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SOCIAL COGNITIVE DYNAMICS OF POPULARITY AND INDIRECT AGGRESSION: THE ROLE OF SOCIAL GOALS AND SOCIAL INTELLIGENCE

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KARMON D. DYCHES
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SOCIAL COGNITIVE DYNAMICS OF POPULARITY AND INDIRECT AGGRESSION: THE ROLE OF SOCIAL GOALS AND SOCIAL INTELLIGENCE

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

BY

_____
Dr. Lara Mayeux, Chair

_____
Dr. Teresa DeBacker

_____
Dr. Lynn Devenport

_____
Dr. Kirby Gilliland

_____
Dr. Luz-Eugenia Cox-Fuenzalida

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To 7th graders everywhere: Popularity is just another pretty package—it's what's on the inside that counts.

Acknowledgements

"Learning is not attained by chance, it must be sought for with ardor and attended to with diligence." –Abigail Adams

The work presented here, as all works of this nature are, is a testament to the love and long nights that were given in pursuit of a dream. Those who have been the crafters, creators, facilitators, or pursuers of such a dream know that chasing the moon oftentimes lends more to learning than the weavers could ever imagine. For this I owe many thanks.

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Abstract

This study investigated the social goals of adolescents and their use of indirect aggression. Additionally, it examined how gender, peer status (i.e. perceived popularity) and individual differences in social intelligence relate to adolescents' social goals and their use of indirect aggression. 109 seventh-graders completed a social goals measure and the Tromsø Social Intelligence Scale (TSIS; Silvera, Martinussen, & Dahl, 2001). Participants also completed a peer nomination assessment of popularity and indirect aggression. Results indicated reliable associations among social goals and peer-nominated indirect aggression. Gender, popularity, and social intelligence further moderated these associations. These findings suggest that the social goals of adolescents can be a motivating force to engage in hurtful behaviors and provide a framework from which peer relations researchers can improve peer relationships and be better equipped to intervene in indirect aggression.

Introduction

The evolution of social interactions and social behavior has driven the development of intellect (Buss, 1991). While prosocial behavior can be adaptive, it can also be just as adaptive to deny someone else a resource in order to gain one for yourself. Status striving is a universal phenomenon. The markers of such strivings can differ from culture to culture, but the underlying theme is always the control of scarce resources. The current study looked at one particular culture, the peer culture, and attempted to identify the markers and motivations of those who were best equipped to control resources and dominate their culture-specific hierarchy.

Aggression is one such tool that allows for the control of a resource while preserving the façade of prosociality when it is adaptive to do so. However, researchers have discovered that aggression has many faces. As current thinking in the field of developmental psychology conceptualizes aggressive behavior in a number of ways, it is important to understand these differences. One distinction refers to the differences between two forms of aggression: overt and indirect. Overt aggression refers to observable aggressive behaviors that involve physical or verbal assault. Indirect aggression is more covert in nature, and includes behaviors that are meant to be carried out "behind-the-back" as a low-cost way of harming others (Björkqvist, 1994). Indirect aggression includes behaviors that allow for the manipulation of one's social structure and often involves other members of a peer group as the medium of the assault (Björkqvist, Lagerspetz, Kaukiainen, 1992). Examples of indirect aggression are social manipulation, gossiping, or spreading rumors. Indirect aggression is considered to be a low-cost behavior in terms of the consequences associated with its use—as it is often

difficult to identify who started a rumor but relatively easy to identify who verbally assaulted or hit someone. The perpetrator's ability to deny any wrongdoing is part of the allure of using indirectly aggressive behaviors (Archer & Coyne, 2005; Björkqvist, 1994; Vallincourt, 2005). By using indirect aggression over other forms of aggression, the perpetrator is able to enact revenge or manipulate the social hierarchy while remaining insulated from negative peer-perceptions.

Researchers have only recently begun to understand the varying social goals associated with indirect aggression (e.g. Dyches and Mayeux, 2012). Clarifying the social goals of adolescents should inform many of the assumptions that peer relations researchers have about adolescents' use of aggressive tactics that have not been tested empirically. For example, it is a common assumption that adolescents who regularly use indirect aggression do so to bolster their own popularity among peers.

Choosing the right form of aggression under the right circumstance can give an individual a boost up on the social ladder. Employing that aggression appropriately and effectively can be even more beneficial. For instance, some researchers have found an association between indirect aggression and social intelligence (Peeters, Cillessen, & Scholte, 2010; Sutton, Smith, & Swettenham, 1999a). Others argue that any aggressive act is an indicator of poor social skills (e.g., Crick and Dodge, 1999). Peeters and colleagues (2010) have demonstrated that varying degrees of social intelligence can be found among adolescent bullies. However, not all adolescents who use indirect aggression are categorized as bullies, as bullying has been defined as a systematic abuse of power (Smith & Sharp, 1994). Thus, bullying can encompass indirectly aggressive behaviors, but it is not limited to these behaviors exclusively. Therefore, it is important

to understand social intelligence as it relates to the use of indirect aggression rather than bullies specifically. Moreover, indirect aggression is more prevalent among adolescents and more socially acceptable than are other types of bullying behaviors, such as physical and verbal aggression (Björkqvist, Lagerspetz, & Kaukiainen, 1992).

Indirect aggression and popularity are linked both concurrently and longitudinally (Cillessen & Mayeux, 2004), and researchers have often conjectured that popular adolescents use indirect aggression strategically to gain or maintain their high status (Cillessen & Mayeux, 2007). Popular peers are defined by their social prominence and visibility in the peer group; they are well-known by others, and enjoy a high level of dominance and influence (for a review, see Mayeux, Houser, & Dyches, 2011). Once at the top of a social hierarchy, it is important to maintain one's dominance, power, and control of valuable social resources. As indirect aggression is thought to be an adaptive behavior some popular adolescents employ to maintain popularity and social resources (Cillessen & Mayeux, 2007), this study aimed to address assumptions such as these, and add to the current body of literature on social intelligence, social goals, and indirect aggression.

Resource Control Theory supports the conceptual link between indirect aggression and social intelligence in adolescents' attainment of popularity and power (Hawley, 1999). Resource Control Theory conceptualizes the use of indirect aggression as behaviors that allow access to, and control of, scarce resources (like popularity). The school setting creates an environment where dominance and control of the social hierarchy provide desired access to popularity, power, friends, and dating opportunities. Those who are able to manipulate the social hierarchy to their advantage should have

better access to these resources (Hawley, 2003). Sometimes this involves prosocial behaviors, but other times it involves antisocial behaviors such as indirect aggression. *Bistrategic resource controllers* (those who successfully manipulate their social hierarchy using a combination of prosociality and aggressiveness) should have greatest access to those valuable resources. Hawley (2003) refers to individuals such as these as "superior competitors" and states that their competitive abilities may depend on two things: the strategies they employ to achieve desired goals and their personal characteristics (pg. 281). In theory, one factor can influence another, such that one's personal characteristics may enhance one's strategy choice. In the current study, social intelligence was considered as the possible personal enhancement factor. Thus, differences in social intelligence were assessed to examine the relationship between differing levels of socially intelligent adolescents and the social goals they endorsed. Furthermore, this study examined if the strategies adolescents employed (i.e. indirect aggression) depended on differences in goal endorsement and their level of social intelligence.

The specific goals of interest in this study were: *Dominance and resource control*, *popularity and status*, *friendship and intimacy*, *romantic*, *malicious*, *social stimulation*, *social information*, and *leadership* goals. These specific goals were chosen as previous research on indirect aggression has indicated that these are the most common goals associated with this form of aggression (see Archer & Coyne, 2005 for an integrated review). It is not clear whether adolescent's social goals are premeditated. However, if their aggressive behavior is associated with different social goals, then this might suggest that adolescents are motivated to use indirect aggression to achieve a

particular goal. Previous research by Owens, Shute, and Slee (2000), Dyches and Mayeux (2012), and others (e.g. Paquette & Underwood, 1999) have provided evidence in support of these specific social goals. However, these particular goals have yet to be tested all together in relationship to indirect aggression.

The current study investigated adolescent's social goals for using indirect aggression, as well as whether these goals differed by gender. It assessed how social goals differ depending on varying levels of social intelligence and popularity and whether gender further interacted with these variables. This study investigated whether the interaction of popularity and social intelligence predicted the endorsement of particular social goals. The following sections address each of these research goals in greater detail.

Indirect Aggression among Adolescents: What Are Their Goals?

Following the findings from an integrated review on the commonalities and differences within indirect, relational, and social aggression research, the focus herein was on indirect aggression—as the operational definition of indirect aggression allowed for a more encompassing framework of behaviors likely to be associated with a wide variety of social goals (Archer & Coyne, 2005). Archer and Coyne (2005) argue that the concept of indirect aggression is free from predetermined outcomes or particular goals, while the concepts of relational and social aggression have fixed goals associated with each type of aggression. For instance, social aggression is carried out with the goal of manipulating group acceptance or damaging the social standing of a peer, whereas relational aggression is carried out with the goal to damage or manipulate relationships. Indirect aggression, however, encompasses both socially and relationally aggressive

behaviors, as is evidenced in the definition: A "covert, 'behind-the-back,' form of aggression […] viewed as a low-cost way of harming others" (Archer & Coyne, 2005, p. 212). Therefore, a variety of social goals can be assessed in conjunction with indirectly aggressive behaviors. Assessing a wide variety of potential social goals should offer added insight into the usage of this form of aggression. Furthermore, the employment of indirect aggression may differ depending on a myriad of possible social goals, in contrast to the constrained goals associated with relational and social aggression.

Social goals are also an important aspect of peer relationships as they provide insight into the motivations behind the use of negative behaviors such as indirect aggression. Archer and Coyne (2005) take the position that "[a]ll forms of aggression can be viewed as social strategies, in that they have evolved and are currently used to pursue certain competitive goals" (p. 213).

Given the complexity of social interactions, differences in the social goals of adolescents reflect a myriad of possible aspirations—popularity, friendship, or even revenge—and these motivations are thought to translate into positive or negative behaviors, such as an increased use of indirect aggression to achieve a desired goal.

Evidence in support of the assumption that particular social goals can translate into the use of negative behaviors is most often highlighted when assessing gender differences in goal attainment (highlighted in the following section). However, one recent study looked at specific forms of aggression and the specific functions they served adolescents. Specifically, Dyches and Mayeux (2012) found different forms of indirect aggression to be associated with different social goals. For instance, gossiping

and rumor spreading were rated as serving the most malicious functions overall, while manipulation, social exclusion, telling secrets, and stealing friends were rated as serving friendship goals. Finally, manipulation and stealing a friend were also rated as serving status enhancement functions. Dyches and Mayeux discussed the need for the study of a broader range of goals, specifically relating to perceived popularity and potential developmental trends. While the current study does not intend to assess specific forms of indirect aggression, the goals associated with the use of indirect aggression are of interest.

Gender differences in the types of social goals. As mentioned previously, researchers have found evidence supporting differing social goals in regards to gender. For example, Rose and Asher (1999) found that girls endorsed relationship maintenance goals more than boys, whereas boys were more likely to endorse instrumental control and revenge goals. Indirect aggression has also been shown to be used in the pursuit of different social goals. For example, in one qualitative study, Owens and colleagues (Owens, Shute, & Slee, 2000) interviewed adolescent girls and found the most frequent reasons given for engaging in indirect aggression were to alleviate boredom or create excitement, to gain group acceptance, to perpetuate the status hierarchy in the peer group (including defending one's own position), and to retaliate for a previous act of aggression. While indirect aggression is not always intended to be hurtful, it is often described as hurtful in other studies (e.g. used out of anger or retaliation, Paquette & Underwood, 1999).

Jarvinen and Nicholls (1996) also explored the social goals of adolescents and found significant gender differences in the types of goals boys and girls endorse when

their peer relationships were considered. Here, boys were far more likely to have dominance and leadership goals, whereas girls were more likely to have intimacy and nurturance goals. Furthermore, boys viewed social success as having status, being tough, and entertaining others. Girls, however, were more likely to view social success as dependent on one's sincerity with friends. This study did not address the associations of social goals with engagement in indirect aggression. Nonetheless, other studies have demonstrated that boys typically use aggression to gain control (Archer & Parker, 1994; Boldizar, Perry & Perry, 1989), while girls used indirect aggression to "intrigue" or make a secret plan to do something indirectly damaging to someone else (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Grotpeter, 1995; Lagerspetz, Björkqvist, & Peltonen, 1988).

When indirectly aggressive behaviors are used the perpetrator has little risk of being caught (Vaillancourt, 2005). This is because verbal and physical aggressions are more overt and thus more observable, whereas indirect aggression is by definition more covert and less observable. Thus, identifying the perpetrator of indirect aggression is often difficult—as is identifying the perpetrator's intentions—allowing the perpetrator to deny responsibility and avoid accusations altogether (Björkqvist et al., 1992; Peeters et al., 2010). The ability to deny responsibility may be particularly important to girls as they have been shown to be more interested in building and maintaining close-knit relationships (Chung & Asher, 1996; Jarvinen & Nicholls, 1996; Ojanen, Grönroos, & Salmivalli, 2005; Rose & Asher; 1999), whereas boys are more interested in dominating the social hierarchy (Jarvinen & Nicholls, 1996; Pratto, Stallworth, Sidanius, & Siers, 1997; Sutton & Keogh, 2000). As social concerns vary by gender, the social goals

endorsed to achieve particular social aspirations should also differ among adolescent boys and girls.

Social Intelligence and Indirect Aggression

One focus that has recently been coupled with indirect aggression is that of the socially intelligent adolescent. Social intelligence is a multifaceted construct that was first introduced by E. L. Thorndike in 1920. A recent resurgence of interest has occurred in the peer relationship literature due to the work of Kaukiainen, Björkvist, Österman, Lagerspetz, and Forsblom in 1995. Kaukiainen and colleagues (1995) created a peer-nomination measure of social intelligence called the Peer-Estimated Social Intelligence (PESI) scale. Social intelligence, as they see it, consists of perceptual, cognitive-analytical, and behavioral skills that allow an individual to understand the thoughts and motivations behind peers' behaviors. Knowing one's own motivations and cognitions in regard to social behavior is also an important component of social intelligence, as it allows an individual not to fall prey to their own vices (Björkqvist, Österman, & Kaukiainen, 2000).

Researchers have often argued that aggression and social intelligence are not likely partners, as using aggressive tactics against one's peers suggests a social deficit, rather than social intelligence. However, the association between social intelligence and aggression depends on the type of aggression being assessed. Kaukiainen and colleagues (1999) found that indirect types of bullying behaviors were associated with social intelligence. Their definition of indirect aggression included behaviors that were carried out verbally, cautiously, and via social manipulation.

Sutton, Smith, and Swettenham (1999b) were among the first researchers to challenge the idea that all bullies are socially deficient. These authors argue that bullies are sometimes actually quite skillful in their manipulation tactics (Sutton, Smith, & Swettenham, 1999a). They further argue that some bullies are able to manipulate their peer group with specific intentions of changing its structure in order to obtain more power for themselves and state that "bullying is an anti-social and aggressive act…often carried out in a social way and in a social setting" (Sutton et al., 1999b, pp. 19).

Still, not all researchers have agreed that aggression can be a socially skillful behavior. Some view aggression as an indication of a deficit in one's Social Information Processing, or how children encode, interpret, and act in their social environment (Crick & Dodge, 1994). Thus, Crick and Dodge (1994, among others) take the stance that persistent aggression is indicative of deficiencies in a child's information processing style (e.g. encoding incorrect social cues, hostile attribution biases, defensiveness, and chronically aggressive behaviors). However, Crick and Dodge (1999) also argue that not all aggression is maladaptive, such as aggression carried out in self-defense. This study aims to assess indirect aggression globally, rather than focusing on the behaviors that are categorized as bullying behaviors (which often includes physical aggression). Thus, the social intelligence of an adolescent who uses indirect aggression occasionally to achieve a social goal should be different from the social intelligence of an adolescent who consistently uses indirect aggression as a "go-to" method for goal achievement (i.e. a bully).

Peeters and colleagues (2010) were the first to put the idea of the deficient bully versus the savvy bully to the test with a sample of adolescents. They found three distinct

groups of bullies: popular-socially intelligent, popular moderate, and low popularity-low social intelligence. The popular-socially intelligent group consisted of bullies who were socially intelligent, indirectly aggressive, and were perceived as popular by their peers. The popular moderate group consisted of bullies who received average scores on social intelligence, indirect aggression, and popularity. The low popular-low social intelligent group consisted of bullies who were high in indirect aggression but low in popularity and social intelligence. These groups were consistent across genders. This supports both arguments that there are groups of aggressive adolescents who are less socially intelligent (and perhaps engage in aggressive behaviors due to incompetency in Social Information Processing; Crick & Dodge, 1994), but also that some adolescents do seem to have the social competencies to successfully manipulate peer group structures via aggression, without compromising social status (Sutton et al., 1999a). Research suggests that bullies fall on a continuum of social skillfulness and popularity, however, the question still remains as to whether popular-socially intelligent adolescents really do set different goals from popular moderate and low popular-low socially intelligent adolescents.

How Social Goals Differ Depending on Social Intelligence. The socially intelligent adolescent should be capable of behaving in such a way as to produce a desired social goal, partly because they are more aware of the social surroundings and have better social and planning skills to pursue their goals. Evidence supporting this idea is scarce. A few studies have linked social intelligence in adolescence with a number of factors such as social awareness (Makovská & Kentoš, 2006), popularity (Meijs, Cillessen, Scholte, Segers, & Spijkerman, 2010), and indirect aggression

(Andreou, 2006; Wallenius, Punamäki, & Rimpelä, 2007). Given the current evidence, it seems just as children vary along a continuum of competent social cognition (Dodge & Feldman, 1990), so too should the social intelligence of adolescents who use indirectly aggressive tactics to pursue different social goals.

One study assessing links between aggression and digital game violence exposure among 10- and 13-year-old boys and girls, found that the 13-year-old boys (who scored higher on social intelligence) reported engaging in more indirect aggression than did the 10-year-old boys in the same study (Wallenius et al., 2007). As these authors point out, the older participants in this study who scored high on the social intelligence measure (PESI; Kaukiainen et al., 1999) were better able to assess a situation (and thus choose a more socially acceptable form of aggression), whereas their less socially intelligent peers relied on direct aggression instead. Links between indirect aggression and video game violence were less conclusive for girls, partly because girls tend to play video games less often. However, the girls in this study did score higher overall on the social intelligence measure than did the boys, suggesting that social intelligence should give adolescents an advantage when choosing which social goals to pursue and which behaviors to employ.

How social intelligence relates to adolescents' social goals and how their social goals relate to their use of indirect aggression, still needs clarification. Depending on the social intelligence of an adolescent, they may set very different goals for themselves when employing indirect aggression. This study also addressed this gap by assessing social intelligence and its relationship to adolescent's goals, as well as their use of indirect aggression.

Perceived Popularity

Researchers studying popularity have identified two distinct types: Sociometric popularity and perceived popularity (Parkhurst & Hopmeyer, 1998). Sociometric popularity traditionally indicates the likeability, or social preference of a particular child or adolescent among their peer group (Coie, Dodge, & Coppotelli, 1982). For clarity purposes, sociometric popularity will be referred to as *social acceptance* and perceived popularity as *popularity* from this point on. Social acceptance is typically associated with prosocial behaviors, sociability, and academic success (e.g. Adams, 1983: Coie, Dodge, & Kupersmidt, 1990; Erwin, 1994). Socially accepted adolescents are well-liked by their peers and are more likely to report friendlier and more sophisticated strategies in the pursuit of prosocial goals (Renshaw & Asher, 1983). In contrast, rejected adolescents (those who are not socially accepted) are more likely to display antisocial behaviors, social incompetency, externalizing behaviors in early childhood, have cognitive deficits, and dropout of school (Cillessen & Mayeux, 2004; Ladd, 2006; Newcomb, Bukowski, & Patee, 1993; Parker and Asher, 1987).

Socially accepted adolescents generally experience positive outcomes due to their status, whereas adolescents who are popular are more likely to have both positive and negative peer interactions. Unlike social acceptance, popularity is a measure of social visibility, power, or dominance (Parkhurst & Hopmeyer, 1998). Indirect aggression is highly correlated with popularity (Cillessen & Mayeux, 2004 & 2007). For this reason, popularity was the type of status of focus for this study. Popular adolescents have both antisocial and prosocial characteristics. For example, popular, low-accepted adolescents display low levels of prosocial behavior, act “stuck-up,” and

are less able to take teasing. However, when popular adolescents are also well-liked, more prosocial behaviors are displayed, they are seen as less "stuck-up," and viewed as dominant but not aggressive (Parkhurst & Hopmeyer, 1998). Early in childhood a significant overlap exists between social acceptance and popularity. However, over time the correlations between social acceptance and popularity decrease, especially for girls (Cillessen & Mayeux, 2004; LaFontana & Cillessen, 1999).

Generally, adolescents are quite concerned with their own popularity among peers (Bellmore, Villarreal, & Ho, 2011; Cairns & Cairns, 1991; Corsaro & Eder, 1990; O'Brien & Bierman, 1988; Rubin, Bukowski, & Parker, 2006; Schäfer, Korn, Brodbeck, Wolke, & Schulz, 2005; Swiatek, 1995). LaFontana and Cillessen (2010) found a curvilinear trend, with the prioritization of popularity peaking during adolescence and particularly in middle school. Adolescents in this study were concerned most with status enhancement—above friendship, achievement, following rules, prosocial behaviors, and even romantic interests. As this preoccupation likely translates into motivational factors for teens, it is important to understand the social cognitive correlates of popularity in adolescence.

How Social Goals Differ Depending on Popularity. While there is evidence that highlights the fact that adolescents do set social goals and engage in indirect aggression, this particular study addressed the social goals of adolescents in order to assess whether certain adolescents had the ability and foresight to enact socially savvy manipulation tactics (i.e. indirect aggression) and set different social goals to achieve a desired outcome. Until now, guesses have been made but not tested direclty. Peeters and colleagues propose that "popular-socially intelligent bullies, may use their skills to gain

dominance" (p. 1048) and that a popular adolescent's central position in the peer group may afford them even more comfort and stability in which to persuade others to believe their side of the story over the victim's (Peeters et al., 2010). The purpose herein is to address this assumption as well as other assumptions about social goals. For instance, popular youth may use their social savviness to their advantage which may be manifested in their social goals. Popular adolescents' social goals might also be very different from less popular, less socially intelligent adolescents who use the very same behaviors.

A number of studies have lent preliminary support to the idea that popular adolescents could have an added advantage when it comes to socially savvy techniques. For instance, popularity is more stable than social acceptance over time (Cillessen & Mayeux, 2004) which may allow popular adolescents to become effective leaders in their peer groups (Cillessen & Rose, 2005). This stability can also help popular adolescents become more aware of their social surroundings and it may serve as a unique opportunity to observe the peer group structure. A popular adolescent could have more opportunities to hear other's opinions, express their own opinions and thus better understand the structure of their peer group. By learning about their peer group they may develop a more comprehensive understanding of its inner workings and be better equipped to manipulate those within it. Alternatively, an adolescent may already have the prerequisites to reach the top of their peer hierarchy, but once on top, their skills are honed and their behavior changes in order to maintain that status. This connection has only been indirectly studied in the case of popularity. Andreou (2006) found that some cognitive aspects of social intelligence (such as social information

processing and social awareness) were more predictive of instances of indirect aggression than were behavioral aspects (such as social skills). This study will address this gap by looking at adolescents' social goals alongside their levels of popularity and social intelligence.

Associations of social goals and social intelligence: Moderation by popularity and gender. Indirect aggression has often been described as "girl aggression," and common stereotypes (even among researchers) view indirect aggression as a primarily feminine behavior. However, studies assessing gender differences in indirect aggression have been inconsistent (Crick, 1996; Crick, Bigbee, & Howes, 1996, Mayeux & Cillessen, 2008; Rys & Bear, 1997; Underwood, 2002). A recent meta-analysis found evidence for only a very small gender difference in the frequency of indirect aggression used, favoring girls from preschool through adolescence (Card, Stucky, Sawalani, & Little, 2008), suggesting that it remains important for researchers to continue to investigate indirect aggression among both genders.

Indirect aggression also tends to be more stable over time for girls than boys (Crick, 1996; Cillessen & Mayeux, 2004). Girls who use indirect aggression may continue to do so to maintain or enhance their popularity. However, there are costs associated with this strategy, as indirect aggression and low likeability are more strongly related for girls than for boys (Cillessen & Mayeux, 2004). Perhaps aggression, regardless of the form used, is seen as more socially unacceptable for girls, as the use of aggression goes against social norms that advise girls to be "nice" (Bem, 1981).

Previous research has shown that aggression is associated with status perception accuracy. For example, when popular adolescents are aware of their popular status, they

receive the most peer-nominations for being aggressive. Furthermore, these same adolescents show the greatest increases in aggression over time (Mayeux & Cillessen, 2008). These authors also found gender differences in the type of aggression displayed. Popular girls who knew they were popular received the most relational aggression peer-nominations and popular boys who were aware of their status were highly overtly aggressive.

In addition, the ability to be aware of one's own status and the status of others may be more indicative of the social structure of girls' peer groups. For instance, boys tend to aggregate in larger groups than girls (making them more well known among their peers), whereas girls tend to associate with smaller groups (allowing them to get to know their close friends on an intimate level; Rose & Smith, 2009). At first glance, it may seem like boys should be more aware of the social hierarchy given their interactions with many peers, however, the intricate nature of status hierarchies might be best observed on an intimate level. Evidence supporting this idea comes from findings that point to more accurate perceptions of popularity among girls than boys (LaFontana & Cillessen, 1999) as well as findings that highlight girls' higher levels of interpersonal understanding (Hall, 1984; LaFontana & Cillessen, 1999).

Finally, each gender may also have different advantages when it comes to the pursuit of popularity, as girls and boys are concerned with different ventures that can afford them popular status. Girls tend to be concerned with interpersonal issues whereas boys are more concerned with physical prowess (Youniss, McLellan, & Strouse, 1994). Preoccupations with athletic endeavors versus interpersonal pursuits might be indicative of different social goals set by boys and girls. While girls seem especially concerned

about their popularity (Youniss et al., 1994), boys score higher on measures of desire for social success (Sutton & Keogh, 2000). Also, popularity was prioritized over friendship, romantic interests, compassion, and rule adherence in both genders but was more pronounced in males (LaFontana & Cillessen, 2010). Perhaps girls ruminate over their status more so than boys, while boys actually desire to be socially successful and perhaps even to dominate their peer system (Tannen, 1990). As this preoccupation translates into motivational factors for teens, it is important to understand the cognitive correlates of popularity in adolescence.

Possible Interactions between Social Intelligence, Popularity, and Social Goals

LaFontana and Cillessen (1999) first brought the interaction of social cognition, popularity, and aggression to light by pointing out that "individual differences [had] been found in children's social cognition related to their level of aggressiveness" and that "…when perceived popularity [was] used, a stronger connection between peer status and social cognition [could] be found" (LaFontana & Cillessen, 1999, pp. 239). As discussed previously, Peeters and colleagues (2010) further addressed this issue in a recent study on the subtypes of bullies. They found three distinct groups that differed not only on their popularity levels but also on their social intelligence and aggressiveness. What is still lacking is the assessment of the goals of these socially intelligent and popular adolescents and of their counterparts, who may be less socially intelligent or popular. If indirect aggression demands some kind of social skill as researchers suggest (see Björkqvist et al., 1992; Björkqvist et al., 2000), and indirect aggression is one way to inflict pain onto unsuspecting others without getting caught (Björkqvist et al., 1992), then setting goals for the use of indirectly aggressive

behaviors—such as spreading rumors and manipulating others—should differ depending on a particular adolescent's social intelligence and popularity.

Indirect aggression is a paradox. While indirect aggression is generally associated with negative outcomes (such as low social acceptance; Cillessen & Mayeux, 2004), it has also been shown to serve positive functions for adolescents as well (such as gaining popularity; Rose, Swensen, & Waller, 2004). One possible reason that indirect aggression is associated with such a variety of positive and negative outcomes is that not all indirectly aggressive behaviors function in a similar fashion. As highlighted previously, certain types of indirect aggression facilitate the pursuit of different social goals (Dyches & Mayeux, 2012). Thus, one's level of popularity may influence the type of indirect aggression used in the pursuit of social goals. However, other research has suggested that the sheer frequency in which indirect aggression is used can influence status acquisition. For example, in a study by Cillessen and Borch (2006), indirect aggression was negatively correlated with social acceptance but positively related to popularity. That is to say, the more indirect aggression an adolescent used, the less likely their peers were to nominate them as socially accepted, but the more likely they were to nominate them as popular.

Indirect aggression, regardless of the form used, requires a social network to be effective (Björkqvist et al., 1992). Thus, girls and boys may use indirect aggression to gain status within their peer group (and the more indirect aggression used, the higher the adolescent's popularity, Cillessen & Mayeux, 2004). Therefore, indirectly aggressive behaviors may allow access to, or preservation of, popularity and power. The question then, is whether adolescents who are more socially powerful, who use indirect

aggression frequently, and are more socially intelligent have different goals in regards to their use of indirect aggression. The goals adolescents endorse should differ according to their level of popularity with peers, and thus the social milieu in which they find themselves, as popularity affords a different perspective of, and influence on, one's social environment.

Social intelligence involves social skill and perceptive ability (Kaukiainen et al., 1995; Makovská & Kentoš, 2006). While research on the perceptive abilities and social skills of popular adolescents is limited, Leff, Kupersmidt, and Power (2003) found support for the perspective taking abilities of so-called controversial adolescents (controversial peer status and popularity are closely related conceptually and empirically; Parkhurst & Hopmeyer, 1998).

Here, differing levels of social acceptance and use of indirect aggression played a role in the interpretations of other's aggressive actions. Controversial girls held more pessimistic beliefs about a hypothetical peer's ability to change if the peer had a reputation for being indirectly aggressive but had been nice to them on one occasion. Because controversial adolescents, generally, were less likely to foresee change within the hypothetical peer, these authors suggest that controversial adolescents' pessimistic attitudes were based on past experiences with peer groups and an increased understanding of ulterior motives. Others have also suggested (but not directly measured) that controversial and popular adolescents have heightened perspective taking abilities, as they tend to engage in higher amounts of indirect aggression (Andreou, 2006).

Ryan and Shim (2008) have assessed the social goals of popular, average, and unpopular adolescents. In their assessment, a negative relationship between social demonstration-approach goals (items like "It is important to me that other kids think I'm popular." and "My goal is to show other kids how much everyone likes me.") and prosocial behavior was found. Here, teachers and peers rated popular adolescents who endorsed social demonstration-approach goals as aggressive. These findings point towards the sometimes antisocial behaviors that adolescents engage in to achieve a higher status.

Summary

Adolescents may have a myriad of motivations behind their antisocial behaviors, such as popularity or power. By assessing their social goals, this study attempted to clarify the motivations behind indirect aggression, informing many assumptions surrounding adolescents' use of this type of behavior. An adolescent's popularity and social intelligence were hypothesized to influence the types of social goals s/he endorses, although direct evidence supporting this hypothesis is limited (Hawley, 1999; Makovská & Kentoš, 2006; Meijs et al., 2010). Furthermore, the particular goals assessed have yet to be tested together in regards to adolescent's use of indirect aggression. As adolescents in particular are preoccupied with popularity (Bellmore et al., 2010, Cairns & Cairns, 1991; Corsaro & Eder, 1990; O'Brien & Bierman, 1988; LaFantana & Cillessen, 2010; Rubin et al., 2006; Schäfer et al., 2005; Swiatek, 1995), and boys and girls seem to have differing motivations behind their social goals (Sutton & Keogh, 2000; Youniss et al., 1994), it is important to understand the differences in their social goals. The purpose of this study was to take previous assumptions about the

associations among popularity, indirect aggression, social intelligence, and social goals, and to test them empirically. There is still much to be learned about the goals of adolescents as they pertain to indirect aggression and social intelligence. This study expands the current literature to include a more comprehensive set of social goals, and addresses how social goals are related to adolescents' use of indirect aggression. It also investigated how social intelligence relates to the social goals adolescents pursue, and how social intelligence and social goals interact to predict adolescents' levels of indirect aggression.

Research Questions and Key Hypotheses

1) What social goals do highly indirectly aggressive adolescents endorse? Due to previous research on the link between indirect aggression and peer-perceived popularity (e.g., Mayeux et al., 2011), it was hypothesized that adolescents who were frequently nominated by their peers as using indirect aggression would endorse social goals associated with popularity and social power.

2) What is the association between social goals and social intelligence? Adolescents scoring higher on the Peer-Estimated Social Intelligence scale (PESI; Kaukiainen et al., 1999) have previously been described as being better at assessing social situations. Thus, it was hypothesized that socially intelligent adolescents would endorse social goals that allowed for a better appraisal of their social situation (Kaukiainen et al., 1999; Wallenius et al., 2007), such as social information and social stimulation goals to provide them with excitement when they are bored, or more information about their social environment (see Dyches & Mayeux, 2012).

3) What is the association between social goals and popularity? From the standpoint of Resource Control Theory (Hawley, 1999), it was hypothesized that popular adolescents would endorse social goals related to the control of social resources—such as *popularity and status* goals, *dominance and resource control* goals, *romantic* goals, and *leadership* goals.

4) Does popularity moderate the association between social intelligence and social goals? It was expected that the association between social intelligence and social goals would differ for adolescents who were low versus high in popularity among peers. For example, popular adolescents were expected to be motivated to either attain an even higher level of popularity and power or motivated to keep their current level of popularity and power. Thus, popular adolescents who were also high in social intelligence (and who were presumably better equipped to attain their social goals) were expected to endorse *dominance and resource control* goals, *popularity and status* goals, *friendship and intimacy* goals, *romantic* goals, *social stimulation* goals, *social information* goals, and *leadership* goals. Social goals that were not expected to be endorsed by socially intelligent, popular adolescents were social goals that were *malicious* in intent, as being callous towards one's peers would be indicative of a lack of social intelligence or social awareness (Makovská & Kentoš, 2006).

5) Is there further moderation by gender for the above questions? Previous research indicates that boys should be higher than girls on social goals such as *dominance and resource control* goals and *leadership* goals, whereas girls should be higher on communal goals such as *friendship and intimacy* goals (Jarvinen & Nicholls, 1996). Therefore, gender differences were expected in the social goals of adolescents

with differing levels of popularity and social intelligence, as preliminary evidence has been found in studies addressing social competence (girls; Buhrmester, 1990), goals, and forms of indirect aggression (Dyches & Mayeux, 2012). Looking specifically at research question #4, it was expected that the social goals of popular, socially intelligent girls would differ from the social goals of popular, socially intelligent boys.

6) Is there an interaction of social intelligence, popularity, and social goals that predicts adolescents' levels of indirect aggression? Higher levels of social intelligence and popularity were expected to interact with the endorsement of specific social goals in the prediction of indirect aggression. Specifically, higher levels of social intelligence and popularity in combination with social goals such as popularity and status goals, *romantic* goals, *social stimulation* goals, and *social information* goals were expected to predict higher levels of indirect aggression. Achieving one's social goals may require aggressive techniques that allow an adolescent to attain a desired goal without being seen as aggressive (Björkqvist et al., 1992). Some adolescents who use indirect aggression have better social skills and are more socially intelligent (Björkqvist et al., 1992; Björkqvist et al., 2000; Peeters et al., 2010). Therefore, popular adolescents who set social goals that require social intelligence were expected to engage in the highest levels of indirect aggression.

Method

Participants

Participants were recruited from a middle school in a small town in the Midwest. Letters describing the study were sent home to all parents of seventh-graders in the middle school during the spring semester of the school year. Parents were asked to

return a signed consent form if they wished for their child to participate. Participants were also asked to give their written assent before completing study materials. Fifty-one percent of the seventh-grade (53 males, 57 females, N =109 out of 216 total 7th graders) received permission to participate. One participant's data was dropped because he was unable to read packet materials without assistance. This resulted in a 50% participation rate (*M* age = 13.18, *SD* = 1.37, 52 males, 57 females). Data collection occurred across two school days. Demographic information was not collected from participants, but they came from a school district that serves a small, lower socioeconomic status community where approximately 85% of the students identify as European American and 75% of the children receive free or reduced lunch.

Measures

Social goals. The specific goals of interest in this study were: *dominance and resource control*, *popularity and status*, *friendship and intimacy*, *romantic*, *malicious*, *social stimulation*, *social information*, and *leadership* goals. These goals were chosen for study as they reflect the most common social goals endorsed by adolescents based on previous investigations (e.g. Jarvinen and Nicholls, 1996), as well as some of the dominant themes that have emerged in research on indirect aggression (e.g. Dyches & Mayeux, 2012; Owens et al., 2000).

(1) *Dominance and resource control* goals addressed the degree to which adolescents tried to dominate, influence, control, and have power over others, as well as resource goals such as trying to get one's way and trying to get what one wants (9 items; sample item: "I try to control other people."; α = .81). (2) *Popularity and Status* goals addressed the degree to which adolescents tried to be popular, or to be a part of

the "in-group" (7 items; sample item: "I try to make sure everyone knows who I am."; α = .85). (3) *Friendship and intimacy* goals assessed the degree to which adolescents liked sharing secrets, private thoughts, and private feelings, as well as the degree to which they liked it when they are able to maintain connectedness and closeness with their friends (9 items; sample item: "I like it when my friends understand how I feel."; α = .93). (4) *Romantic* goals assessed the degree to which adolescents tried to look better to the opposite sex, tried to make an opposite sex peer stop liking their "competition," and tried to gain attention from the opposite sex (4 items; sample item: "I try to make myself look better to the opposite sex."; α = .77). (5) *Malicious* goals assessed the degree to which adolescents tried to be mean, tried to hurt others, and tried to make others feel bad (4 items; sample item: "I try to be mean to other people."; α = .83). (6) *Social stimulation* goals assessed the degree to which adolescents tried to alleviate boredom, create excitement, and start drama (3 items; sample item: "I try to start drama to entertain myself."; α = .53). (7) *Social information* goals assessed the degree to which adolescents tried to obtain information about themselves, their social environment, the latest gossip, and the relationship status of others (6 items; sample item: "I try to find out about things I'm not supposed to know."; α = .81). Finally, (8) *Leadership* goals assessed the degree to which adolescents tried to be in charge and take on leadership roles (5 items; sample item: "I try to make sure I'm the leader."; α = .71).

Self-reports of social goals were assessed via ratings on a 7-point likert scale (1 = *not at all*, 7 = *very much*; see Appendix A). Items were randomly mixed to prevent order effects in participant responses. For each goal, the overall mean of the ratings for each social goal was used in analyses (see Table 1).

Social intelligence. Social intelligence was measured using the Tromsø Social Intelligence Scale (TSIS: Silvera, Martinussen, & Dahl, 2001). This self-report measure asked adolescents to answer 21 questions about three components of social intelligence: social information processing, social skills, and social awareness (see Appendix B). Seven items assessed social information processing (sample item: "I can predict how others will react to my behavior." α = .81). Seven items assess social skills (sample item: "I am good at getting on good terms with new people." α = .68). Finally, seven items also assessed social awareness (sample item: "I often hurt others without realizing it." [reverse scored]; α = .70).

Chronbach's alpha for the entire social intelligence scale was .65. Items were randomly mixed to prevent order effects in participant responses. The overall mean of all the social intelligence items was used in analyses (see Table 1).

Peer-perceived popularity. Participants were given a roster with code numbers associated with each grade-mate's name in order to facilitate the assessment of popularity. Unlimited same- and cross-sex nominations of "Who is most popular?" and "Who is least popular?" were allowed. This improved the ecological validity of the nominations as it allowed for more evenly distributed nominations among participants (Cillessen & Marks, 2011). Nominations for popularity and unpopularity were counted and then standardized within grade to a mean of zero and a standard deviation of 1. This gave each participant standardized *most popular* and *least popular* scores. The standardized *least popular* score was then subtracted from the standardized *most popular* score, resulting in an overall popularity score for each participant. Finally, this popularity score was then re-standardized within grade.

Indirect aggression. Participants used the same roster with code numbers associated with each peer's name as before in order to facilitate the assessment of indirect aggression. Nominations of those peers who engage in five different forms of indirect aggression were elicited. Unlimited same- and cross-sex nominations of peers who *exclude others from their group on purpose, steal friends from others, ignore or stop talking to others, tell secrets they promised not to tell,* and *spread rumors and gossip about others* were obtained (Crick, 1996; Björkqvist, Lagerspetz, Kaukiainen, 1992). The number of nominations for each item was counted and standardized within the grade to a z-score, resulting in five separate indicators of indirect aggression for each participant. The five scores were then averaged, resulting in a continuous composite score for indirect aggression used in all analyses. The intercorrelations of the five items were examined to ensure that they were sufficiently high. Indirect aggression items are typically correlated at .7 or above (e.g., Mayeux & Cillessen, 2008). For this study all indirect aggression items were significantly correlated with one another for both boys and girls (r range = .65 – .86).

Procedure

All measures and peer nominations were administered by trained research assistants and graduate students. Data was collected during the seventh-grade math classes. The classes convened throughout the day, so some participants filled out the survey packet in the morning, while others filled it out later in the day. Researchers obtained parental consent and student assent before measures were handed out. Privacy and confidentiality of the data was explained to all participants. Participants were then instructed to find their code number on the roster used for the peer-nominations and

record this number on the front of their packet. The research teams remained in the classrooms to answer questions until all rosters had been turned back in and all surveys were complete. The entire procedure took approximately 45 minutes to complete. Students who did not have parental consent or did not wish to participate in the study were given a puzzle packet containing math-related cross-word puzzles, Sudoku, and word-search problems to complete and were asked to work quietly at their desk until all packets had been turned in. Participants who finished the study survey early were also given puzzle packets and instructed to work quietly at their desk. Teachers and school officials were not allowed to view completed surveys. Participants were not compensated financially or with extra credit, but all children (participating or not) received a piece of candy or a pencil at the end of the testing session.

Results

As preliminary analyses, the means and standard deviations for all variables were calculated (see Table 1), and a one-way ANOVA with gender as the independent variable tested for gender differences in each construct. In addition, correlations among all study variables were conducted separately by gender. The remaining analyses assessed the associations of gender, social goals, social intelligence, perceived popularity, and indirect aggression in two series of eight hierarchical regression analyses. A Bonferroni correction to $p < .01$ was considered to account for the large number of statistical comparisons made, however the majority of the *p*-values that were between .05 and .01 were found in preliminary analyses in the ANOVA (girls scored higher than boys on social intelligence) and correlational findings (indirect aggression

correlated with *popularity and status* goals and *social information* goals for girls, as well as indirect aggression correlated with *popularity and status* goals for boys).

Preliminary Analyses for Research Questions 1 – 5

Means and standard deviations for social intelligence, popularity, indirect aggression, and the eight social goals (*dominance and resource control, popularity and status, friendship and intimacy, romantic, malicious, social stimulation, social information,* and *leadership* goals) are presented for boys, girls, and both genders in Table 1. Significant gender differences were tested in a one-way ANOVA. Boys and girls scored significantly different from one another on the Tromsø Social Intelligence Scale (TSIS; Silvera, Martinussen, & Dahl, 2001; F (1, 107) = 3.92, p = .05). Here, girls (M = 4.45) scored higher than boys (M = 4.21). Boys and girls significantly differed in peer-nominated popularity (F (1, 214) = 6.40, p = .01). Girls (M = .19) had higher popularity scores than boys (M = -.15). Boys and girls significantly differed in indirect aggression (F (1, 214) = 22.78, p < .001), with girls (M = .32) being more aggressive than boys (M = -.25). Gender differences were also significant for *friendship and intimacy* goals (F (1, 107) = 40.36, p < .001). Girls (M = 5.59) endorsed friendship goals more strongly than boys (M = 3.96). Finally, a significant gender difference was found for *social information* goals (F (1, 107) = 7.90, p < .01). Here, girls (M = 3.96) endorsed *social information* goals more strongly than boys (M = 3.22).

Associations between Gender, Social Intelligence, Popularity, and Social Goals

To examine the relationships between gender and social intelligence, popularity, indirect aggression, and the eight social goals (*dominance and resource control, popularity and status, friendship and intimacy, romantic, malicious, social stimulation,*

social information, and *leadership* goals) intercorrelations among each variable were obtained separately by gender (see Table 2). For girls, popularity was significantly correlated with indirect aggression, $r(55) = .59$, $p < .001$, and *romantic* goals $r(55) = .37$, $p < .01$. Indirect aggression was significantly correlated with *popularity and status* goals, $r(55) = .33$, $p < .05$, *malicious* goals, $r(55) = .27$, $p < .05$, and with *social information* goals, $r(55) = .27$, $p < .05$.

For boys, social intelligence was significantly correlated with *friendship and intimacy* goals, $r(50) = .39$, $p < .01$, *romantic* goals, $r(55) = .38$, $p < .01$, *social stimulation* goals, $r(55) = .51$, $p < .001$, and *social information* goals, $r(55) = .46$, $p < .001$. Popularity was significantly correlated with indirect aggression, $r(55) = .38$, $p < .001$, and *popularity and status* goals, $r(55) = .41$, $p < .01$. Finally, indirect aggression was significantly correlated with *popularity and status* goals, $r(55) = .30$, $p < .05$.

Hierarchical Regression Analyses: Research Questions 1 – 5

To further address research questions 1 – 5, eight hierarchical regressions were conducted with one of the eight different social goals as the dependent variable in each. Each analysis was identical in its specification except for the dependent variable. All steps are highlighted in Tables 3 – 10. These tables each present the standardized betas and *t* values for each predictor, including the R^2 and change in R^2 for each step. The main effect variables were centered before they were entered into the analyses. All significant interaction terms were explored in the manner described by Aiken and West (1991), using prototypical plots. An example model was set up in following manner: Step 1 included gender, social intelligence, indirect aggression, and popularity. Step 2 included all two-way interactions of gender, social intelligence, indirect aggression, and

popularity. Step 3 included three-way interactions of gender, social intelligence, indirect aggression, and popularity.

For the regression predicting *dominance and resource control* goals, results indicated no significant main effects or interactions on any of the independent variables (see Table 3).

For the regression predicting *popularity and status* goals, results indicated a significant main effect of popularity. Popularity was positively associated with endorsing *popularity and status* goals, $\beta = .24$, $t(109) = 2.36$, $p < .05$ (see Table 4).

For the regression predicting *friendship and intimacy* goals, results indicated two significant main effects. Girls more strongly endorsed *friendship and intimacy* goals, $\beta = .49$, $t(109) = 5.87$, $p < .001$, and socially intelligent adolescents endorsed *friendship and intimacy* goals more strongly, $\beta = .28$, $t(109) = 3.49$, $p < .001$ (see Table 5).

For the regression predicting *romantic* goals, results indicated two significant main effects. Socially intelligent adolescents more strongly endorsed *romantic* goals, $\beta = .28$, $t(109) = 2.95$, $p < .01$. There was also a positive association between popularity and *romantic* goals, $\beta = .24$, $t(109) = 2.41$, $p < .01$ (see Table 6).

For the regression predicting *malicious* goals, results indicated a significant two-way interaction effect. Social intelligence moderated the association between indirect aggression and malicious goals, $\beta = .33$, $t(109) = 2.85$, $p < .01$ (see Table 7). This result indicated that at low levels of social intelligence, there was a negative association between malicious goals and indirect aggression. Adolescents low in social intelligence and indirect aggression strongly endorsed malicious goals. At high levels of social

intelligence, there was a positive association between malicious goals and indirect aggression. Socially intelligent youths who were low in indirect aggression did not readily endorse malicious goals (see Figure 1).

For the regression predicting *social stimulation* goals, results indicated a significant main effect of social intelligence. Socially intelligent adolescents more strongly endorsed social stimulation goals, $\beta = .30$, $t(109) = 3.06$, $p < .01$ (see Table 8).

For the regression predicting *social information* goals, results indicated a significant main effect of social intelligence. Socially intelligent adolescents more strongly endorsed social information goals, $\beta = .31$, $t(109) = 3.43$, $p \leq .001$ (see Table 9).

For the regression predicting *leadership* goals, results indicated no significant main effects or interactions for any of the independent variables (see Table 10).

Hierarchical Regression Analyses: Research Question 6

There were a number of consistencies across all eight regressions outlined in this section. These consistencies will be highlighted first, and then the remaining significant results will be addressed systematically. To assess if an interaction of social intelligence, social goals, or gender predicts adolescents' levels of indirect aggression, eight hierarchical regressions were conducted with indirect aggression as the dependent variable in each. Each analysis was identical in its specification except for the social goal that was included. All steps are highlighted in Tables 11 – 18. These tables each present the standardized betas and *t* values for each predictor, including the R^2 and change in R^2 for each step. The main effect variables were centered before they were

entered into the analyses. All significant interaction terms were explored in the manner described by Aiken and West (1991), using prototypical plots.

An example model was set up in following manner: Step 1 included gender, popularity, social intelligence, and *dominance and resource control* goals. Step 2 included all two-way interactions of gender, popularity, social intelligence, and *dominance and resource control* goals. Finally, Step 3 included all three-way interactions of gender, popularity, social intelligence, and *dominance and resource control* goals.

Two significant main effects were consistent across all eight hierarchical regressions. Girls were more likely to be nominated by a peer as indirectly aggressive. Popularity was consistently positively associated with indirect aggression, which is also consistent with the correlational findings (see Tables 11 – 18).

In regards to the gender X popularity interaction within each regression predicting indirect aggression, gender acted as an exogenous variable. In other words, gender influenced indirect aggression and popularity nominations but indirect aggression and popularity nominations cannot influence gender, thus gender was external to the relationship between indirect aggression and popularity (Lindenberger & Pötter, 1998). Furthermore, when gender was controlled for in a partial correlation, popularity and indirect aggression were significantly correlated, $r(214) = .43$, $p < .001$. As such, this two-way interaction acted as a suppressor and was removed from the model in all regressions addressing this particular research question.

Finally, one significant three-way interaction effect emerged in five of the eight regressions (those including *friendship and intimacy*, *romantic*, *social stimulation*,

social information, and *leadership* goals; see Tables 13, 14, 16, & 17), in that gender and popularity moderated the association between social intelligence and indirect aggression. While, this interaction did not include a social goal, and thus did not address a primary research question, the results were plotted for the regression predicting indirect aggression from *friendship and intimacy* goals in order to interpret the nature of the interaction. At high levels of popularity for girls but low levels of popularity for boys, there was a positive association between social intelligence and indirect aggression. Socially intelligent, popular girls were particularly high in indirect aggression. At low levels of popularity for girls but high levels of popularity for boys, there was a negative association between social intelligence and indirect aggression. Socially intelligent, unpopular girls were particularly low in indirect aggression (see Figure 2). The remaining findings depicted below are unique in their results.

For the regression predicting indirect aggression from *dominance and resource control* goals, results indicated that popularity moderated the association between dominance/resource control goals and indirect aggression, $\beta = .61$, $t(109) = 4.17$, $p < .001$ (see Table 11). Prototypical plots indicated that at high levels of popularity, there was a positive association between dominance goals and indirect aggression. Popular youths who endorsed dominance goals were particularly high in indirect aggression. There was no association between dominance goals and indirect aggression at low levels of popularity.

Further moderating this two-way interaction between popularity and dominance goals was an interaction with social intelligence $\beta = .55$, $t(109) = 3.86$, $p < .001$. Prototypical plots indicated that at high levels of popularity and social intelligence,

there was a positive association between dominance goals and indirect aggression. The same was true for low popular, low socially intelligent youths but this association was stronger for popular, socially intelligent youths. At low levels of popularity but high levels of social intelligence, there was a negative association between dominance goals and indirect aggression. The same was true for popular but socially unintelligent youths, but this association was stronger for unpopular, socially intelligent adolescents (see Figure 3).

For the regression predicting indirect aggression from *popularity and status* goals, results indicated that popularity moderated the association between popularity and status goals and indirect aggression, $\beta = .44$, $t(109) = 5.54$, $p < .001$ (see Table 12). Probing this interaction indicated a positive association between popularity and the endorsement of popularity goals. Popular adolescents who endorsed popularity goals were high in indirect aggression. There was no association between popularity goals and indirect aggression at low levels of popularity.

Further moderating this two-way interaction was a further interaction with social intelligence, $\beta = .33$, $t(109) = 2.62$, $p < .01$. At high levels of social intelligence and popularity, there was a positive association between popularity goals and indirect aggression. The same effect was found for low levels of popularity and social intelligence. At high levels of social intelligence and low popularity, there was a negative association between popularity goals and indirect aggression. The same but even stronger association was found for popular but low-socially intelligent adolescents (see Figure 4).

For the regression predicting indirect aggression from *friendship and intimacy* goals, there were no significant two-way interactions. However, the three-way interaction that emerged has previously been highlighted above as it was consistently found in four other regressions. As a reminder, gender and popularity moderated the association between social intelligence and indirect aggression (see Table 13 & Figure 2).

For the regression predicting indirect aggression from *romantic* goals, results indicated that popularity moderated the association between romantic goals and indirect aggression, $\beta = .39$, $t(109) = 3.83$, $p < .001$ (see Table 14). Prototypical plots indicated a positive association between romantic goals and indirect aggression at all levels of popularity. Popular adolescents who strongly endorsed romantic goals were highest in indirect aggression. Popular adolescents who did not strongly endorse romantic goals were the lowest in indirect aggression. Unpopular adolescents were high (but not as high as popular adolescents) in indirect aggression when they strongly endorsed romantic goals. Unpopular adolescents were low (but not as low as popular adolescents) in indirect aggression when they did not strongly endorse romantic goals.

Further moderating this two-way interaction was a significant interaction with gender, $\beta = .36$, $t(109) = 3.22$, $p < .01$. There was a positive association between romantic goals and indirect aggression for popular boys and girls. At high levels of popularity, girls and boys who endorsed romantic goals were high in indirect aggression. This association was particularly strong for popular girls. There was a negative association between romantic goals and indirect aggression for unpopular boys and girls, but this association was stronger for unpopular girls. Thus, at low levels of

popularity, girls and boys who endorsed romantic goals were low in indirect aggression (see Figure 5).

For the regression predicting indirect aggression from *malicious* goals, results indicated a significant main effect of malicious goals in addition to the effects of gender and popularity, $\beta = .17$, $t(109) = 2.07$, $p < .05$ (see Table 15). A two-way interaction was also significant. Social intelligence moderated the association between *malicious* goals and indirect aggression, $\beta = .66$, $t(109) = 2.68$, $p < .01$. At high levels of social intelligence, there was a positive association between malicious goals and indirect aggression. Socially intelligent youths who endorsed malicious goals were high in indirect aggression. This association was negative for adolescents low in social intelligence. Adolescents who were low in social intelligence but also endorsed malicious goals were low in indirect aggression (see Figure 6).

In addition to this two-way interaction, one three-way interaction emerged. Popularity and gender moderated the association between *malicious* goals and indirect aggression, $\beta = -.33$, $t(109) = -3.70$, $p < .001$. At high levels of popularity there was a positive association for girls between malicious goals and indirect aggression. Popular girls who endorsed malicious goals were high in indirect aggression. At low levels of popularity for boys there was a negative association for boys between malicious goals and indirect aggression. Boys who were unpopular but also endorsed malicious goals were low in indirect aggression (see Figure 7).

For the regression predicting indirect aggression from *social stimulation*, no significant two-way interactions emerged. However, the three-way interaction that

emerged has been highlighted above. Here again, gender and popularity moderated the association between social intelligence and indirect aggression (see Table 16).

For the regression predicting indirect aggression from *social information* goals, results indicated two significant two-way interactions. Popularity moderated the association between *social information* goals and indirect aggression, $\beta = .38$, $t(109) = 4.44$, $p < .001$, and social intelligence moderated the association between *social information* goals and indirect aggression, $\beta = .12$, $t(109) = 2.17$, $p < .05$ (see Table 17). The first interaction indicated a positive association at both levels of popularity between social information goals and indirect aggression. Popular adolescents who strongly endorsed social information goals were high in indirect aggression. Unpopular adolescents who strongly endorsed social information goals were also high in indirect aggression (but not as high as popular adolescents). The second interaction indicated that at high levels of social intelligence there was a positive association between social information goals and indirect aggression. Adolescents who strongly endorsed social information goals were high in indirect aggression. At low levels of social intelligence there was a negative association between social information goals and indirect aggression. Adolescents low in social intelligence, who strongly endorsed social information goals, were low in indirect aggression (see Figure 8).

Further explaining the two-way interaction between popularity and social information goals was a significant three-way interaction with social intelligence, $\beta = .27$, $t(109) = 2.26$, $p < .05$. There was a positive association between social information goals and indirect aggression for adolescents high in popularity and social intelligence as well as adolescents low in popularity and social intelligence. Adolescents high on

popularity and social intelligence who strongly endorsed social information goals were high in indirect aggression. The same was true for adolescents who were low in popularity and social intelligence. There was a negative association between social information goals and indirect aggression for adolescents high in social intelligence but low in popularity as well as adolescents low in social intelligence but high in popularity. Adolescents high in social intelligence but low on popularity who strongly endorsed social information goals were low in indirect aggression. The same was true for adolescents who were low in social intelligence but high in popularity (see Figure 9).

For the regression predicting indirect aggression for *leadership* goals, results did not indicate any significant two-way interactions. However, two three-way interactions were significant (see Table 18). Gender and popularity moderated the association between leadership goals and indirect aggression, $\beta = -.38$, $t(109) = -3.30$, $p < .001$. There was a positive association between leadership goals and indirect aggression for popular girls and boys as well as unpopular girls. Girls and boys who were high in popularity and strongly endorsed leadership goals were high in indirect aggression. The same was true for unpopular girls who strongly endorse leadership goals but this association was strongest for popular girls. There was a negative association between leadership goals and indirect aggression for unpopular boys. Unpopular boys who strongly endorsed leadership goals were not high in indirect aggression (see Figure 10).

For the second three-way interaction, popularity and social intelligence moderated the association between *leadership* goals and indirect aggression, $\beta = .40$, $t(109) = 3.39$, $p < .001$.

There was a positive association between leadership goals and indirect aggression for adolescents high in social intelligence and popularity as well as adolescents high in social intelligence but low in popularity. Adolescents who were high in social intelligence and popularity who strongly endorsed leadership goals were high in indirect aggression. This association was strongest for adolescents high in social intelligence and popularity. There was a negative association between leadership goals and indirect aggression for adolescents low in social intelligence and popularity as well as adolescents low in social intelligence but high in popularity. Adolescents who were low in social intelligence but high in popularity who strongly endorsed leadership goals were low in indirect aggression. The same was true for adolescents who were low in social intelligence and popularity who endorsed leadership goals, but this association was stronger for adolescents who were low on social intelligence but high on popularity (see Figure 11).

Discussion

This study investigated adolescents' social goals, their use of indirect aggression, and whether these goals differed by gender. I also assessed how social goals differ depending on varying levels of social intelligence and popularity and whether gender further moderated these associations. Current knowledge about the links between social intelligence and indirect aggression is limited. Assessing these links provided further insight into the dynamics of adolescents' use of indirect aggression. Finally, this study looked for possible interactions between social intelligence and popularity to see if there was a difference in the types of social goals adolescents endorsed.

Social Goals

Girls in this sample endorsed more *friendship and intimacy* goals and *social information* goals than did boys. Regression analyses also revealed that girls were more likely to endorse *friendship and intimacy* goals. This finding supports previous evidence that girls have more nurturance and intimacy goals than boys (Jarvin & Nicholls, 1996). Findings that girls tend to be more interested in building and maintaining close-knit relationships (Chung & Asher, 1996; Jarvinen & Nicholls, 1996; Ojanen, Grönroos, & Salmivalli, 2005; Rose & Asher; 1999), coupled with the finding that girls endorse friendship and intimacy goals, suggests that girls are motivated to maintain close bonds. However, the second finding adds to social goal research. Girls were more interested in learning about the latest gossip, dating partners, friendships, and information they were not supposed to know than boys were. This suggests that girls are not only more interested in maintaining close bonds, they are also interested in keeping tabs on the relationships and behaviors of others, perhaps to use as ammunition or as a defensive mechanism should they need to retaliate against a peer. Additional findings addressed below suggest that popularity and social intelligence further moderate the association of social information goals and the use of indirect aggression.

Indirect Aggression

Indirect aggression among adolescents and their social goals. Due to previous findings linking indirect aggression with popularity (Mayeux et al., 2011), it was hypothesized that adolescents who were frequently nominated by their peers as using indirect aggression would endorse social goals associated with popularity, status, and power. This hypothesis was partially supported. Indirect aggression was significantly

correlated at the bivariate level with *popularity and status* goals for boys and girls. While, indirect aggression did not significantly predict the endorsement of *popularity and status* goals in regression analyses, popularity and the endorsement of *popularity and status* goals did predict levels of indirect aggression. Popular adolescents who strongly endorsed popularity and status goals were seen as high in indirect aggression. Together, these findings provide support for the assumptions in peer-relationship literature that adolescents who use indirect aggression due so for popularity and status reasons.

Social Intelligence

How social goals differ depending on social intelligence. Addressing associations between social goals and social intelligence was the hypothesis that main effects would be seen for social intelligence, which would predict *social stimulation* and *social information* goals. These hypotheses were supported in that socially intelligent adolescents more strongly endorsed *social stimulation* and *social information* goals. These findings lend further support to the nature of social intelligence as adolescents who scored higher on the PESI (Kaukiainen et al., 1999) strongly endorsed social goals that indicated they started drama and found ways to entertain themselves when they were bored, as well as actively sought out information regarding their peer group to gain further information about their social surroundings. Gender did not further moderate these interactions.

In addition to the social goals hypothesized to be related to social intelligence, two regressions predicting a different social goal as one of the dependent variables revealed a significant main effect of social intelligence. Socially intelligent adolescents

also more strongly endorsed *friendship and intimacy* goals and *romantic* goals. The association between social intelligence and these two social goals sheds additional light onto the types of social goals socially intelligent adolescents set. It seems the socially intelligent adolescent in this sample was concerned with friendships, romantic interests, social stimulation, and gaining social information but not dominating their peer structure, having popularity and status, being malicious, or being a leader amongst their peers.

Social intelligence and indirect aggression also predicted *malicious* goals. Socially intelligent adolescents who were not indirectly aggressive strongly endorsed *malicious* goals. On the surface this finding is surprising. Being callous towards a peer should be indicative of a lack of social intelligence. However, the very nature of indirect aggression requires socially savvy and sometimes premeditated techniques to avoid getting caught. Socially intelligent adolescents endorsed malicious goals *only* when they were nominated as being highly indirectly aggressive. When social intelligence was low and indirect aggression was high, malicious goals were not endorsed as readily. Furthermore, there was not a significant main effect for maliciousness and social intelligence suggesting that indirect aggression was the driving variable behind this finding.

Socially intelligent adolescents who strongly endorsed *social information* goals were nominated as being high in indirect aggression. Socially intelligent adolescents who did not strongly endorse *social information* goals were the least likely to be nominated as indirectly aggressive. Given the nature of *social information* goals, it seems fitting that a socially intelligent adolescent who endorses a goal to gain more

information about their social environment via gossiping, spreading rumors, and finding out information they are not supposed to know would inevitably be nominated as indirectly aggressive by their peers. However, given the definition of social intelligence, the socially intelligent adolescent is supposed to be operationally equipped with socially savvy skills, awareness, and assessment of their social setting (Kaukiainen et al., 1999) it is a little troubling that their peers seem to be aware of their indirectly aggressive behaviors. But when the socially intelligent adolescent does not have *social information* goals and does not explicitly try to start rumors, gossip about others, find out who is dating whom, and get information they are not supposed to know, they were the least likely to be nominated as being indirectly aggressive. It seems that, regardless of the social intelligence of an adolescent, if they want 'in on the gossip' and to get the 'latest scoop,' their peers will view their behaviors as indirectly aggressive.

Popularity

How social goals differ depending on popularity. From a Resource Control perspective (Hawley, 1999), it was hypothesized that popular adolescents would endorse *popularity and status* goals, *dominance and resource control* goals, *romantic* goals, and *leadership* goals. This hypothesis was partially supported. Popular adolescents were more likely to endorse *popularity and status* goals and *romantic* goals, but not *dominance and resource control* goals or *leadership* goals. The fact that popular adolescents endorsed popularity and status goals lends support to the curvilinear trend suggesting that adolescents are most concerned with popularity in middle school (LaFontana & Cillessen, 2010). However, these researchers also found that popularity goals were prioritized over romantic goals. By looking at the social goals of popular

adolescents, this study was able parse apart which adolescents might be driving these prioritizations. It seems logical that those who are already popular might also prioritize other social goals.

Interestingly, popularity did not predict *dominance and resource control* goals or *leadership* goals. Perhaps contrary to assumptions surrounding popularity, popular adolescents do not desire to dominate or lead their peer structure (Parkhurst & Hopmeyer, 1998). Rather, this might be a side-effect of being popular, but it does not seem to be directly associated with the motivations of popular adolescents.

Associations of social goals and social intelligence: Moderation by popularity. It was hypothesized that the associations between social intelligence and social goals would differ for popular and unpopular adolescents. This hypothesis was not supported. Popular, socially intelligent adolescent did not endorse *dominance and resource control* goals, *popularity and status* goals, *friendship and intimacy* goals, *romantic* goals, *social stimulation* goals, *social information* goals, or *leadership* goals more than their peers who differed from them on social intelligence or popularity. However, this relationship changed when social intelligence, popularity, and social goals predict levels of indirect aggression. These findings are highlighted in the section addressing the interactions between social intelligence, popularity, and social goals.

The expectation that socially intelligent, popular adolescents would not endorse *malicious* goals was supported. However, given the amount of non-significant findings predicting social goals for social intelligence and popularity, it is hard to say if this is due to the nature of social intelligence (that being callous towards one's peers is indicative of a lack of social skill; Makovská & Kentoš, 2006), or rather an anomaly in

this particular set of analyses. An additional explanation coincides with the volitional versus reflective nature of the social goals of adolescents. The social goals of socially intelligent adolescents may not involve a metacognitive awareness of one's goal oriented behaviors. Rather, these goals may be volitional in nature. The hypothesis was made that if socially intelligent, popular adolescents endorsed malicious goals in addition to the social goals hypothesized to be associated with this type of adolescent, this would be indicative of a lack of awareness and perhaps even indicate a level of self-deception. However, no differences were found for socially intelligent, popular adolescents suggesting that social intelligence and popularity does not influence the types of goals adolescents endorse. Furthermore, this does not shed light onto the volitional or reflective nature of social goals. Future research looking at the premeditated nature of adolescents' aggressive behavior is needed.

Associations of social goals, popularity, and social intelligence: Moderation by gender. It was also hypothesized that gender would further moderate the relationship between socially intelligent, popular adolescents' social goal endorsement. Support for this hypothesis was not found. No three-way interactions emerged in the series of regressions predicting different social goals. As preliminary evidence for gender differences had been found in studies addressing social competence (girls; Buhrmester, 1990), goals, and forms of indirect aggression (Dyches & Mayeux, 2012), this was surprising.

However, in the prediction of indirect aggression different social goals were significantly associated with popularity and social intelligence. Pervious researchers have hypothesized that that there might be two different types of popular adolescents,

those who value status and use indirect aggression to maintain it, and those who may be less inclined to cling to their status via antisocial tactics (LaFontana & Cillessen, 2010; Mayeux & Cillessen, 2008). Social intelligence and popularity moderated the association between popularity and status goals and indirect aggression. Popular, socially intelligent adolescents who strongly endorsed popularity and status striving goals were nominated as being high in indirect aggression. However, if these same adolescents (popular and socially intelligent) did not endorse popularity and status striving goals they were no longer nominated as being indirectly aggressive. This provides support for the "two group" hypothesis and suggests that there are two different types of popular, socially intelligent adolescents who employ different behaviors depending on the endorsement of popularity and status goals.

Hypothesized Interactions between Social Intelligence, Popularity, and Social Goals

It was hypothesized that higher levels of social intelligence and popularity coupled with different social goals would predict higher levels of indirect aggression. Specifically, socially intelligent, popular adolescents who endorsed *popularity and status* goals, *romantic* goals, *social stimulation* goals, or *social information* goals would be nominated as engaging in high amounts of indirect aggression. This hypothesis was partially supported. Popular, socially intelligent adolescents who strongly endorsed *popularity and status* goals were nominated as being high in indirect aggression. Conversely, unpopular, socially intelligent adolescents who also strongly endorsed *popularity and status* goals received the lowest amount of nominations for indirect aggression. This interaction was not found for *romantic* goals and *social stimulation* goals, but it was found for two other social goals: *dominance and resource control*

goals and *leadership* goals. Popular, socially intelligent adolescents who strongly endorsed *dominance and resource control* and *leadership* goals were nominated as being high in indirect aggression.

Together, these findings fill a gap in the literature by addressing the social goals of socially intelligent, popular adolescents and their levels of indirect aggression. It supports and adds to the findings by Peeters and colleagues (2010) that found a continuum of socially intelligent, indirectly aggressive adolescents and highlights that these adolescents' levels of indirect aggression should depend on the social goals they endorse. Here it seems indirectly aggressive adolescents who were socially intelligent and popular tended to endorse *dominance and resource control* goals, *popularity and status* goals, *social information* goals, and *leadership* goals. This is particularly meaningful as it addresses some of the assumptions surrounding why adolescents might engage in indirect aggression.

For instance, many researchers have theorized that indirect aggression is used as a status acquisition tool (Cillessen & Borch, 2006) while others have conjectured that the use of indirect aggression bolsters social skills (Andreou, 2006). Others have even found evidence that indirect aggression may be used to alleviate boredom (Dyches & Mayeux, 2012). Evidence from this study found support for the first of these assumptions, but not the other two. Indirect aggression depends on the social skill of a popular adolescent and the social goals they have for themselves. If an adolescent had *popularity and status* goals, was socially intelligent, and popular, they were nominated as engaging in high amounts of indirect aggression. However, social intelligence alone did not emerge as a main effect in any of the regression analyses conducted with

indirect aggression as the dependent variable. Therefore, the sheer frequency in which an adolescent engages in indirect aggression is not related to their level of social intelligence. And finally, popular, socially intelligent adolescents did not endorse any *social stimulation* goals to alleviate boredom. While adolescents as a whole may engage in boredom reduction tactics via indirect aggression, socially intelligent adolescents in this sample did not endorse social stimulation goals. The same was true for the regression predicting s*ocial stimulation* goals which did not significantly predict levels of indirect aggression.

Popular girls who strongly endorsed *romantic* goals, *malicious* goals, or *leadership* goals were nominated as being high in indirect aggression. These three social goals seem particularly non-communal in nature. Perhaps peers perceived the actions of girls with these social goals as not adhering to the interconnected and intimate nature of a typical girl peer-group constitution (Cillessen & Mayeux, 2004; Rose & Asher; 1999). By endorsing goals that are non-communal to their gender specifically (*romantic* goals) or to all peers alike (*malicious* goals and *leadership* goals), other peers may see their actions as self-serving and overly aggressive.

The picture is less straightforward for peers not nominated as indirectly aggressive across these three social goals. Popular boys who did not strongly endorse *romantic* goals were least likely to be nominated by their peers as indirectly aggressive. In other words, popular boys who did not have romantic interests were not indirectly aggressive to their peers. This finding lends support to the idea that those who use indirect aggression do so to achieve romantic goals—as boys were also likely (next to girls) to be nominated as indirectly aggressive if they endorsed romantic goals. In

addition, unpopular boys who endorsed *malicious* goals were not nominated by their peers as indirectly aggressive. It is likely that these boys would have been nominated as physically aggressive, but as this type of aggression was not of interest in the present study, this is speculative. Finally, unpopular girls who did not endorse *leadership* goals were also among the peers not nominated as indirectly aggressive. As goals of leadership and being popular are related to nominations of indirect aggression it is logical that adolescents who were not trying to be leaders of their peer group and were not popular would not be nominated as indirectly aggressive. This finding lends further support to the antisocial nature of leadership and power among adolescents (Hawley, 1999 & 2003).

Limitations and Future Directions

There were a few limitations within this study. For instance, *malicious* goals might have been further explained had a measure of physical aggression been included. Unpopular boys and socially unintelligent boys were not nominated as indirectly aggressive even though they endorsed malicious goals. This suggests that these boys were using a different type of aggression to fulfill mean-spirited social goals. However, as social intelligence was among the variables of interest and indirect aggression has been linked to this type of intelligence (Kaukiainen et al., 1999), indirect aggression was chosen as the aggression of interest in this study. Physical aggression should be more indicative of a lack of social intelligence (Crick & Dodge, 1999). Future research looking at both types of aggression alongside social intelligence might shed further light onto the types of aggression associated with different social goals and how social intelligence moderates these associations.

The *social stimulation* goals scale had a relatively low alpha coefficient. The findings that surround this social goal should be interpreted with caution. Specifically, correlational findings for boys linking social intelligence and *social stimulation* goals, the main effect of social intelligence in the prediction of *social stimulation* goals, and the fact that *social stimulation* goals did not explain a significant amount of variance in the prediction of indirect aggression in any of the main effects or interactions for this regression.

The sample size in this study was appropriate for the analyses conducted. However, had more power been available, a possible four-way interaction in the hierarchical regressions predicting indirect aggression might have resulted in the explanation of additional variance. Given the gender and popularity findings surrounding *romantic, malicious*, and *leadership* goals in the prediction of indirect aggression, it would have been interesting to see if social intelligence further moderated these associations. However, given that gender and social intelligence did not moderate the association between these social goals and indirect aggression, this might be an indication that this relationship does not exist. Additional power would be needed to address this question fully.

In addition to assessing different types of aggression, future research looking at different individual differences in the social goals of boys and girls would add additional insight into some of the findings presented here. For instance, socially intelligent girls were not more likely to endorse any of the social goals assessed. Empathy has been linked to girls' behaviors in self-reports (Eisenberg & Fabes, 1998) but not in peer reports of empathy (Roberts & Strayer, 1996). Others have suggested

that the socialization of girls leads them to believe they are more empathetic (as this is more consistent with gender roles) but girls might actually have greater emotional responses and feelings of empathy as opposed to behaviors (Eisenberg, 2003).

Thus, empathy might explain why socially intelligent girls might not endorse some of the more gender-atypical social goals (like *dominance and resource control* or *malicious* goals). But empathy does not explain why socially intelligent adolescent girls were not more inclined to endorse *friendship and intimacy* goals, as being connected and close to one's friends fits well with gender-typical behaviors for girls (Cillessen & Mayeux, 2004; Rose & Asher; 1999). It is possible that the socially intelligent girl has learned to be defensive and closed-off to the sharing of intimate information among close friends. If the socially intelligent adolescent is able to understand the thoughts and motivations behind their peer's behaviors and know that their own thoughts and motivations could be used against them (Björkqvist et al., 2000), then the socially intelligent adolescent might be less willing to open-up to even their closest of friends. Future research would do well to investigate additional individual differences in the social goals of adolescents, such as empathy and defensiveness.

Finally, future research assessing the social goals of children and adolescents is needed to shed additional light onto the motivational aspects of child and teen aggression. By assessing developmental trends in the social goals of children and teens, we will be better equipped to intervene, and perhaps change the motivational direction, of children and adolescents who might be developmentally astray. As previous research (LaFontana & Cillessen, 2010) and current findings suggest that the social goals and motivational aspects of adolescent behaviors surround romantic (girls) and status

interests (boys), it is important that we not forget what motivates the developing individual to engage in hurtful, and sometimes devastating, behaviors.

Summary

This study addressed a number of assumptions surrounding adolescents' use of indirect aggression. By assessing the social goals adolescents endorse, we now have a better understanding of why some adolescents choose to employ hurtful behaviors and are better equipped to prevent this type of aggression from occurring. Social intelligence and popularity have been shown to be associated with indirect aggression, but our understanding of how these three constructs relate to each other was limited. Maliciousness was related to the use of indirect aggression, but friendship goals were not. This is simultaneously encouraging and disheartening. While adolescents might sometimes use indirect aggression to fulfill friendship goals, this is not the pervasive trend. However, adolescents who wanted to be mean to their peers were nominated as being indirectly aggressive towards peers. These adolescents have most likely discovered that they can often times 'get away' with their indirectly aggressive actions without getting caught by teachers—as is the covert nature of indirect aggression—in order to be malicious and mean to others. But often as is the case, their peers do seem to be aware of their bad behavior. Interventions targeted at adolescents like these would be a good starting place.

This study further addressed gender issues—informing the debate on how girls' social goals differ from boys' social goals as well as further explicating gender differences in the use of indirect aggression. Finally, as some adolescents tend to be preoccupied with romantic interests and popularity, over and above academics and

friendships (LaFontana & Cillessen, 2010), it remains paramount that researchers, parents, and teachers alike be aware of the specific motivations behind aggression.

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Table 1.

Means and Standard Deviations for Popularity and Indirect Aggression Nominations, Social Intelligence, and Social Goals

	Overall		Boys		Girls	
	M	*SD*	*M*	*SD*	*M*	*SD*
Social Intelligence	4.33	0.64	4.21	0.60	4.45*	0.67
Popularity	0.00	1.00	-0.15	1.10	0.19*	0.82
Indirect Aggression	0.00	1.00	-0.25	0.51	0.32***	1.16
Dominance/Resource Goals	2.44	0.94	2.47	0.94	2.42	0.95
Popularity/Status Goals	3.57	1.28	3.39	1.28	3.74	1.27
Friendship/Intimacy Goals	4.81	1.56	3.96	1.56	5.59***	1.09
Romantic Goals	3.53	1.39	3.60	1.45	3.46	1.33
Malicious Goals	1.36	0.59	1.28	0.45	1.43	0.68
Social Stimulation Goals	3.69	1.13	3.68	1.14	3.71	1.14
Social Information Goals	3.61	1.42	3.22	1.30	3.96**	1.44
Leadership Goals	2.31	1.13	2.38	1.13	2.24	1.14

Note. Significant gender differences are indicated by *$p < .05$, **$p < .01$, ***$p \leq .001$.

Table 2.

Intercorrelations between Social Intelligence, Popularity, Indirect Aggression, and Social Goals by Gender

Variable	1	2	3	4	5	6	7	8	9	10	11
1 Social Intelligence	-	.16	.20	.24	.12	.26	.20	.23	.12	.25	.22
2 Popularity	-.09	-	.59***	.17	.18	-.03	.37**	.12	.01	.14	-.03
3 Indirect Aggression	.15	.38***	-	.21	.33*	-.07	.24	.27*	.09	.27*	.11
4 Dominance/Resource Goals	.14	.19	.14	-	.64***	.26*	.40**	.74***	.62***	.71***	.64***
5 Popularity/Status Goals	.26	.41**	.30*	.68***	-	.30*	.47***	.32*	.65***	.75***	.63***
6 Friendship/Intimacy Goals	.39**	-.11	.11	.40*	.49***	-	.11	.10	.35**	.30*	.17
7 Romantic Goals	.38**	.22	.20	.53***	.68***	.28*	-	.14	.33*	.49***	.20
8 Malicious Goals	-.27	-.01	-.04	.37**	.05	-.03	-.06	-	.41**	.43***	.49***
9 Social Stimulation Goals	.51***	-.01	-.04	.42**	.44***	.38**	.42**	-.06	-	.68***	.51***
10 Social Information Goals	.46***	.18	.26	.59***	.71***	.43***	.50***	-.01	.55***	-	.57***
11 Leadership Goals	.18	.26	.19	.68***	.66***	.37**	.62***	.19	.28*	.41**	-

Note. Girls are above the diagonal, boys below the diagonal. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 3.

Summary of Hierarchical Regression Analysis for Aggression Predicting Dominance and Resource Control Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.08	.08
Gender	-.11	-1.12		
Social Intelligence	.18	1.82		
Indirect Aggression	.10	.87		
Popularity	.14	1.29		
Step 2			.09	.02
Gender x SI	-.02	-.14		
Gender x IA	-.08	-.21		
Gender x Pop	-.03	-.16		
SI x IA	.12	.91		
Pop x SI	.05	.37		
IA x Pop	-.01	-.05		
Step 3			.10	.01
Gender x IA x SI	-.07	-.12		
Gender x IA x Pop	-.49	-.56		
Gender x Pop x SI	-.11	-.51		
SI x IA x Pop	-.14	-.42		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 4.

Summary of Hierarchical Regression Analysis for Aggression Predicting Popularity and Status Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.17	.17***
Gender	.02	.23		
Social Intelligence	.15	1.63		
Indirect Aggression	.18	1.68		
Popularity	.24*	2.36		
Step 2			.20	.04
Gender x SI	-.18	-1.21		
Gender x IA	.09	.27		
Gender x Pop	-.19	-1.21		
SI x IA	-.01	-.08		
Pop x SI	-.01	-.05		
IA x Pop	-.03	-.18		
Step 3			.23	.03
Gender x IA x SI	-.63	-1.13		
Gender x IA x Pop	.32	.40		
Gender x Pop x SI	.32	1.51		
SI x IA x Pop	-.01	-.05		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 5.

Summary of Hierarchical Regression Analysis Predicting Friendship and Intimacy Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.36	.36***
Gender	.49***	5.87		
Social Intelligence	.28***	3.49		
Indirect Aggression	-.04	-.38		
Popularity	-.06	-.70		
Step 2			.32	.03
Gender x SI	-.14	-1.05		
Gender x IA	-.17	-.56		
Gender x Pop	.08	.56		
SI x IA	.04	.35		
Pop x SI	-.11	-1.00		
IA x Pop	-.11	-.68		
Step 3			.31	.02
Gender x IA x SI	.36	.73		
Gender x IA x Pop	-.41	-.58		
Gender x Pop x SI	-.07	-.39		
SI x IA x Pop	.38	1.35		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 6.

Summary of Hierarchical Regression Analysis Predicting Romantic Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.12	.156***
Gender	-.16	-1.63		
Social Intelligence	.28**	2.95		
Indirect Aggression	.06	.59		
Popularity	.24**	2.41		
Step 2			.24	.08
Gender x SI	-.24	-1.67		
Gender x IA	.01	.02		
Gender x Pop	-.07	-.46		
SI x IA	.06	.54		
Pop x SI	-.11	-.90		
IA x Pop	.36	2.06		
Step 3			.27	.03
Gender x IA x SI	-.66	-1.23		
Gender x IA x Pop	-.57	-.72		
Gender x Pop x SI	.33	1.60		
SI x IA x Pop	-.18	-.59		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 7.

Summary of Hierarchical Regression Analysis Predicting Malicious Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.06	.06
Gender	.06	.61		
Social Intelligence	.01	.15		
Indirect Aggression	.23	2.07		
Popularity	-.04	-.40		
Step 2			.213	.15**
Gender x SI	.22	1.51		
Gender x IA	.04	.11		
Gender x Pop	.11	.72		
SI x IA	.33**	2.85		
Pop x SI	-.002	-.02		
IA x Pop	-.30	-1.69		
Step 3			.24	.02
Gender x IA x SI	.61	1.11		
Gender x IA x Pop	-.16	-.20		
Gender x Pop x SI	-.29	-1.38		
SI x IA x Pop	-.07	-.20		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 8.

Summary of Hierarchical Regression Analysis Predicting Social Stimulation Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.09	.09*
Gender	-.04	-.41		
Social Intelligence	.30**	3.06		
Indirect Aggression	.02	.20		
Popularity	-.05	-.50		
Step 2			.15	.06
Gender x SI	-.37	-2.39		
Gender x IA	.38	1.07		
Gender x Pop	-.12	-.73		
SI x IA	.004	.03		
Pop x SI	.01	.08		
IA x Pop	.09	.46		
Step 3			.18	.04
Gender x IA x SI	-.47	-.83		
Gender x IA x Pop	-.62	-.76		
Gender x Pop x SI	.33	1.55		
SI x IA x Pop	-.34	-1.04		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 9.

Summary of Hierarchical Regression Analysis Predicting Social Information Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.22	.22***
Gender	.15	1.59		
Social Intelligence	.31***	3.43		
Indirect Aggression	.16	1.56		
Popularity	.08	.87		
Step 2			.25	.03
Gender x SI	-.22	-1.50		
Gender x IA	-.07	-.20		
Gender x Pop	-.18	-1.21		
SI x IA	.05	.47		
Pop x SI	.001	.01		
IA x Pop	.18	1.05		
Step 3			.28	.03
Gender x IA x SI	-.52	-.97		
Gender x IA x Pop	-.21	-.28		
Gender x Pop x SI	.25	1.26		
SI x IA x Pop	-.42	-1.37		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 10.

Summary of Hierarchical Regression Analysis Predicting Leadership Goals from Gender, Social Intelligence, Indirect Aggression, and Popularity

	β	*t*	R^2	ΔR^2
Step 1			.07	.07
Gender	-.13	-1.29		
Social Intelligence	.20	2.01		
Indirect Aggression	.03	.28		
Popularity	.13	1.22		
Step 2			.11	.05
Gender x SI	-.01	-.08		
Gender x IA	.12	.34		
Gender x Pop	-.18	-1.10		
SI x IA	.13	1.02		
Pop x SI	-.16	-1.25		
IA x Pop	-.16	-.82		
Step 3			.13	.01
Gender x IA x SI	.42	.71		
Gender x IA x Pop	-.21	-.24		
Gender x Pop x SI	.12	.52		
SI x IA x Pop	-.27	-.78		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 11.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Dominance and Resource Control Goals

	β	*t*	R^2	ΔR^2
Step 1			.28	.28***
Gender	.22*	2.53		
Popularity	.39***	4.52		
Social Intelligence	.15	1.72		
Dominance/Resource Goals	.08	.87		
Step 2			.41	.14***
Gender x SI	.06	.44		
Gender x D/R	.02	.11		
Pop x SI	.09	.86		
Pop x D/R	.61***	4.17		
SI x D/R	.05	.49		
Step 3			.54	.12***
Gender x Pop x SI	.03	.25		
Gender x Pop x D/R	-.14	-1.55		
Gender x SI x D/R	-.09	-.55		
Pop x SI x D/R	.55***	3.86		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 12.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Popularity and Status Goals

	β	*t*	R^2	ΔR^2
Step 1			.29	.29***
Gender	.20*	2.37		
Popularity	.35***	4.04		
Social Intelligence	.14	1.59		
Popularity/Status Goals	.15	1.68		
Step 2			.50	.21***
Gender x SI	-.01	-.08		
Gender x P/S	.22	1.88		
Pop x SI	.12	1.27		
Pop x P/S	.44***	5.45		
SI x P/S	.02	.28		
Step 3			.58	.08**
Gender x Pop x SI	.02	.17		
Gender x Pop x P/S	.09	.78		
Gender x SI x P/S	-.10	-.79		
Pop x SI x P/S	.33**	2.62		

Note. *$p < .05$, **$p \leq .01$, ***$p \leq .001$

Table 13.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Friendship and Intimacy Goals

	β	*t*	R^2	ΔR^2
Step 1			.27	.27***
Gender	.23*	2.31		
Popularity	.40***	4.68		
Social Intelligence	.17	1.94		
Friendship/Intimacy Goals	-.04	-.39		
Step 2			.29	.01
Gender x SI	.08	.49		
Gender x F/I	-.26	-1.24		
Pop x SI	-.01	-.08		
Pop x F/I	.01	.07		
SI x F/I	.08	.46		
Step 3			.43	.15***
Gender x Pop x SI	.33**	2.71		
Gender x Pop x F/I	.197	1.52		
Gender x SI x F/I	-.17	-.60		
Pop x SI x F/I	-.05	-.16		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Table 14.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Romantic Goals

	β	*t*	R^2	ΔR^2
Step 1			.28	.28***
Gender	.23**	2.51		
Popularity	.39***	4.40		
Social Intelligence	.15	1.67		
Romantic Goals	.05	.59		
Step 2			.39	.12**
Gender x SI	-.02	-.15		
Gender x R	.09	.75		
Pop x SI	-.01	-.13		
Pop x R	.39***	3.83		
SI x R	.10	1.07		
Step 3			.58	.18***
Gender x Pop x SI	.33***	3.94		
Gender x Pop x R	.36**	3.22		
Gender x SI x R	-.11	-.90		
Pop x SI x R	.24	1.72		

Note. *$p < .05$, **$p \leq .01$, ***$p < .001$

Table 15.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Malicious Goals

	β	*t*	R^2	ΔR^2
Step 1			.30	.30***
Gender	.19*	2.26		
Popularity	.39***	4.72		
Social Intelligence	.15	1.85		
Malicious Goals	.17*	2.07		
Step 2			.39	.09*
Gender x SI	-.09	-.66		
Gender x M	-.22	-.63		
Pop x SI	-.11	-1.13		
Pop x M	.31	.73		
SI x M	.66**	2.68		
Step 3			.52	.13***
Gender x Pop x SI	.002	.02		
Gender x Pop x M	-.33***	-3.70		
Gender x SI x M	.54	.89		
Pop x SI x M	.52	1.55		

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 16.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Social Stimulation Goals

	β	*t*	R^2	ΔR^2
Step 1			.27	.27***
Gender	.21*	2.45		
Popularity	.40***	4.74		
Social Intelligence	.16	1.77		
Social Stimulation Goals	.02	.20		
Step 2			.29	.02
Gender x SI	.06	.39		
Gender x SS	.07	.44		
Pop x SI	.03	.24		
Pop x SS	-.10	-.66		
SI x SS				
Step 3			.43***	.14
Gender x Pop x SI	.29*	2.31		
Gender x Pop x SS	.19	1.76		
Gender x SI x SS	-.07	-.47		
Pop x SI x SS	-.18	-.90		

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 17.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Social Information Goals

	β	*t*	R^2	ΔR^2
Step 1			.29	.29***
Gender	.19*	2.13		
Popularity	.38***	4.48		
Social Intelligence	.12	1.28		
Social Information Goals	.14	1.56		
Step 2			.46	.17***
Gender x SI	-.04	-.30		
Gender x SInfo	.11	.84		
Pop x SI	-.11	-1.25		
Pop x SInfo	.38***	4.44		
SI x SInfo	.12*	2.17		
Step 3			.57	.11***
Gender x Pop x SI	.22*	2.23		
Gender x Pop x SInfo	.15	1.09		
Gender x SI x SInfo	-.06	-.43		
Pop x SI x SInfo	.27*	2.26		

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 18.

Summary of Hierarchical Regression Analysis Predicting Indirect Aggression from Gender, Social Intelligence, Popularity, and Leadership Goals

	β	*t*	R^2	ΔR^2
Step 1			.27	.27***
Gender	.21*	2.46		
Popularity	.40***	4.65		
Social Intelligence	.16	1.82		
Leadership Goals	.02	.28		
Step 2			.31	.03
Gender x SI	.08	.57		
Gender x L	.05	.31		
Pop x SI	-.07	-.66		
Pop x L	-.04	-.38		
SI x L	.22	1.78		
Step 3			.50	.20***
Gender x Pop x SI	.28**	2.86		
Gender x Pop x L	-.38***	-3.30		
Gender x SI x L	.08	.46		
Pop x SI x L	.40***	3.39		

Note. *$p < .05$, **$p < .01$, ***$p \leq .001$

Figure Captions

Figure 1. Two-Way Interaction of Social Intelligence and Indirect Aggression in the Prediction of Malicious Goals

Figure 2. Three-Way Interaction of Social Intelligence, Popularity, and Gender in the Prediction of Indirect Aggression (Friendship and Intimacy Goals)

Figure 3. Three-Way Interaction of Dominance and Resource Control Goals, Popularity, and Social Intelligence in the Prediction of Indirect Aggression

Figure 4. Three-Way Interaction of Popularity and Status Goals, Popularity, and Social Intelligence in the Prediction of Indirect Aggression

Figure 5. Three-Way Interaction of Romantic Goals, Popularity, and Gender in the Prediction of Indirect Aggression

Figure 6. Two-Way Interaction of Malicious Goals and Social Intelligence in the Prediction of Indirect Aggression

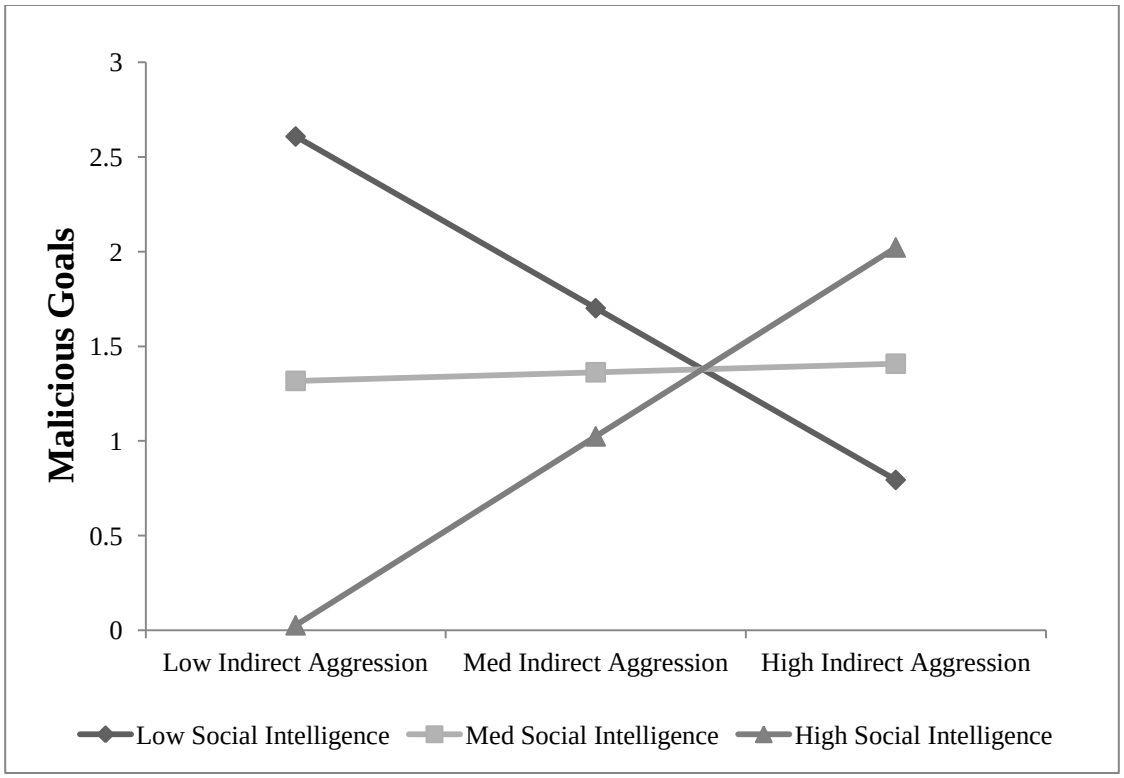
Figure 7. Three-Way Interaction of Malicious Goals, Popularity, and Gender in the Prediction of Indirect Aggression

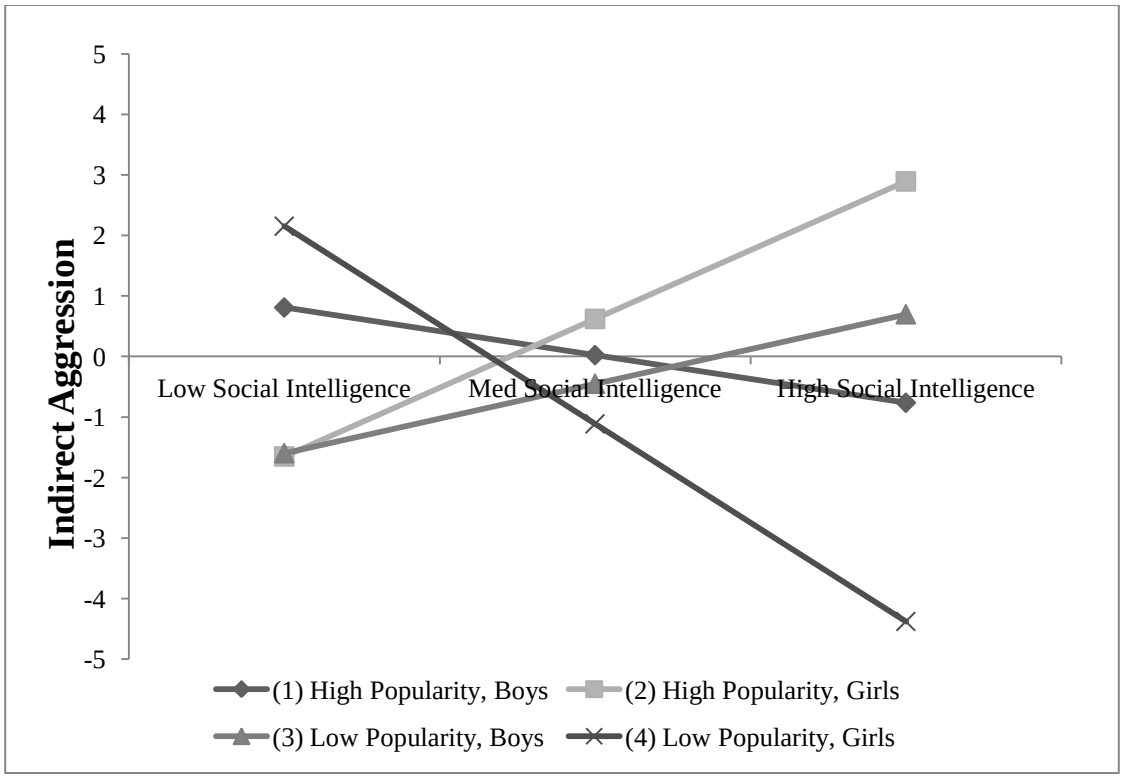
Figure 8. Two-Way Interaction of Social Information Goals and Social Intelligence in the Prediction of Indirect Aggression

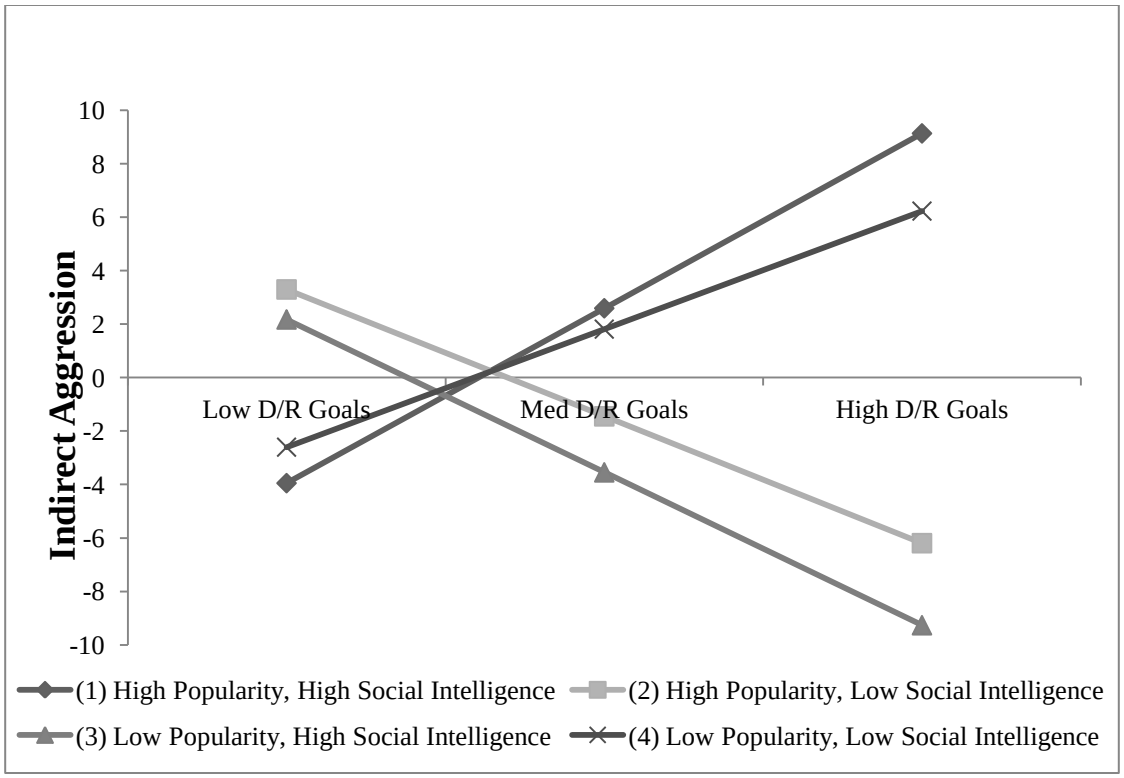
Figure 9. Three-Way Interaction of Social Information Goals, Popularity, and Social Intelligence in the Prediction of Indirect Aggression

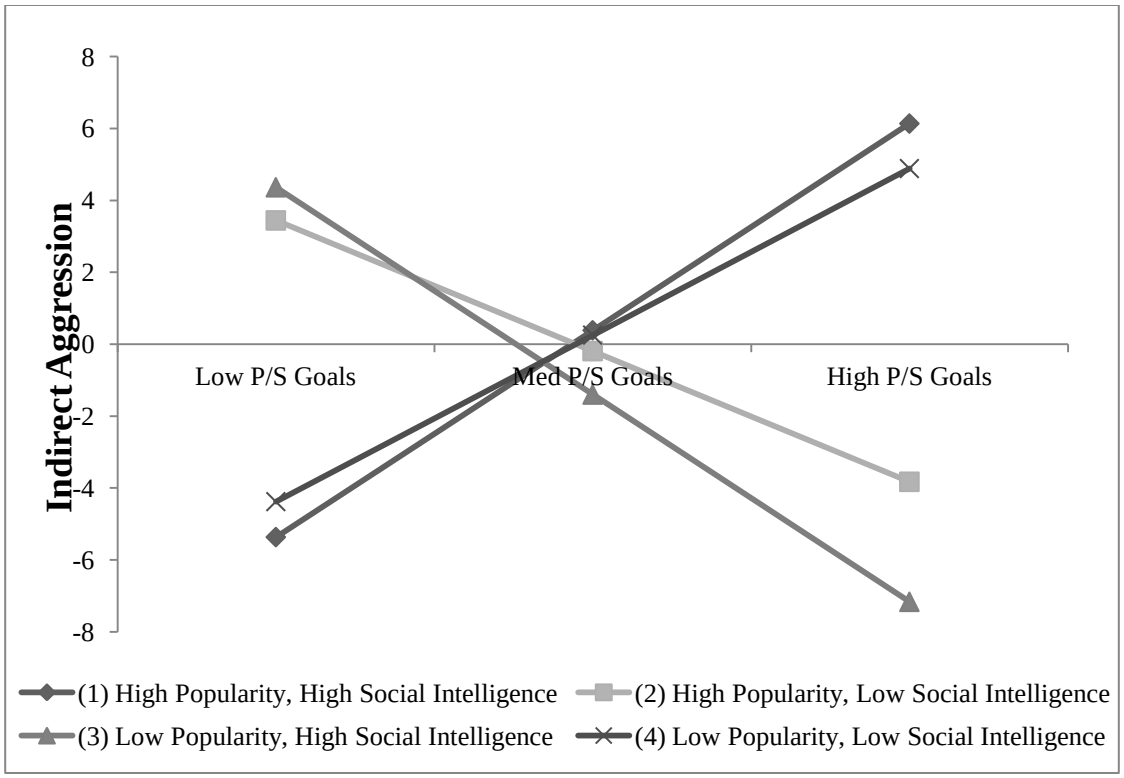
Figure 10. Three-Way Interaction of Leadership Goals, Popularity, and Gender in the Prediction of Indirect Aggression

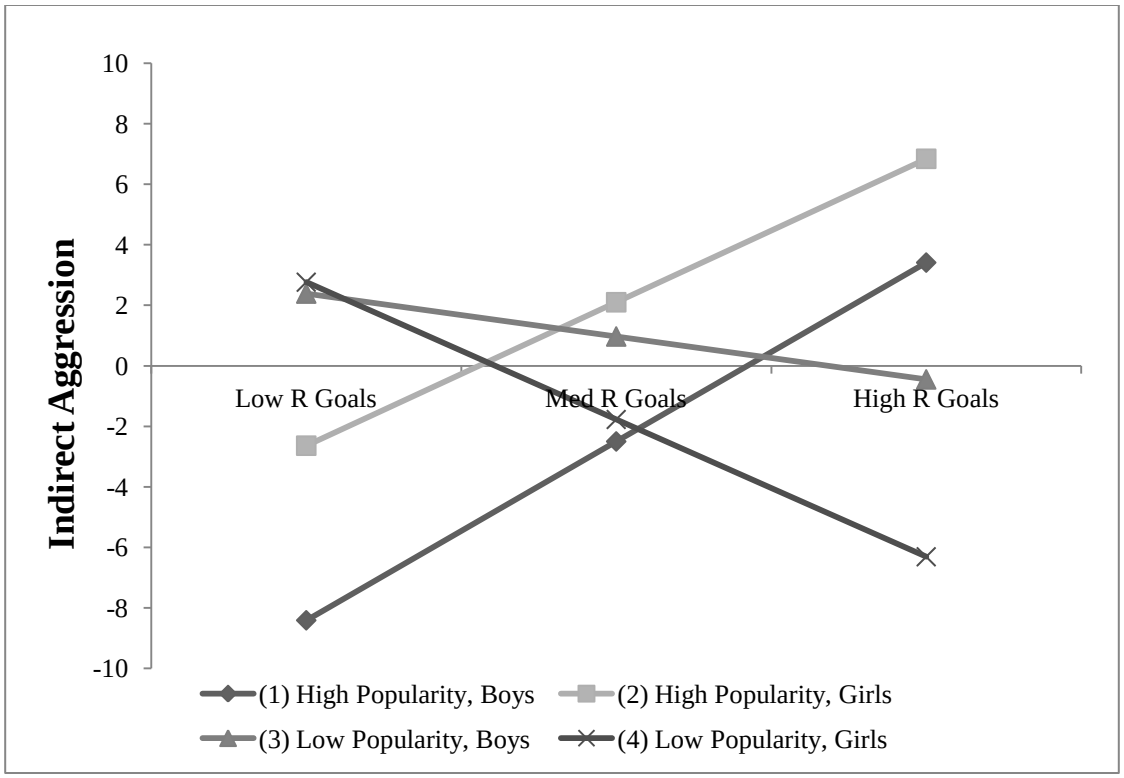
Figure 11. Three-Way Interaction of Leadership Goals, Popularity, and Social Intelligence in the Prediction of Indirect Aggression

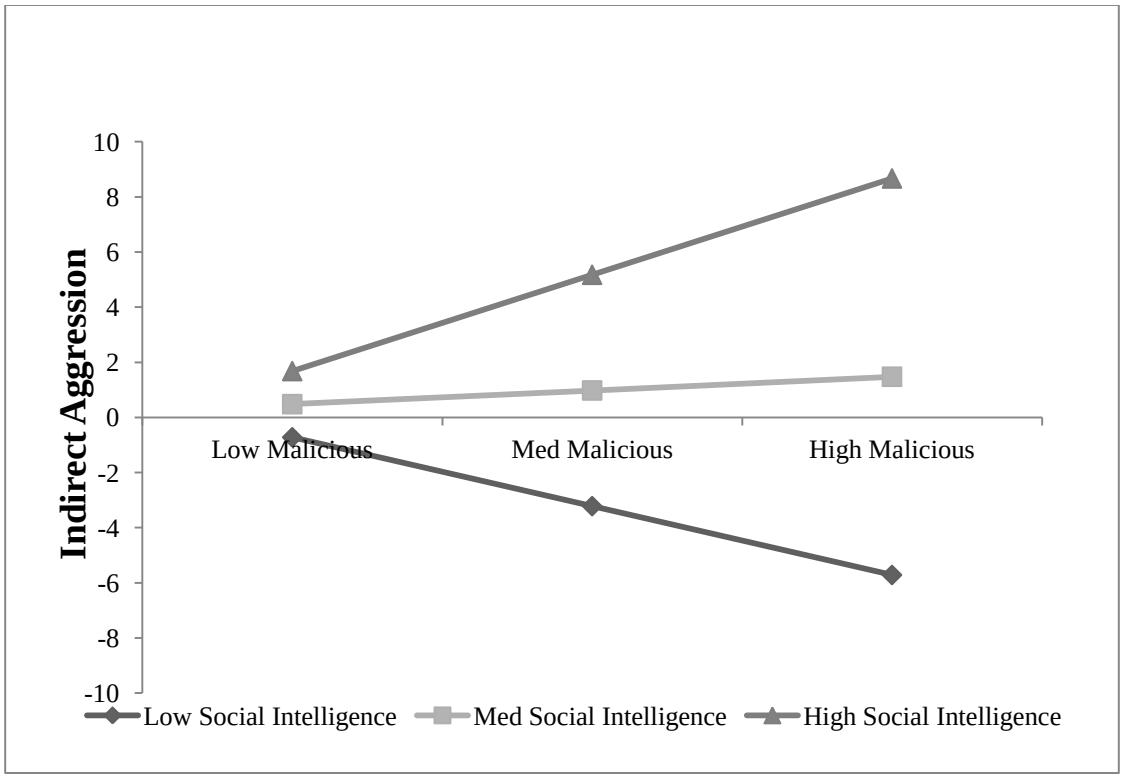

3
2.5
2
1.5
1
0.5
0
Malicious Goals
Low Indirect Aggression
Med Indirect Aggression
High Indirect Aggression
Low Social Intelligence
Med Social Intelligence
High Social Intelligence

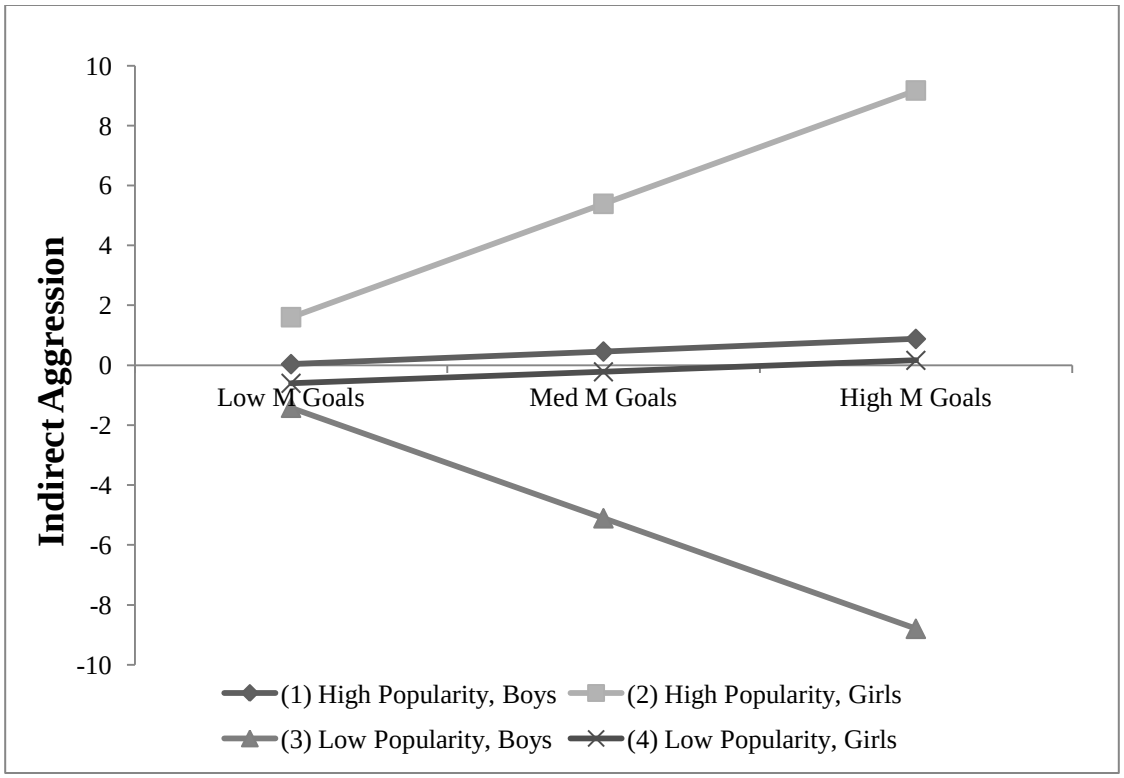

5
4
3
2
1
0
-1
-2
-3
-4
-5
Indirect Aggression
Low Social Intelligence
Med Social Intelligence
High Social Intelligence
(1) High Popularity, Boys
(2) High Popularity, Girls
(3) Low Popularity, Boys
(4) Low Popularity, Girls

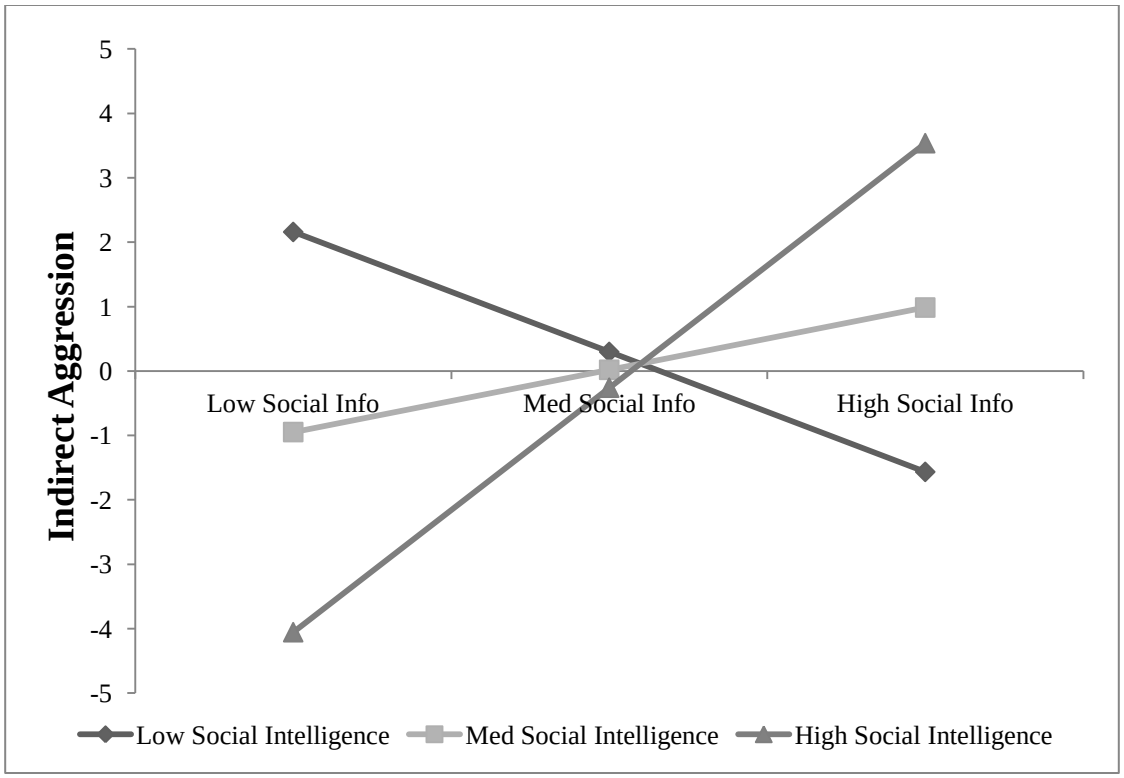

10
8
6
4
2
0
-2
-4
-6
-8
-10
Indirect Aggression
Low D/R Goals
Med D/R Goals
High D/R Goals
(1) High Popularity, High Social Intelligence
(2) High Popularity, Low Social Intelligence
(3) Low Popularity, High Social Intelligence
(4) Low Popularity, Low Social Intelligence

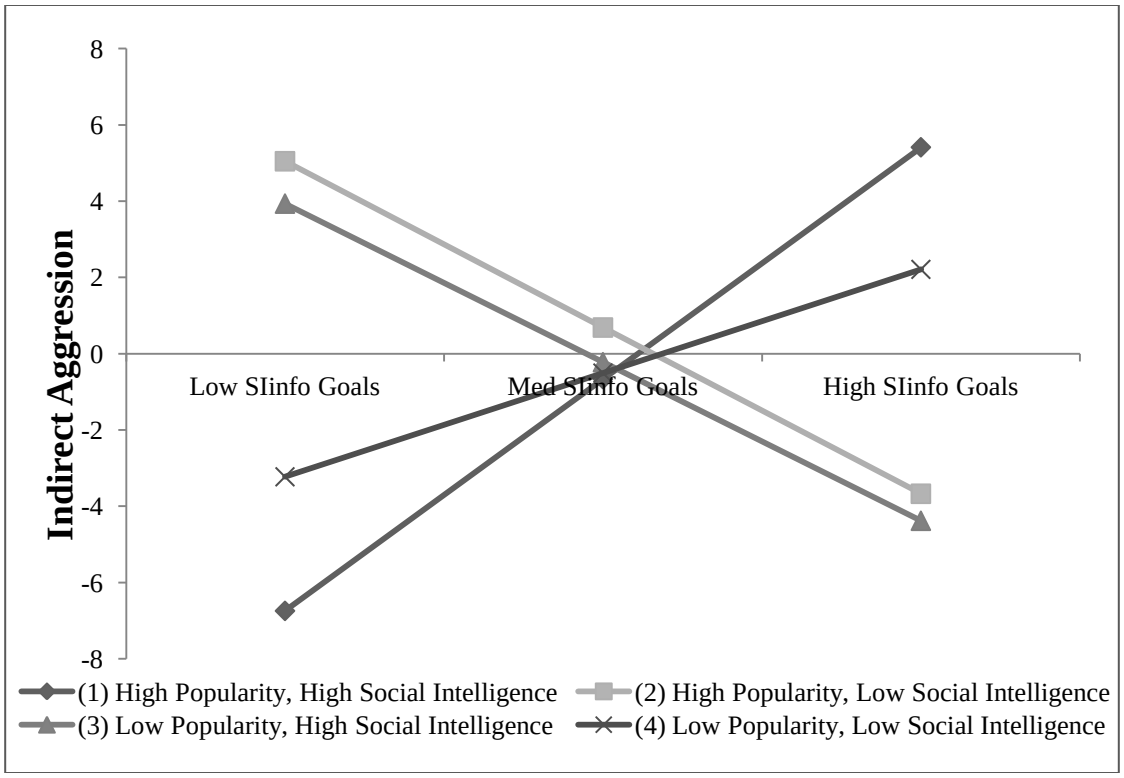

8
6
4
2
0
-2
-4
-6
-8
Indirect Aggression
Low P/S Goals
Med P/S Goals
High P/S Goals
(1) High Popularity, High Social Intelligence
(2) High Popularity, Low Social Intelligence
(3) Low Popularity, High Social Intelligence
(4) Low Popularity, Low Social Intelligence

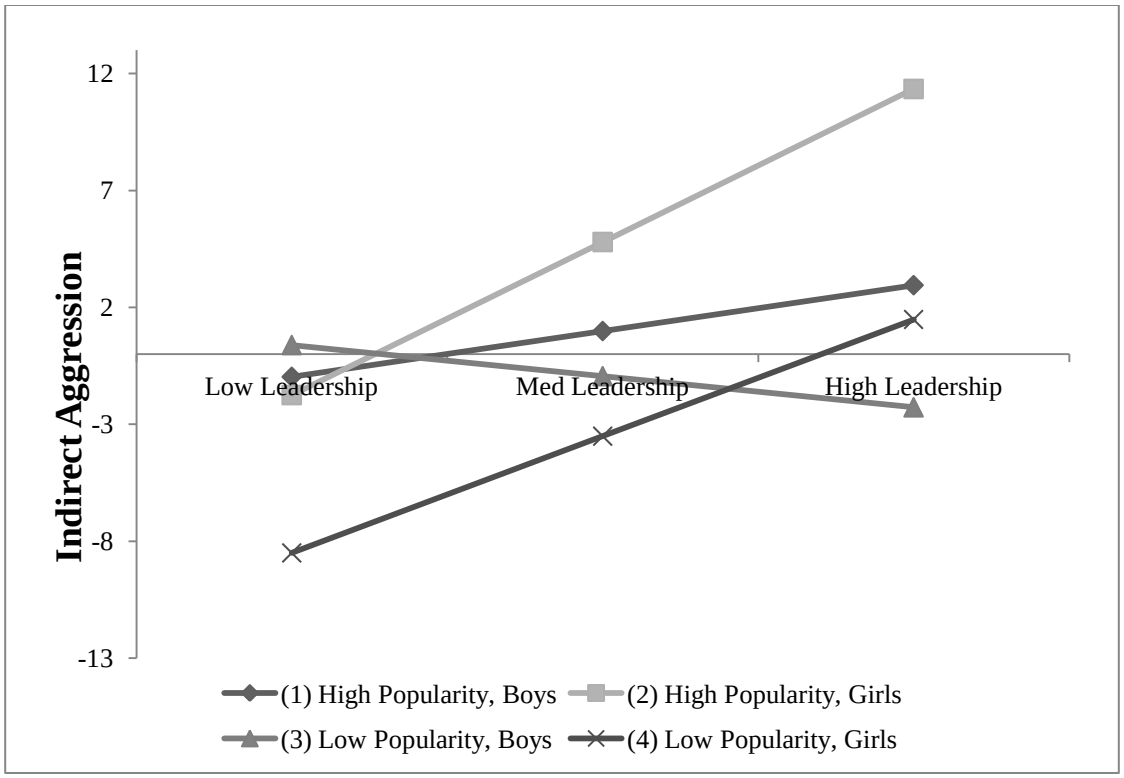

Indirect Aggression
10
8
6
4
2
0
-2
-4
-6
-8
-10
Low R Goals
Med R Goals
High R Goals
(1) High Popularity, Boys
(2) High Popularity, Girls
(3) Low Popularity, Boys
(4) Low Popularity, Girls

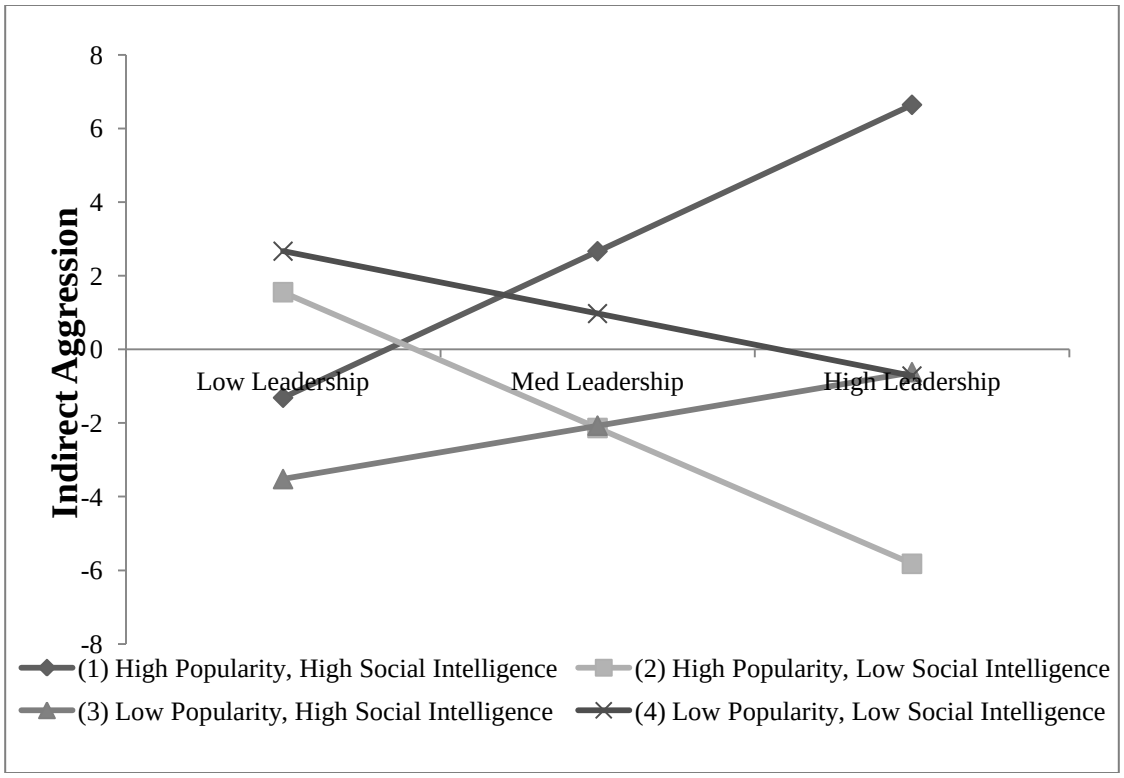

Indirect Aggression
10
8
6
4
2
0
-2
-4
-6
-8
-10
Low Malicious
Med Malicious
High Malicious
Low Social Intelligence
Med Social Intelligence
High Social Intelligence


10
8
6
4
2
0
-2
-4
-6
-8
-10
Indirect Aggression
Low M Goals
Med M Goals
High M Goals
(1) High Popularity, Boys
(2) High Popularity, Girls
(3) Low Popularity, Boys
(4) Low Popularity, Girls


5
4
3
2
1
0
-1
-2
-3
-4
-5
Indirect Aggression
Low Social Info
Med Social Info
High Social Info
Low Social Intelligence
Med Social Intelligence
High Social Intelligence


8
6
4
2
0
-2
-4
-6
-8
Indirect Aggression
Low SIinfo Goals
Med SIinfo Goals
High SIinfo Goals
(1) High Popularity, High Social Intelligence
(2) High Popularity, Low Social Intelligence
(3) Low Popularity, High Social Intelligence
(4) Low Popularity, Low Social Intelligence


12
7
2
-3
-8
-13
Indirect Aggression
Low Leadership
Med Leadership
High Leadership
(1) High Popularity, Boys
(2) High Popularity, Girls
(3) Low Popularity, Boys
(4) Low Popularity, Girls


8
6
4
2
0
-2
-4
-6
-8
Indirect Aggression
Low Leadership
Med Leadership
High Leadership
(1) High Popularity, High Social Intelligence
(2) High Popularity, Low Social Intelligence
(3) Low Popularity, High Social Intelligence
(4) Low Popularity, Low Social Intelligence

Appendix A: Social Goals

[*Self-Report, 7-point Likert Scale*

Dominance and Resource Control Goals:

1) I try to make other people afraid of me
2) I try to make other people worry that I'll hurt them
3) I try to make other people know I'm tougher than them
4) I try to hurt people who threaten me
5) I try to get what I want
6) I try to get my way
7) I try to control other people
8) I try to make sure I am more powerful than other people
9) I try to influence other people

Popularity and Status Goals:

1) I try to make sure everyone wants me for a friend
2) I try to be the kind of person everyone wants to be around
3) I try to make sure a lot of other people say I'm their best friend
4) I try to make sure I'm popular
5) I try to make sure other people like me better than anyone else
6) I try to make sure everyone knows who I am
7) I try to be part of the "in-group"

Intimacy and Friendship Goals:

1) I like it when I can tell my friends my private thoughts
2) I like it when my friends and I know each other's private feelings

3) I like it when my friends understand how I feel
4) I like it when my friends can tell me about their feelings
5) I like it when my friends understand how I feel without having to ask
6) I like it when I really know my friend's feelings
7) I like it when I can tell my friends my secrets
8) I like it when I feel close to my friends
9) I like it when I feel connected to my friends

Romantic Goals:

1) I try to make myself look better to the opposite sex
2) I try to make the opposite sex stop liking someone else if I want them to like me instead
3) I try to make the opposite sex like me
4) I try to get attention from the opposite sex

Malicious Goals:

1) I try to be mean to other people
2) I try to hurt other people's feelings
3) I try to make people feel bad

Social Stimulation Goals:

1) I try to start drama to entertain myself
2) I try to find ways to make things more exciting
3) I try to find ways to lessen my boredom when I'm with friends

Social Information Goals:

1) I try to find out what other people think about me

2) I try to find out more about other people

3) I try to find out about things I'm not supposed to know

4) I try to know the latest gossip or rumor about other people

5) I try to find out who is dating whom

6) I try to find out who is friends with whom

Leadership Goals:

1) I try to make sure I'm in charge

2) I try to make others agree that I'm the boss

3) I try to make sure I'm the leader

4) I try to make sure I organize what they do

Appendix B: The Thromsø Social Intelligence Scale

Self-Report, 7-Point Likert Scale

Social information processing

1. I can predict other peoples' behavior.
2. I know how my actions will make others feel.
3. I understand other peoples' feelings.
4. I understand others' wishes.
5. I can often understand what others are trying to accomplish without the need for them to say anything.
6. I can predict how others will react to my behavior.
7. I can often understand what others really mean through their expression, body, language, etc.

Social skills

8. I often feel uncertain around new people who I don't know.*
9. I fit in easily in social situations.
10. I am good at entertaining new situations and meeting people for the first time.
11. I have a hard time getting along with other people.*
12. It takes a long time for me to get to know others well.*
13. I am good at getting on good terms with new people.
14. I frequently have problems finding good conversation topics.*

Social awareness

15. I often feel that it is difficult to understand others' choices.*
16. People often surprise me with the things they do.*

17. Other people become angry with me without me being able to explain why.*

18. I find people unpredictable.*

19. I have often hurt others without realizing it.*

20. I am often surprised by others' reactions to what I do.*

(Note: * = Reverse scored)