifically by decreasing social aggression and peer rejection (Garandeau, Lee & Salmivalli, 2014; Frey et al, 2005; Atria & Spiel, 2007).

Temperamental traits, like personality traits, are often enduring through adulthood and thus are not meant to be targeted for change in interventions, but rather, may be useful in pinpointing children who are at risk for these problematic social behaviors. Early screening for behavioral difficulties and symptoms of psychiatric disorders has seen a recent surge in interest.
by school districts and other community health initiatives (O’Shaughnessy et al, 2003; Glascoe, 2005; Briggs-Gowan & Carter, 2008). Our study suggests that by including items assessing negative affect, impulsivity, and inhibition on such screening measures can improve predictive results.
CHAPTER 3

IS THE PATHWAY FROM CHILDREN’S TEMPERAMENT TO SOCIAL ACCEPTANCE MODERATED BY SOCIAL GOALS?

Understanding peer acceptance is necessary as it is an important predictor of later adjustment (Ladd 1990; Ladd et al, 1996; Bagwell et al, 2001; Bagwell et al, 1998; Waldrip et al, 2008; Parker & Asher, 1993; Pederson et al, 2007; Vandell & Hembree, 1994). Friendships and interactions with other peers during childhood and adolescence are also important contexts in which children learn critical interpersonal skills (Berndt & Ladd, 1989; Newcomb & Bagwell, 1995; Parker & Gottman, 1989; Ladd & Hart, 1992; Newcomb & Bagwell, 1998; Maguire & Dunn, 1997). In general, unhealthy peer relationships are linked to anxiety, loneliness, depression, and school maladaptation (Boulton & Underwood, 1992; Kochenderfer & Ladd 1996; Rudolph & Asher, 2000; Ladd 1999 for a review). Peer rejection, in particular, predicts internalizing and externalizing problems (Asher & Coie, 1990; Sandstrom & Coie, 1999; Ladd, 1999; Coie et al, 1992; Boivin & Hymel, 1995; Rubin & Mills, 1988; Vitaro et al, 1990; Pederson et al, 2007; Parker & Asher, 1987), as well as grade retention and adjustment difficulties during key developmental periods, such as the transition to middle school (Coie et al, 1992; Buhs & Ladd, 2001; Buhs 2005; DeRosier & Kupersmidt, 1994; Wentzel 1991; Wentzel & Asher, 1995). Although social status has been shown to be relatively stable and highly related to status from the previous year, rejected (i.e., disliked) social status, in particular, has been found to be more stable than average, well-liked, popular, and neglected (i.e., overlooked or
ignored) status. In general, research suggests that rejected children either stay rejected, become neglected, or -- at best -- move to an average status position, but they are unlikely to become socially accepted over time (Coie & Dodge, 1982; Sandstrom & Coie, 1999; Asher & Coie, 1990; Boulton & Smith, 1994).

Studies suggest that the pathway to peer acceptance or peer rejection includes multiple factors, including personality/temperamental traits and competent, skilled social behavior (Panak & Garber, 1992; Asher & Coie, 1990; Rubin et al, 1990; Walker et al, 2001; Dodge et al, 2003; Hodges & Perry, 1999). One factor that influences the production of skilled behavior is a child’s social goals, which, in turn, affect the pathway to peer acceptance. Research suggests that goals of dominance and power are related to aggressive behavior, whereas goals of communion and intimacy are related to prosocial behavior (Ojanen et al, 2005; Salmivalli et al, 2005). Further, researchers have found intervening on children’s social goals to be an effective way to reduce peer aggression (Garandeau, Lee & Salmivalli, 2014; Frey et al, 2005; Atria & Spiel, 2007). Children’s social goals vary from dominance, power, and influence, to goals focused on communion, relationship maintenance, and increasing intimacy (Caravita & Cillessen, 2012; Ojanen et al, 2005; Salmivalli et al, 2005). There are also goals focused on approaching social situations and others on avoiding social embarrassment (Gable et al, 2006; Ryan & Shim, 2006; Elliot & Thrash, 2002). Thus, a child’s social goal orientation affects the way that they engage with the social world around them (Jarvinen & Nicholls, 1996; Lochman et al, 1993; Erdley et al, 1997; Ojanen et al, 2005). Research also suggests that social goals may moderate the relationship between a child’s stable traits and peer acceptance (Rose-Krasnor 1997; Mikami et al, 2010).

Social goals and personality affect the way a child relates with the social world, but personality/temperament traits also affect the way that the social world interacts with the child. A
child’s personality elicits certain treatment from others. For example, a child with personality traits that are attractive to others, receives different attention and interactions than a child with personality traits deemed unattractive to others (Buss and Plomin, 2014; Plomin et al, 1977; Scarr and McCartney, 1983). In other words, children who are highly accepted by their peers appear to possess certain personality traits/characteristics (Scholte et al, 1997; Szewcyk-Sokolowski et al, 2005; Sanson et al, 2004; van der Linden et al, 2010; Mendelson et al, 1994; Guinouard & Rychlak, 1962; Gleason et al, 2005). For example, Hintsanen et al (2010) found that the strongest predictor for low social status was low inhibition for girls and high impulsivity/activity in boys. Yet, to date there is minimal work connecting temperamental traits to older children/adolescents’ social status. The purpose of the current study is to explore the moderating role of social goals in the pathway from temperament to social acceptance or, conversely, social rejection.

**Social Status and Friendship Research in Developmental Literatures**

Social status research is complicated, because it includes multiple facets and diverse terminology, and researchers from differing fields define social status differently. Currently, common terms in status research include sociometric popularity, perceived popularity, social preference, social acceptance, likeability, peer rejection, and peer neglect (Newcomb, Bukowski, & Patee, 1993; Parkhurst & Hopmeyer, 1998; Coie, Dodge, & Kupersmidt, 1990; Asher & Wheeler, 1985; Lease & Musgrove, 2002; Coie, Dodge, & Coppotelli, 1982). In general, sociometric popularity, rooted in developmental psychology, refers to peer acceptance and is based on ratings of liking and disliking, whereas perceived popularity, based in sociology, refers to centrality and social visibility (Parkhurst & Hopmeyer, 1998; Lease et al, 2002) and is related to extraversion and agreeableness (Jensen-Campbell et al, 2002). Research has shown that
perceived popularity, while moderately associated with sociometric popularity, is also
moderately related to social dominance and especially relational aggression, whereas sociometric
popularity is related to prosocial and academic behaviors (Lease et al, 2002; Parkhurst &
Hopmeyer, 1998; Sandstrom & Cillessen, 2006; Andreou 2006). Social preference, as noted
above, is being measured in this study; it is a combination of liking and disliking and is thus an
overall index of acceptance. Social preference, a specific measure of social acceptance or
likeability derived using sociometric methods, is often used when a continuous variable is
desirable (Coie et al, 1982; Newcomb & Bukowski, 1983; Lease et al, 2002). Finally, peer
rejection is a classification that refers to active dislike in the form of low levels of positive and
high numbers of negative peer nominations; students who are peer rejected score very low on
social preference. Peer rejection is associated with high levels of aggression -- especially reactive
forms – as well as withdrawal and low levels of sociability (Newcomb, Bukowski, Pattee, 1993
for review; Bierman et al, 1993; Parkhurst & Asher, 1992). Peer neglect, in contrast, is not about
peer disliking, but rather low visibility and dominance. Children who are neglected are
overlooked by peers and demonstrate low sociability and aggression but not necessarily poor

The current study examines social preference (i.e., social/peer acceptance), which is the
antithesis to peer rejection and a strong predictor of social-emotional adjustment (Coie et al,
1990; Gifford-Smith and Brownell, 2003; Hymel et al, 1990). In the developmental psychology
field, Coie et al (1982) were some of the first researchers to create a quantitative, methodological
framework for classifying children into social status categories. Specifically, the input data for
this categorization scheme was based on peer nominations of liked and disliked classmates: both
were included as they measure different aspects of social status. Using these two types of
nominations, subjects were classified into one of five categories: popular, controversial, average, rejected, and neglected. Continuous sociometric variables—social preference and social impact—were also created and used for this purpose. Social preference is calculated by subtracting like-least peer nominations from like-most, whereas social impact is calculated by adding like-least and like-most nominations.

To determine the relationship between personality and peer status it is important to study and understand peer acceptance and rejection. Peer rejection is associated with maladjustment and in extreme cases psychopathology (Bagwell, Newcomb, & Bukowski, 1998; Kupersmidt, Coie, & Dodge, 1990; Ladd & Troop-Gordon, 2003; Hodges et al, 1999; Ladd, 1999). Studies show a connection between peer rejection to anxiety and depression (Pederson et al, 2007; Bagwell et al 1998; Gazell & Ladd, 2003), suicidal ideation (Prinstein et al, 2000), and academic difficulties and delinquency (Ladd 1990; Coie 199; Kupersmidt, et al 1990; Parker & Asher, 1987). Thus, the developmental significance of peer rejection and by default, acceptance, points to the importance of further investigating its developmental precursors and motivational/behavioral factors, which undoubtedly play important roles in social-emotional adjustment. Consequently, for the current study, we chose to examine social preference to include a measure of status that takes into account not only how well a child is liked by their peers but also how they are disliked (Coie et al 1982).

Social Status and Temperament

We are interested in the relationship between temperament and social status, because previous research has shown that personality traits, closely related to temperament, are important predictors of social status levels (Eisenberg, Fabes, Bernzweig, Karbon, Poulin, & Hanish, 1993; Maszk, Eisenberg, & Guthrie, 1999; Berdan, Keane, & Calkins, 2008; Sanson et al 2004; Gunnar
et al 1998). [Previous research has established that personality and temperament are closely related constructs (Buss & Plomin, 2014; Rothbart, Ahadi, & Evans, 2000; De Pauw, Mervielde, & Van Leeuwen, 2009; Rothbart 2007; Digman 1994; Rothbart, Ahadi, & Hershey, 1982).]

There is a substantial amount of research examining the connection between personality traits and social status and related outcome variables in adults (Selfhout et al, 2010; Anderson et al, 2001; Asendorpf et al, 1998; Paunonen, 2003; Anderson et al, 2001), but there is less of a consistent history of research linking temperament/personality and social status in later childhood and early adolescence.

The most ubiquitous model of personality is the “Big 5,” which includes Extraversion, Neuroticism, Agreeableness, and Conscientiousness (Goldberg, 1980; Goldberg, 1990; John & Srivastava, 1999). As far as research on “Big 5” personality and status, studies examining adults have shown that social preference and high social status are related to extraversion (Selfhout et al, 2010; Anderson et al, 2001; Asendorpf et al, 1998; Paunonen, 2003), whereas high neuroticism predicts lower social status in men (Anderson et al, 2001). In children, higher levels of agreeableness and extraversion are related to peer preference (Jensen-Campbell et al, 2002), whereas lower levels of extraversion and agreeableness are correlated with peer rejection (Newcomb et al, 1993) (Ozer & Benet-Martinez, 2006 for review).

In contrast to personality research, which tends to focus on older adolescents or adults, temperament studies examining social difficulties have mostly been conducted in young children from toddlerhood to Kindergarten/1st grade; such studies suggest that rejected children have higher reactivity and fear levels, hyperactivity, higher distractibility, and lower persistence than their average status peers (Walker et al, 2001; Berdan et al, 2008; Wilson 2006; Sanson et al, 2004). This relationship between reactivity/hyperactivity/distractibility and peer rejection
appears to be stronger for boys than girls (Sanson et al. 1996). Higher levels of social preference, on the other hand, is reportedly related to sociability and happiness (Bonney 1943; Skarness & Carson, 1986; Stocker & Dunn, 1990), whereas peer neglect is related to low adaptability, high negative affect/emotionality, and high temperamental shyness (Walker et al., 2001; Asendorpf 1993).

Other research has linked two temperamental traits, in particular, to social-emotional maladjustment and that research has implications for children’s relationships. Research in psychopathology has viewed inhibition and impulsivity, as major risk factors for internalizing and externalizing disorders such as anxiety, depression, conduct disorder, and substance abuse (Gray 1982; Barkley 1997; Quay 1988; Johnson et al., 2003 and Muris et al., 2005 for reviews). Both internalizing and externalizing disorders and symptoms are related to peer rejection, and most experts in this area point to peer rejection as a predictor of internalizing and externalizing disorders (Bagwell, Newcomb & Bukowski, 1998; Parker & Asher, 1987; Boivin & Hymel, 1995; Deater-Deckhard 2001; Kim & Cicchetti, 2010; Asher & Coie, 1990; Laird, Jordan & Dodge, 2001; Coie, Terry, Lenox, & Lochman, 1995; Coie et al, 1992). Research in this area suggests that ADHD symptoms such as hyperactivity, inattention, and impulsivity may be related to peer rejection. For instance, Bachini et al (2008) found that temperamental traits have a direct relation to ADHD symptoms, which then have a direct relation to peer rejection. Furthermore, Gresham et al (1998) examined children with hyperactivity, impulsivity, inattention, and conduct problems and compared them to children with an internalizing and externalizing behavior pattern and a control group. They found that the largest difference between the groups was on measures of peer rejection, peer preference, and teacher-rated social skills. Two-thirds of the
hyperactive/impulsive/inattentive group were rejected as compared to one-third of the combined internalizing/externalizing group and only 10% of the control group.

Although there is a fair amount of research on status and personality in adults as well as temperament and status in young children, less research exists that connects social status and personality/temperament in older children and adolescents. However, Van der Linden et al (2010) found that, for a group of 14 year olds, extraversion and emotional stability were associated with peer preference/likeability and perceived popularity, whereas agreeableness was related to peer preference alone and conscientiousness was negatively related to popularity. Similarly, Sterry et al (2010) found that for a group of 8-16 year olds, higher peer preference ratings were associated with lower general activity level, greater flexibility (adaptability), and greater attentional focus. They also found that the association between general activity level and social preference was stronger for the younger children in the sample, and that the relationship between attentional focus and activity level to social preference is stronger in boys. This gender difference is consistent with past research and might exemplify how cultural expectations and contexts impact the relationship between temperament and social functioning (Sterry et al, 2010; Eisenberg et al, 1993; Eisenberg et al, 1995)

The temperament studies mentioned above measured traits such as surgency, inhibition, effortful control, reactivity, distractibility, and low persistence. Temperament research is guided by and makes use of many different theories, traits, and labels. One such model is the BIS/BAS theory originally put forth by Gray (1972, 1981). This theory states that there are two major brain systems, which form the foundation of temperament: (1) The behavioral inhibition system (BIS), which is responsible for regulating anxiety-relevant cues, punishment, and novelty, and (2) the behavioral activation system (BAS), which regulates approach behaviors and is sensitive to
reward (Carver & White, 1994). Research suggests that individuals high on BIS have a tendency to withdraw and become upset in novel situations, whereas those high on BAS possess an increased likelihood to be impulsive, have high activity level, lack task persistence, and display negative emotions when denied access to reward (Gray 1972, 1981).

In the current study, we have chosen to use a 3-factor model of temperament (impulsivity, inhibition, and negative affect) based on previous research by Martin and Bridger (1999) and Rothbart (2001), and related to BIS/BAS theories by Gray (1972, 1981). The focus of this study is on the connection between these three temperamental factors, social goals, and peer acceptance.

### Social Status and Social Goals

Examining children’s social goals in relation to status is important, because previous research suggests that children and adolescents of differing social status endorse different social goals, which guide social decision-making. In essence, social goals indicate a child’s motivation to pursue varying social outcomes (Caravita & Cillessen, 2012; Jarvinen & Nicholls, 2005; Taylor 1984; Renshaw & Asher, 1983; Dodge & Coie, 1987). The current study examines affective and instrumental social goals, because past studies suggest that peer acceptance acts as a moderating variable between social goals and relational aggression for children with low (affective) communal and high agentic (instrumental) goals (Ojanen et al, 2014). Following earlier research from Hawley, Little, and Pasupathi (2002), a 22-item self-report scale of Friendship Goals was included in the current study that is based on the value put on social relationships, ranging from valuing relationships for their intrinsic qualities, like intimacy, and the valuing peer relationships for what they help one achieve (i.e., allies, popularity, recognition) (Hawley et al, 2002). Valuing relationships for their intrinsic qualities is referred to as affective
social goals, whereas valuing relationships for extrinsic reasons and for what they can help you achieve is referred to as *instrumental* social goals.

Most research on the relationship between social goals and social preference focuses on social behavior (i.e., prosocial and aggressive behavior) (Ojanen et al., 2014, Kiefer & Wang, 2015; Ojanen et al., 2005; Salmivalli et al., 2005; Crick & Dodge, 1996; Rose & Asher, 1999; Chung & Asher, 1996; Erdley & Asher, 1996). To our knowledge, there have not been studies explicitly examining how social goals moderate the empirical relationship between temperament and social status.

**Current Study**

Two children could be equally as impulsive, but one is rejected by peers and the other accepted. Why would this be the case? There are likely numerous factors at play, but our hypothesis is that while there may not be any direct relationship between temperament and social goals, social goals likely moderate the relationship between temperament and acceptance. For example, high inhibition predicts peer rejection (Rubin et al., 1990; Boivin & Hymel, 1995, Ladd 1999), but affective goals may make that outcome less likely. It is possible that affective goals will act as “buffers,” whereas instrumental goals will exacerbate social problems. In this way, we expected that affective goals would be protective, whereas instrumental goals would act as risk factors to magnify and worsen social outcomes for children who are high on temperamental impulsivity and negative affect. Based on previous research (Oberle et al., 2010; Sterry et al., 2010; Eisenberg et al., 1993; Eisenberg et al., 1995), we also anticipated that there would be significant gender differences in the way that social goals moderate the relationship between temperament and social preference, thus we conducted analyses separately for boys and girls.
Methods

Participants and Procedure

Participants consisted of 473 fourth and fifth grade students (52% girls; mean age= 11.08 years; 58% White, 40% African American/Black, and 2% Other) from 26 classrooms in a school system in the rural southeastern United States. The participating schools averaged 70% free and reduced lunch.

Participation in the study required both parental consent and child assent. Consent forms were sent home with students to their parents in the spring of the school year. Data collection took place during the late spring of the school year. The forms included a designated area to sign granting consent and a place to sign denying consent. The rate of consent for child participation was 88%.

Measures included in this study were peer, teacher, and self-report. Questionnaires were group administered by trained research team-members in two 1-hour sessions, and written items were read aloud to students. All students in the class were given a token gift for their time, whether they participated in the study, or not.

The participants were told that their answers were confidential and were asked to keep their responses to themselves in order to minimize classroom discussion related to the questionnaire. Each participant was given a class roster with a corresponding number for each student to ensure quick and easy nomination. Peer nomination items allowed the participants to nominate three participating classmates for each item, and students were asked to choose the student(s) who best fit the description for the peer-nomination items.
Measures

SOCIAL STATUS

Following procedures outlined in earlier research by Coie and colleagues (1982) and Lease et al (2002), like-most and like-least peer nominations were gathered to measure children’s social acceptance. Participants were told they could nominate up to three peers from their class roster for each question. Children were asked, “Who do you like to play with the most?” and “Who do you like to play with the least?” Numbers of like-most and like-least nominations received by each participant were then summed and standardized, within classroom and gender, to a mean of 0 and a standard deviation of 1. Social preference, calculated as standardized like-most scores minus standardized like-least scores (Coie et al, 1982), was used in analyses as an overall index of social acceptance, or social status, within the school-based peer group.

TEMPERAMENTAL TRAITS: ICID-S

Temperamental traits were assessed through teacher report using a 61-item version of the Index of Children’s Individual Differences, short form (ICID-S). The ICID-S (50 item short version) was further reduced by Deal, Halverson, Martin, Victor & Baker in 2007, however, that version was unavailable when the data for the current study was collected. Thus, an interim form of the ICID was used containing 61 items. The ICID has been widely cited in temperament research and is based on the five-factor model of personality (Deal et al, 2003; Deal et al, 2007; Zupancic et al, 2004; Grist et al, 2012; Herzoff and Tackett, 2012, etc). The ICID was developed by gathering and analyzing over 50,000 parental descriptors of children from eight different countries (Deal et al, 2003). The scale measures 14 temperament dimensions: intelligence, open/curious, achievement orientation, positive emotionality, considerate-of-others, activity level, negative emotionality, antagonistic, strong-willed, distractibility, disorganized, inhibition,
social withdrawal, and insecure/fearful. Following previous work by Ahadi and Rothbart (1994), Rothbart and colleagues (2001), Martin and Bridger (1999), and Deal et al (2005), we chose to examine inhibition, impulsivity, and negative affect (emotionality) domains. Inhibition, impulsivity and negative affect are being widely studied by psychopathology researchers: Impulsivity and inhibition appear to be the primary temperamental risk factors for internalizing and externalizing disorders (Gray 1982; Barkley 1997; Quay 1988; Johnson et al, 2003 and Muris et al, 2005 for reviews), whereas negative affect (or emotionality) appears to operate as a risk factor for psychopathology in general (Muris & Ollendick, 2005; Rothbart, Ahadi, & Hershey, 1994; Leon et al, 1999). Results from a previous study were reviewed to determine which ICID items should be included into each of the three temperament domains (Deal et al, 2007). Specifically, Deal and colleagues examined the ICID domains for correlation with the Temperament Assessment Battery (TAB-R Martin and Bridger, 1999) Inhibition and Impulsivity factors. They found that the ICID “Antagonism” domain (“Manipulates to get his/her own way, is stubborn, hard-headed, mean, selfish, uncooperative, forgets things easily and is easily distracted”) correlated strongly with the TAB (.58) Impulsivity scale, thus this domain makes up our Impulsivity (+) or high impulsivity factor. The ICID domain “Agreeable” (“Sweet, a joy to be with, friendly, cheerful, sensitive to others’ feelings, affectionate, kind and caring”) was broken up into two domains in the Deal et al (2007) study, “Positive Emotions” and “Considerate,” and was strongly negatively correlated with the TAB Impulsivity (-.42 and -.45) scale. Thus, the “Agreeable” domain comprises our Impulsivity (-) or low impulsivity factor. The ICID “Shy” domain (“Lacks confidence, is insecure, has difficulty making friends, is slow to warm up to new people/situations, withdrawn, and fearful”) correlated strongly with the TAB (.68) scale of Inhibition, thus making up our Inhibition (+) or high inhibition factor. And lastly,
the ICID “Sociability” domain (“Always on the move, energetic, outgoing, sociable, loves to be with other people, and makes friends easily”) on the ICID was strongly negatively correlated with Inhibition on the NEO Five Factor Inventory (Costa and McCrae, 1992) and TAB (.66), thus comprising our Inhibition (-)/low inhibition factor.

For our temperament measure, teachers were given instructions to “Please read each statement. Look at the scale and circle the number that corresponds to the degree that you think the statement describes the child in comparison to other children his/her age.” The rating scale provided indicated that 1= much less than the average child or not at all, 2= less than in the average child, 3= slightly less than in the average child, 4= same as in the average child, 5= slightly more than in the average child, 6= more than in the average child, 7= much more than in the average child.” The items are listed in Table 2.2. Internal consistency for each of the factors was examined using Cronbach’s alpha. Because our scales for inhibition and impulsivity measure both directions of the construct (positive and negative values), the reliability of the scales were below our expectations when including both directions in one factor. However, when separating inhibition and impulsivity into the positive and negative directions, reliability of the scales improved. Thus, we decided to keep the constructs separate – high inhibition, low inhibition, high impulsivity, and low impulsivity -- for the remainder of the study. The items measuring negative affect only evaluate the positive direction of the construct, thus it remains one factor. The reliability tests resulted in .91 for negative affect (4 items), .92 for high impulsivity (9 items), .95 for low impulsivity (7 items), .87 for high inhibition (6 items), and .90 for low inhibition (6 items).
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<thead>
<tr>
<th>Factor</th>
<th>Items</th>
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<tbody>
<tr>
<td>Negative Affect</td>
<td>Is quick-tempered</td>
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<td></td>
<td>Gets angry easily</td>
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<td></td>
<td>Is moody</td>
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<td></td>
<td>Is irritable</td>
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<tr>
<td>Impulsivity (+) high impulsivity</td>
<td>Manipulates to get his/her own way</td>
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<td></td>
<td>Wants things his/her own way</td>
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<td>Is stubborn</td>
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<td>Is hard-headed</td>
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<td>Is mean</td>
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<td>Is selfish</td>
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<td>Is uncooperative</td>
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<td>Forgets things easily</td>
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<td></td>
<td>Is easily distracted</td>
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<tr>
<td>Impulsivity (-) low impulsivity</td>
<td>Is sweet</td>
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<td></td>
<td>Is a joy to be with</td>
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<td></td>
<td>Is friendly</td>
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<td>Is cheerful</td>
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<td>Is sensitive to others’ feelings</td>
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<td></td>
<td>Is affectionate</td>
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<td></td>
<td>Is kind and caring</td>
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<td>Inhibition (+) high inhibition</td>
<td>Lacks confidence</td>
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<td></td>
<td>Is insecure</td>
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<td>Has difficulty making friends</td>
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<td>Is slow to warm up to new people/situations</td>
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<td>Is withdrawn</td>
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<td>Is fearful</td>
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<tr>
<td>Inhibition (-) low inhibition</td>
<td>Is always on the move</td>
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<td>Is energetic</td>
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<td>Is outgoing</td>
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<td>Is sociable</td>
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<td></td>
<td>Loves to be with other people</td>
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<td></td>
<td>Makes friends easily</td>
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SOCIAL GOALS

Following earlier research from Hawley, Little, and Pasupathi (2002), a 22-item, 4-point (strongly disagree, disagree, agree, strongly agree), self-report scale was included to assess affective and instrumental social goals (i.e., valuing friendship for quality and intimacy vs. for what you can gain from friendships). This scale drew from previous research by Deci and Ryan (1985) and has been widely used and cited by researchers in the social motivation field (i.e., Ojanen et al 2005, Ojanen et al 2010, Salmivalli, 2010, etc.) The students were given the following instructions: “Below is a list of reasons kids might have for becoming friends with another kid. I would choose to become friends with…” Children were asked to choose whether they strongly disagreed, disagreed, agreed, or strongly agreed with the statement. Items are listed in Appendix A.

Principal components analysis was used to identify and compute composite scores for the factors underlying the Friendship Goals scale. Initial eigenvalues indicated that two factors would be retained according to the Kaiser and Guttman rule, accounting for a total of 36% of the variance. The first factor, instrumental social goals explained 22% of the total variance, while the second factor, affective social goals, explained 16% of the total variance. Internal consistency for each of the factors was examined using Cronbach’s alpha. The alphas were adequate: .78 for instrumental social goals (12 items) and .81 for affective social goals (10 items). No substantial increases in alpha for any of the scales could have been achieved by eliminating more items.
PROCEDURE

Research Design and Data Analysis Procedure

The purpose of this study was to determine whether social goals act as significant moderators in the relationship between temperament factors and peer acceptance. A correlational research design was applied to explore the statistical relationships defined in the research questions. The research questions and hypotheses in this study examined moderation using path analysis.

Path analysis could potentially be conducted by multiple linear regression (MLR) analysis, based on ordinary least squares (OLS), using generalized statistical software such as SPSS. MLR analysis is, however, a first-generation method, and is sometimes difficult to implement in practice, because it requires a large number of theoretical assumptions that are often violated (Cohen et al., 2003); MLR has been largely superseded by superior second generation methods developed in the last 20 years (Alavifar, Karimimalayer, & Annuar, 2012). These modern methods include covariance-based (CB) modeling and variance-based modeling with partial least squares (PLS) using software such as SmartPLS, which was used for this study (Hair, Anderson, Babin, Tatman, & Black, 2010).

In our analyses, the $R^2$ values were interpreted to provide an estimate of the effect sizes (i.e., the proportions of the variance in the exogenous variables explained by the endogenous variables). The criterion for interpreting $R^2$ followed the criterion of Ferguson (2009) where < 4% was a negligible effect; 25% a moderate effect, and 64% a strong effect. The statistical significance of each $\beta$ coefficient was evaluated by bootstrapping. A total of 5000 sub-samples were drawn from the empirical data, with 300 cases in each sub-sample. After bootstrapping, the mean (M) and standard error (SE) of each $\beta$ coefficient was computed. Two-tailed one-sample $t$-tests (where $t = M/SE$) were conducted to determine if the mean value of each $\beta$ coefficient was
significantly different from zero at the conventional $\alpha = 0.05$ level of significance, within an infinite number degrees of freedom. To evaluate the results of the path analysis, the $\beta$ coefficients were functionally interpreted in the same way as the standardized partial regression coefficients in a multiple regression model (Hair et al. 2014).

The current study evaluates the moderating effect of social goals on the relationship between temperament types and social preference. Moderation refers to a third variable, termed a moderator, which changes the strength and/or direction of the statistical association between a predictor variable and an outcome variable (Baron & Kenny, 1986). The moderating effect is defined as the $\beta$ coefficient derived from the statistical association between the outcome and the product of the predictor $x$ the moderator. In order to create the moderating variable in Smart PLS, we used the two-stage approach based on previous work by Chin et al. (2003). Using this method, we ran the main effect model and extracted the latent variable scores. We then used those latent variable scores as indicators of the exogenous and endogenous variables. The elementwise product of the latent variable scores the exogenous variable and the moderator variable then functioned as the indicator of the interaction term.
RESULTS

Two major research questions guided this study, the first of which was to determine if social goals act as significant moderators in the relationship between teacher-reported temperament factors and peer acceptance (i.e., social preference). Secondly, we sought to determine whether this relationship differed based on gender. To answer these questions, we ran a path analyses for all three temperament factors and peer-reported social preference, first with self-reported instrumental social goals as a moderator and a second one with affective social goals as a moderator. We ran these path analyses separated by gender. Table 2.2 displays descriptive statistics of the study variables, and Table 2.3 displays correlations between study variables. Tables 2.4-2.7 display results of the path analyses. Correlation statistics suggest that social preference is significantly positively correlated with low inhibition (.309), and low impulsivity (.109), and significantly negatively correlated with high inhibition (-.256). Thus, the sociable and agreeable traits measured by low inhibition and low impulsivity are positively related to social preference, whereas the withdrawn and shy traits measured by the high inhibition factor are negatively related to social preference.

Instrumental Goals

The results contained in Table 2.4, for the female participants, and Table 2.5, for the male participants, indicate that self-reported instrumental social goals, irrespective of gender, do not have a statistically significant moderating effect on the relationships between teacher-reported temperament factors and peer-reported social preference. Consequently, both boys and girls who engaged in friendship for extrinsic reasons and for what they could get out of it did not have an elevated or depressed social preference, irrespective of their temperaments. However, for girls, the moderating effect of instrumental social goals on the relation between low inhibition and
social preference nearly reached significance (p=.057). (Figures 2.1-2.6 display a visual representation of the significant moderating effects.) Furthermore, for boys, the moderating effect of instrumental social goals on the relation between high inhibition and social preference nearly reached significance (p=.076).

**Affective Goals**

In contrast, the results from Table 2.6 and 2.7 indicate that affective social goals acted as significant moderators on the relationship between certain temperament traits and social preference. The significant positive β coefficients were (a) for the moderating effect of affective social goals in the pathway from low inhibition to social preference in Table 2.6 for girls (β = 0.208, t = 2.601, p = .009) (Figure 2.3) and (b) in Table 2.7 (β = 0.177, t = 2.170, p = .030) for boys (Figure 2.6). Consequently, endorsing affective social goals (i.e., being motivated to engage in friendships for companionship and trust) for both boys and girls who tended to be always on the move, energetic, outgoing, sociable, loved to be with other people, and made friends easily led to an elevated level of social preference.

The significant negative β coefficients for both genders in Table 2.6 and Table 2.7 were for the moderating effect of affective social goals on the relationship between negative affect (girls β = -0.227, t = 2.181, p = .007, see Figure 2.1) (boys β = -0.229, t = 2.423, p = .015, see Figure 2.4) and high inhibition (girls β = -0.290, t = 2.601, p = .010, see Figure 2.2) (boys β = -0.195, t = 2.742, p = .030, see Figure 2.5) and social preference. Consequently, endorsing affective social goals for both boys and girls who lacked confidence, were insecure/fearful, quick tempered, irritable, moody led to a lower level of social preference. In sum, a higher level of self-reported affective social goals led to increased peer-reported social preference when paired
with teacher-reported sociable traits (low inhibition), but decreased levels of social preference when paired with negative affect and high inhibition temperaments.

Table 2.2

Descriptive statistics of study variables

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impulsivity</td>
<td>452</td>
<td>9.00</td>
<td>62</td>
<td>30.29</td>
<td>11.69</td>
</tr>
<tr>
<td>Low impulsivity</td>
<td>458</td>
<td>7.00</td>
<td>49</td>
<td>31.68</td>
<td>8.47</td>
</tr>
<tr>
<td>High inhibition</td>
<td>450</td>
<td>6.00</td>
<td>39</td>
<td>19.7</td>
<td>7.13</td>
</tr>
<tr>
<td>Low inhibition</td>
<td>456</td>
<td>6.00</td>
<td>42</td>
<td>27.37</td>
<td>6.43</td>
</tr>
<tr>
<td>Negative affect</td>
<td>457</td>
<td>4.00</td>
<td>28.0</td>
<td>13.35</td>
<td>5.98</td>
</tr>
<tr>
<td>Instrumental Social Goals</td>
<td>466</td>
<td>1.0</td>
<td>4.0</td>
<td>2.44</td>
<td>.63</td>
</tr>
<tr>
<td>Affective Social Goals</td>
<td>464</td>
<td>1.8</td>
<td>4.0</td>
<td>3.41</td>
<td>.402</td>
</tr>
<tr>
<td>Social preference</td>
<td>473</td>
<td>-1.71</td>
<td>2.73</td>
<td>.00</td>
<td>.944</td>
</tr>
</tbody>
</table>
### Table 2.3

**Correlation coefficients (Pearson’s R) of study variables**

*Note:* **. Correlation is significant at the 0.01 level (2-tailed).  
*. Correlation is significant at the 0.05 level (2-tailed).

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Preference</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Negative Affect</td>
<td>-.018</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. High Impulsivity</td>
<td>-.031</td>
<td>.872**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Low Impulsivity</td>
<td>.109*</td>
<td>-</td>
<td>-.642**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. High Inhibition</td>
<td>-.256**</td>
<td>.446**</td>
<td>.488**</td>
<td>-.465**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Low Inhibition</td>
<td>.309**</td>
<td>-</td>
<td>-.199**</td>
<td>.638**</td>
<td>-.636**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Instrumental Social Goals</td>
<td>.022</td>
<td>.106*</td>
<td>.112*</td>
<td>-.092*</td>
<td>.032</td>
<td>.00</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Affective Social Goals</td>
<td>.014</td>
<td>-.035</td>
<td>-.096*</td>
<td>.149**</td>
<td>-.106*</td>
<td>.12*</td>
<td>.00</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9. Gender</td>
<td>-.001</td>
<td>-.016</td>
<td>-.019</td>
<td>.084</td>
<td>.008</td>
<td>-.024</td>
<td>-.121*</td>
<td>.136**</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 2.4

*Moderation of the Relationship between Temperament Factors and Social Preference by Instrumental Social Goals (Female Participants)*

<table>
<thead>
<tr>
<th>Temperament Factor</th>
<th>β coefficient (Moderating Effect of Instrumental Social Goals)</th>
<th>$t$-test statistic</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Affect</td>
<td>0.013</td>
<td>0.116</td>
<td>.908</td>
</tr>
<tr>
<td>High Impulsivity</td>
<td>-0.010</td>
<td>0.215</td>
<td>.830</td>
</tr>
<tr>
<td>Low Impulsivity</td>
<td>0.060</td>
<td>0.359</td>
<td>.720</td>
</tr>
<tr>
<td>High Inhibition</td>
<td>-0.108</td>
<td>0.743</td>
<td>.458</td>
</tr>
<tr>
<td>Low Inhibition</td>
<td>0.181</td>
<td>1.904</td>
<td>.057</td>
</tr>
</tbody>
</table>

Table 2.5

*Moderation of the Relationship between Temperament Factors and Social Preference by Instrumental Social Goals (Male Participants)*

<table>
<thead>
<tr>
<th>Temperament Factor</th>
<th>β coefficient (Moderating Effect of Instrumental Social Goals)</th>
<th>$t$-test statistic</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Affect</td>
<td>0.039</td>
<td>0.301</td>
<td>.763</td>
</tr>
<tr>
<td>High Impulsivity</td>
<td>0.129</td>
<td>1.174</td>
<td>.240</td>
</tr>
<tr>
<td>Low Impulsivity</td>
<td>0.075</td>
<td>0.525</td>
<td>.600</td>
</tr>
<tr>
<td>High Inhibition</td>
<td>-0.114</td>
<td>1.776</td>
<td>.076</td>
</tr>
<tr>
<td>Low Inhibition</td>
<td>0.077</td>
<td>0.573</td>
<td>.567</td>
</tr>
</tbody>
</table>
Table 2.6

Moderation of the Relationship between Temperament Factors and Social Preference by Affective Social Goals (Female Participants)

<table>
<thead>
<tr>
<th>Temperament Factor</th>
<th>β coefficient (Moderating Effect of Affective Social Goals)</th>
<th>t-test statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Affect</td>
<td>-0.227</td>
<td>2.191</td>
<td>.028*</td>
</tr>
<tr>
<td>High Impulsivity</td>
<td>-0.147</td>
<td>1.886</td>
<td>.059</td>
</tr>
<tr>
<td>Low Impulsivity</td>
<td>0.091</td>
<td>0.647</td>
<td>.518</td>
</tr>
<tr>
<td>High Inhibition</td>
<td>-0.290</td>
<td>2.593</td>
<td>.010*</td>
</tr>
<tr>
<td>Low Inhibition</td>
<td>0.208</td>
<td>2.601</td>
<td>.009*</td>
</tr>
</tbody>
</table>

Note: * Significant (p < .05)

Table 2.7

Moderation of the Relationship between Temperament Factors and Social Preference by Affective Social Goals (Male Participants)

<table>
<thead>
<tr>
<th>Temperament Factor</th>
<th>β coefficient (Moderating Effect of Affective Social Goals)</th>
<th>t-test statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Affect</td>
<td>-0.229</td>
<td>2.423</td>
<td>.015*</td>
</tr>
<tr>
<td>High Impulsivity</td>
<td>-0.117</td>
<td>1.187</td>
<td>.235</td>
</tr>
<tr>
<td>Low Impulsivity</td>
<td>0.106</td>
<td>0.985</td>
<td>.325</td>
</tr>
<tr>
<td>High Inhibition</td>
<td>-0.195</td>
<td>2.742</td>
<td>.006*</td>
</tr>
<tr>
<td>Low Inhibition</td>
<td>0.177</td>
<td>2.170</td>
<td>.030*</td>
</tr>
</tbody>
</table>

Note: * Significant (p < .05)
Figure 2.1
Moderating Effect of Affective Social Goals on the relationship between Negative Affect and Social Preference for Female Participants

*Note:* Underline denotes significant path Beta

Figure 2.2
Moderating Effect of Affective Social Goals on the relationship between High Inhibition and Social Preference for Female Participants

*Note:* Underline denotes significant Beta
Figure 2.3
Moderating Effect of *Affective Social Goals* on the relationship between *Low Inhibition* and Social Preference for Female Participants

*Note:* Underline denotes significant Beta

Figure 2.4
Moderating Effect of *Affective Social Goals* on the relationship between *Negative Affect* and Social Preference for Male Participants

*Note:* Underline denotes significant Beta
Figure 2.5
Moderating Effect of Affective Social Goals on the relationship between High Inhibition and Social Preference for Male Participants

Note: Underline denotes significant Beta

Figure 2.6
Moderating Effect of Affective Social Goals on the relationship between Low Inhibition and Social Preference for Male Participants

Note: Underline denotes significant Beta
DISCUSSION

The main aim of the present study was to determine whether social goals moderate the relationship between temperamental traits and social preference (i.e., peer/social acceptance) in a sample that included children in the late childhood/early adolescent developmental period. We predicted that self-reported social goals would moderate the relationship between teacher-reported temperament and peer-reported social preference, and that affective goals would be protective, while instrumental social goals would worsen social outcomes for children high on impulsivity and negative affect.

Contrary to expectations, we found that instrumental social goals did not have a statistically significant moderating effect on the relationship between temperament and social acceptance. However, as expected, affective social goals were significant moderators for certain temperament factors. Surprisingly, and contrary to expectations and previous research, results indicated that the moderating effect of affective social goals between temperament traits and social preference was consistent across boys and girls, suggesting no significant gender differences.

Results of this study suggest interesting relationships between temperamental traits, social goals, gender, and social acceptance that has not been discussed in previous research. Most research on social motivation in children and adolescents is centered around its relation to aggressive behavior (Erdley, 1996 for a review; Crick & Dodge, 1996; Dodge, 1980; Dodge et al, 2002; Lochman et al, 1993). Similarly, there is very little previous research on links between temperamental traits and social acceptance, particularly in late childhood/early adolescence, although Ojanen, Gronros, and Salmivalli (2005) found that social behaviors (aggression, withdrawal, and prosocial behavior) mediate the relationship between social goals and
sociometric status. In the Ojanen et al study, goals predicted behaviors which, in turn, then affected the way peers viewed each other.

Although direct links between social goals and social status have not been previously reported in research, studies suggest that goals of dominance and power are related to aggressive behavior, whereas goals of communion and intimacy are related to prosocial behavior (Ojanen et al, 2005; Salmivalli et al, 2005). We also know that social behavior and status are closely linked (Coie, Dodge, and Kupersmidt, 1990 for a review). Thus, we expected instrumental social goals to decrease peer acceptance; however, we found that instrumental social goals did not have a significant moderating effect on the relationship between temperamental traits and social acceptance. On the other hand, affective social goals were significant moderators for certain temperamental traits. For both girls and boys, higher levels of endorsed affective social goals moderated the relationship between low inhibition and peer acceptance in a positive way. In other words, girls and boys who were sociable had higher levels of social acceptance if they endorsed affective social goals. This result is not surprising given that high levels of optimism and positive affect are predictive of peer acceptance for girls and high positive affect and low anxiety predict peer acceptance for boys (Oberle et al, 1010). Similarly, high levels of inhibition have been associated with low status (particularly for girls) (Hintsasen et al, 2010).

Interestingly, the relationships between high inhibition and peer acceptance and negative affect and peer acceptance were moderated negatively by affective social goals. Thus, children who lacked confidence, were insecure and fearful, and who were quick tempered, irritable, and moody yet endorsed higher levels of affective social goals tended to have lower peer acceptance. Therefore, higher levels of affective social goals lead to higher peer acceptance when paired with sociable traits, but lower peer acceptance when paired with negative affect and inhibited
temperamental traits. High levels of anxiety and inhibition in both genders has been shown to be correlated with low social status (Oberle et al, 2010; Hintsasen et al, 2010), but the fact that affective social goals amplified rather than protected this relationship is note-worthy and worth exploring further in future research. Perhaps it exemplifies children who want to have the intimacy and trusting relationships that friendship brings but do not engage in the types of social behaviors that could help foster such relationships. That is in contrast with children who lack those same social behaviors yet are happier spending time alone or have fewer or less intense affective motivation when it comes to developing and maintaining friendships.

**Future Directions and Limitations**

Our study has the benefit of multiple methods of report (peer, self, and teacher) and captures information about temperament and social goals from a large sample of children seldomly studied in that regard. It is worth noting, however, that longitudinal temperament data would have been ideal for such a study. Further, researchers currently studying the relationship between temperament and psychopathology make use of temperament measures that adhere more closely to the BIS/BAS model of Gray and others. (Bijttebier et al 2009; Kimbrel et al, 2007; Meyer, Johnson, & Winters, 2001). Similarly, our choice to use Smart PLS for the analyses also created a limitation. With PLS-SEM you can only evaluate a unidirectional effect of a moderator between one predictor and one outcome. It is possible that re-examining these relationships with bidirectional analyses would offer different and interesting results.

While social status is relatively stable and related to status from previous school years, peer rejection is even more stable and long lasting (Coie & Dodge, 1982; Sandstrom & Coie, 1999; Asher & Coie, 1990; Boulton & Smith, 1994). Peer rejection can lead to internalizing and externalizing problems (Asher & Coie, 1990; Sandstrom & Coie, 1999; Ladd, 1999; Coie et al,
1992; Boivin & Hymel, 1995; Rubin & Mills, 1988; Vitaro et al, 1990; Pederson et al, 2007; Parker & Asher, 1987), and school related difficulties (i.e., grade retention and adjustment difficulties) (Coie et al, 1992; Buhs & Ladd, 2001; Buhs 2005; DeRosier & Kupersmidt, 1994; Wentzel 1991; Wentzel & Asher, 1995). Given this sound research on the adverse outcomes of peer rejection, research illuminating connections between malleable factors such as social goals to social status/acceptance is important. In fact, social goal interventions have been successful in recent years (Garandeau, Lee & Salmivalli, 2014; Frey et al, 2005; Atria & Spiel, 2007).

Similarly, revealing connections between temperament and social status should help inform early intervention projects.

In addition to the trend towards early intervention projects, a major movement in schools across the country is the development of social emotional learning (SEL) programs and positive behavioral interventions and supports (PBIS). In his 1997 paper, Elias defines SEL as “the process of acquiring core competencies to recognize and manage emotions, set and achieve positive goals, appreciate the perspectives of others, establish and maintain positive relationships, make responsible decisions, and handle interpersonal situations constructively.” PBIS is a prevention strategy to reduce problematic behaviors through the use of behavioral/social learning, and organizational behavioral principles (Simonson & Segai, 2013; Bradshaw et al, 2008; Waasdorp and Bradshaw, 2012). As of 2017, school-wide PBIS has been implemented in over 7000 schools across the country (PBIS.org, 2017). Furthermore, studies measuring the effects of SEL programs suggest promising positive results (i.e., increased prosocial behavior, lower levels of problem behavior, less emotional distress, improved academic performance) (Zins et al., 2004; Greenberg et al., 2003; Catalano et al., 2002). Both PBIS and SEL include social learning and are well suited for the addition of social goal
interventions within their curricula. Our study adds to this discussion in important ways by illuminating links not only between temperament and sociometric status but the role of social goals for children with certain temperamental/personality traits (i.e., inhibition and negative affect).
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**APPENDIX A**

*Friendship Goals Scale (Instrumental/Affective) Items*

**Instrumental Items**
- Someone who can help me out with things
- A person who can protect me from bullies
- Someone who will not be looking to make friends with other kids while they are friends with me
- Someone who is really cool; hanging around them could make me look cool too
- Someone who has a lot of power and influence over other kids
- Someone who can help me be part of the winning team
- Someone who is really popular
- A person who will do what I ask or say
- A person who can help me get to be more popular
Someone who lets me decide what we’re going to do or which games we’re going to play
Someone who is loyal and will stick up with me
Someone who gets a lot of attention from other kids and gets me attention too

**Affective Items**
A person I can help out when he/she needs it
Someone who accepts me just the way I am even though I’m not good at some things
Someone who is considerate and thoughtful, and cares about how I feel
A person who I like to play with
Someone I like and who likes me
Someone who will stay best friends even when they’re mad at me
Someone who I can trust, so that I can talk about secrets and special things that I don’t talk to other kids about
Someone who has the same interests and believes the same things as me
A person who will treat me as their most important friend of all
Someone I admire and respect; a person I think is neat