The Impact of Social Acceptance and Close Friendships on Peer and Self Perceptions of Overt and Relational Aggression Among Adolescents

By

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B.A., Simon Fraser University, 2004
M.A., University of Victoria, 2006

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ABSTRACT

Using longitudinal peer and self-report data (n = 1490; 10th to 12th grade), changes in relational and overt aggression were each regressed onto social acceptance, close friendships, and their interaction. Links between social acceptance, close friendships and overt or relational aggression were dependent upon whether adolescents or their peers assessed their friendships and aggression. For both genders, peers were more likely to see adolescents with many friends and close friendships as being more overtly and relationally aggressive. In contrast, self-reports of close friendship and social acceptance were either unrelated or negatively related to peer-reported overt and relational aggression. When predicting peer-reported overt aggression, self-reported close friendships and self-reported social acceptance interacted such that males who believed they had close friendships and were socially accepted were more likely to be rated by peers as overtly aggressive. No connections between friendship and aggression were found when adolescents rated their own overt aggression and friendship.

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Introduction

Research repeatedly finds that aggressive adolescents are more likely to experience depression and low acceptance by peers, and they are at greater risk for delinquency, adolescent pregnancy, premature fatherhood, school dropout, and many other adverse outcomes—all of which have serious personal and societal costs (Card, Stucky, Sawalani, & Little, 2008; Coie, Lochman, Terry, & Hymen, 1992; Crick, 1996; Lochman & Wayland, 1994). These sequalae are found among both aggressors and victims (Coie & Dodge, 1998; Ladd, 2005). Also concerns about school violence and bullying among parents and policy makers in the last couple of decades have drawn researchers' interest to the study of adolescent aggression. For example, sensationalized school shootings in North American schools and universities have drawn the public's attention to the potential serious consequences of aggression among youth.

In a recent Canadian survey, close to 21% of females and 52% of males reported being physically assaulted by another adolescent within the last year (Chesney-Lind, Artz, & Nicholson, 2002). Verifying the actual prevalence of aggression, however, is not easy because there are also many underreported forms of aggression (Tyson, Dulmus, & Wodarski, 2002). Underreporting is a particular problem with less visible forms of aggression that use emotional coercion and interpersonal manipulation to harm others (e.g. malicious rumor spreading). If these forms of aggression were included, most certainly the rates would be much higher.

There are also substantial age and gender differences in both the prevalence and types of aggression (Lee, Baillargeon, Vermunt, Wu, & Tremblay, 2007). Can we say that girls are less aggressive because they are not as overtly physical about it? Some researchers and popular

belief have argued that girls act out their aggression by manipulating relationships and lashing out verbally, while boys' aggression is physical and direct (e.g. Crick, 1997; Crick & Grotpeter, 1995; Tomada & Schneider, 1997). Likewise, physical aggression tends to decrease with age, while social aggression increases with age, particularly for girls (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Galen & Underwood, 1997; Tremblay, 2000; Tremblay & Nagin, 2005). Both age and gender must be considered when studying the expression and prevalence of aggression.

The literature on children and adolescents' aggressive behaviour is vast, and much of the social development research on child and adolescent aggression has focused on links between aggression and peer status, in particular, peer rejection. Research has established that low peer status, or peer rejection, is linked to an array of long-term adjustment problems, including aggression (Parker & Asher, 1993; Underwood, 2002). However, Rodkin, Farmer, Pearl, and Van Acker (2000) and others suggest *high* peer status, or popularity, is also linked to aggressive behaviour (e.g. LaFontana & Cillessen, 2002; Luthar & McMahon, 1996). This suggests that links between peer status and aggression may depend on the type of aggression we examine or how we measure popularity and rejection.

The purpose of this study is to examine the links between peer status and aggression. As the literature suggests, aggression is not an objectively defined and homogenous behaviour; rather, aggression is a construct that encompasses a variety of behaviours. The current study considers overt and relational aggression and gender differences in their use.

What is Aggression?

It is easy to fall into a discussion of aggression without actually defining it; but defining it is important. While the word aggression conjures images of physical force, aggression is not limited to physical behaviours. An agreed upon definition of aggression is difficult to find because of this broad inclusion of so many different behaviours.

How well we define aggression directly affects our measurement of it; for example, aggression scales assess an array of behaviours (ranging from physical aggression to attention-seeking behavior) that may, or may not, be related to aggressive behaviour. As Tremblay (2000) points out, the frequently used Achenbach and Edelbrock (1983) "aggressive behaviour" rating scale has 23 items, only two of which clearly involve physical aggression. Most definitions of aggression, however, do share two common features: First, the behaviour is enacted with the *intention* to *harm* and, second, as evidenced by their attempts to avoid it, the victim perceives the behaviour as harmful (Baron & Richardson, 1994). Additionally, aggression can include behaviours intended to hurt emotionally or socially. For example, spreading hurtful rumours about another person aims to cause social harm.

Intent to Harm and Unwilling Victim

Although intent is not always clear or visible, it is important to the definition of aggression as it distinguishes between behaviours that are accidental from those intentionally enacted to harm others. For example, suppose that an individual slams a door and hurts the person behind them; the victim may have even tried to avoid it–however, we still believe it was accidental. Since intent is a key to determine if a behaviour ought to be called aggressive, researchers must rely on judgments of observers to determine if intent to harm was present (Bandura, 1973). The criterion of intent to harm makes the study of aggression difficult (e.g., in

young children where intent is not clear) (Tremblay, 2000). Another component of the definition of aggression is the motivation of the victim--the victim is unwilling to receive the aggressor's treatment (Geen, 2001). Additionally, intent to harm can vary depending on a victim's sensitivity to or perception of the harm (Gendreau & Archer, 2005). Nonetheless, behaviour may be aggressive regardless of whether or not the victim perceives it as harmful. For example, suppose Geoff tries to trip Bobby, but fails in his attempt and Bobby, who does not even notice, carries on walking. Geoff's behaviour may still be considered aggressive as his *intent* was to make Bobby fall down. Using these criteria, aggression can be defined as behaviour that is enacted towards a target with the intention of causing harm (Bartol & Bartol, 2005).

Intent Subtypes of Aggression

Instrumental (proactive) aggression. There are two main motivations of aggression that models of aggression have examined. Feshbach (1964) referred to *instrumental* aggression as behaviour that is motivated by the achievement of an outcome beyond just inflicting harm. In other words, behaviour is instrumentally aggressive if inflicting harm is just incidental or secondary to a specified goal. This type of aggression has also been called *proactive* aggression where the primary goal is to obtain an outcome (e.g., social dominance, a toy). The concept of proactive aggression comes from Bandura's social learning model (1973) where aggression is a learned behaviour used to achieve an outcome. Bandura (1977) argued that learning takes place indirectly through modeling of rewarded actions. An important proposition in learning theories such as Bandura's is that the consequences of an action act as determinants of whether the act is repeated (Durkin, 1995). Therefore, if Billy hits Lisa to obtain a toy, he is more likely to aggress for rewards again if his behaviour successfully obtained the toy.

Reactive (hostile) aggression. Reactive aggression is the form of aggression used to defend oneself from a perceived threat or to inflict harm on another out of frustration or anger (Berkowitz, 1988; Dodge & Coie, 1987). Dollard, Doob, Miller, Mower, & Sears, (1939) suggested that hostile aggression is based on frustration, which arises when a goal is obstructed. While this "frustration-aggression" theory has had a significant impact on research, it does not explain instances of aggressiveness without frustration (Berkowitz, 1988). That is, while some aggressive acts may be responses to frustration others, such as instrumental forms of aggression, may not arise from frustration. Although dichotomizing aggression into instrumental and hostile types is useful in understanding the motivations behind aggressive behaviour, aggression can also be simultaneously instrumental and reactive (Bushman & Anderson, 2001).

Expression Subtypes of Aggression

Overt and covert aggression. Overt aggression is a non-covert and visible form of aggression. For example, physically fighting or open defiance of teachers is defined as overt aggression. Covert aggression is hidden and sometimes unobservable; for example, behaviours such as stealing, lying, and setting fires are all covertly aggressive. It is important to note that overt aggression may or may not include physically aggressive behaviour (Gendreau & Archer, 2005). For example, verbally assaulting someone is an overt, direct form of aggression. As mentioned in an earlier section, there are both physical and non-physical forms of aggressive behaviour. The next section discusses aggressive behaviour where social harm is inflicted on others.

Aggression through non-overt means: Indirect, relational, and social aggression. Intentionally inflicting nonphysical social and emotional harm on others has received a variety of names, including *relational* aggression (Crick, 1995; Crick & Grotpeter, 1995), *social* aggression

(Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989; Galen & Underwood, 1997) and *indirect* aggression (Feshbach, 1969). There are subtle differences of emphasis in these terms that are not agreed upon in the existing literature. Generally, however, all three terms refer to behaviours that intend to inflict social and relationship harm. Social harm includes behaviours such as spreading rumours, manipulating friends into ganging up on a disliked peer, and social exclusion (Crick & Grotpeter, 1995; Feshbach, 1969).

The term *relational aggression*, coined by Crick (1995), refers to behaviours that attempt to harm other people's relationships and affect their sense of social acceptance. Examples of relationally aggressive behaviour include intentionally excluding another person from a peer group and spreading rumors or making up lies about someone (so others view them negatively). The term *social aggression* (Galen & Underwood, 1997; Xie, Swift, Cairns, & Cairns, 2002) has been used to refer to behaviour that aims to harm another person's social acceptance, or group standing. Finally, Feshbach (1969) used the term *indirect aggression* to refer to behaviours that harm by social exclusion. This term was later used to refer to behaviours such as gossiping, befriending others to hurt another, and exclusion (Lagerspetz, Bjorkqvist, & Peltonen, 1988). It is clear that while there may be differences in these terms' emphasis, they collectively suggest intent to harm through non-physical means. Table 1 compares the original definitions, derived definitions, and frequency of usage in peer-reviewed publications. As outlined in Table 1, relational aggression is the more frequently used keyword. Archer & Coyne (2005) have pointed out that aggression researchers need to be more consistent in their terminology. For these reasons, I use the term *relational aggression*, defined as behavior intended to cause harm to relationships among peers (e.g. ignoring others and social exclusion). I use the term *overt aggression* to refer to physical and more directly aggressive acts, such as swearing and taunting.

Table 1

A Comparison of Definitions and Publication Use for Indirect, Relational, and Social Aggression, and their comparison with current Study Items

	Indirect Aggression (Buss,1961; Feshbach,1969)	**Relational Aggression** (Crick & Grotpeter,1995)	**Social Aggression** (Cairns et al.,1989; Galen & Underwood, 1997)
Originators' Definitions	Behaviours that harm by social exclusion, ignoring or rejection.	"behaviors that are intended to significantly damage another child's friendships or feelings of inclusion by the peer group (e.g., angrily retaliating against a child by excluding her from one's play group; purposefully withdrawing friendship or acceptance in order to hurt or control the child; spreading rumors about the child so that peers will reject her) (Crick & Grotpeter, 1995, p. 711)	"the manipulation of group acceptance through alienation, ostracism, or character defamation" (Cairns et al., 1989, p. 323) "Social aggression is directed toward damaging another's self-esteem, social status, or both, and may take direct forms such as verbal rejection, negative facial expressions or body movements, or more indirect forms such as slanderous rumors or social exclusion" (Galen & Underwood, 1997, p 589)
Archer & Coyne's Definitions (2005)	"Attempt to harm other people's relationships and affect their sense of social inclusion. Indirect aggression is defined in relation to the covert, "behind-the-back," form the aggression takes: this is viewed as a low-cost way of harming others (Björkqvist, 1994)" (p. 212)	"Relational aggression is defined in terms of its endpoint, which is to manipulate or disrupt relationships and friendships, and its form can be overt or covert, but is usually covert" (p. 212)	"Social aggression is defined in terms of intended endpoints, which are to manipulate group acceptance and damage others' social standing (Galen & Underwood, 1997). It also includes both overt and covert forms and some additional acts not included in the other two categories, such as giving a "dirty look." (p. 212)
Keyword Search Citations in Peer-Reviewed Journals (PsychInfo, 2010)	1980—1989: 2 1990—1999: 10 2000—2009: 5	1996—1999: 3 2000—2005: 49 2006—2010: 96	1997—1999: 3 2000—2005: 21 2006—2010: 29

Are there Really Two Different forms of Aggression?

Tremblay (2000) summed up the definition of relational aggression by saying it is all behaviour, with the exception of physical aggression, that intends to harm someone. However, this is a definitional, not empirical, distinction. Can aggression really be sorted into two categories? Are they separate constructs? Or are they different manifestations of the same underlying construct? The data have, for the most part, supported the distinction between relational and overt aggression. Multiple factor analyses have found two forms of aggression (Crick & Grotpeter, 1995; Grotpeter & Crick, 1996; Vaillancourt, Brendgen, Boivin, & Tremblay, 2003). In these studies, one factor typically includes both physically aggressive behaviour (e.g. pushing, punching, hitting) and nonphysical, but directly aggressive behaviours (e.g. name calling, swearing, and threatening). The second factor includes non-overt behaviours whose aim is to hurt social relationships. These behaviours include spreading rumours, gossiping, and harming social relationships, including romantic relationships.

Although the factor-analytic studies described above differentiated between the two forms of aggression, it is interesting to note that overt and relational aggression are highly correlated ($r = .76$) (Card et al., 2008). This is of interest because it questions whether we ought to dichotomize the two forms of aggression as separate constructs or if they "should be viewed as different manifestations of a common underlying construct" (Card et al., 2008, p. 1187). As Card et al. (2008) point out, high correlations between overt and relational aggression may speak to the common origins of aggression, and moderate to low correlations would suggest that there are indeed different origins. When a high correlation is found, however, it is also important to look at individual differences in overt and relational aggression, especially when variables such as gender, age and reporter information are included. While these two forms of aggression have

received increasing interest in recent years, so has the related question on whether there are gender differences in their use. The next section presents a review of the literature on the question of gender differences.

Gender Differences in Overt and Relational Aggression

Historically, the study of aggression has focused on physical forms of aggression such as hitting, punching, and shoving—the form of aggression males may be more likely to use. One reason there was a focus on physical aggression is that it may be easier to measure than relational aggression. For example, overt aggression can be easily observed, (e.g., if researchers are using direct observation methods or teacher nominations). However, with the surge of interest in other forms of aggression (e.g. that causes social harm), researchers are challenging the widely held idea that males are more aggressive than females. Focusing on overt aggression may under-represent the form of aggression that females are inclined to use. Do females really use a different form of aggression than males do? The question of how gender differences inform aggression is further complicated when we examine age. The following section reviews the literature on this important issue.

Some studies have found that gender differences exist in the forms of aggression, and that females are usually more involved in relational aggression and males are more involved in overt aggression (Bjorkqvist et al., 1992; Crick & Grotpeter, 1995; Crick, Bigbee, & Howes, 1996; Paquette & Underwood, 1999). However, other studies have found gender differences in overt aggression, with males using overt aggression more than females, but no gender differences in relational aggression (Artz, Nicholson, & Magnuson, 2008; David & Kistner, 2000; Delveaux & Daniels, 2000; McEvoy, Estrem, Rodriguez, & Olson, 2003; Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001; Tomada & Schneider, 1997).

When there are inconsistencies in research, meta-analyses provide a means of testing the statistical likelihood of a hypothesized outcome across multiple studies (Glass, 1976). Meta-analyses also allow us to investigate moderating and mediating variables. Variables of interest when studying overt and relational aggression include the participant's perspective (self-report, peer-report, teacher report, and parent report), historical cohort, developmental period, and their interactions. Archer's (2004) meta-analysis review of 78 studies found that females used more relational aggression than males did, however, this finding varied with method of measurement. Direct observations, peer ratings, and teachers reported more relational aggression in girls, but not peer nominations or self-reports. The size of the gender differences also varies depending on the method of measurement.

Archer's (2004) meta-analysis of self-report data found greater physical aggression among males and this difference varied with age. Peer reports suggested larger gender differences among 12-13 year olds than in among 11 year olds or younger. This meta-analysis showed that males had higher rates of physical aggression than females. These gender differences were present quite early in life—from the age of two. There was no increase in gender differences in physical aggression at puberty, but there was for relational aggression. Males continued to show more verbal aggression than females (but much smaller than physical aggression). These findings highlight the importance of measurement when considering gender differences in aggression.

A more recent meta-analysis by Card et al., (2008) of 148 studies on child and adolescent overt and relational aggression also found that males used more overt aggression than females. In this study, like Archer's (2004) meta-analysis, the measurement effects are interesting. Parent and self-report data showed the smallest gender differences, while peer and teacher observations

showed larger gender differences (Card et al., 2008). This meta-analysis also found that females' use more relational aggression than males do, however, the gender differences were small. A small gender difference in relational aggression is a consistent finding, (e.g., Bettencourt & Miller, 1996; Knight, Guthrie, Page, & Fabes, 2002). However, as with overt aggression, the strength of gender differences in relational aggression varies by reporter. Teachers and parents viewed females as more relationally aggressive, and males viewed themselves as *more* relationally aggressive than females believed themselves to be. Peer nominations show no gender differences in relational aggression. It is important to note that the gender differences are small regardless of reporter.

Age may play an important role in determining whether gender differences exist. That is, age might moderate the relationship between gender and aggression. Some studies have found that peer perceptions of aggressive behaviour do not differ in females and males in preschool and early elementary populations (Crick, Casas, & Mosher, 1997; McEvoy, Estrem, Rodriguez, & Olson., 2003). However, French, Jansen, & Pidada (2002) found that a gender difference arises in late childhood and early adolescence. Longitudinal studies and cross-sectional work have supported the finding that gender differences may emerge in adolescence, as have cross-sectional studies. Lagerspetz and colleagues (1994) found that there were no gender differences in 8-year olds relational aggression, but females exhibited more relational aggression in older cohorts. In Archer's (2004) meta-analysis, discussed above, the gender differences in relational aggression increased with age from 6 to 17 years, with 11-17 years being a peak age for the use of relational aggression in girls. While females use relational aggression more in adolescence, the gender differences decrease in young adulthood. The decrease in overt aggression for males and females, and increase of relational forms of aggression, can be explained by developmental

changes in cognitive and self-regulation skills. For example, as children become older they develop their verbal skills in order to communicate their needs.

Expectations for Gender Differences: Theoretical Explanations

Although relational aggression gender differences may not be large, the literature is convincing that differences, albeit small, do exist, with females using relational aggression more often than males (e.g., Archer, 2004; Card et al., 2008). This research is consistent with North American stereotypes about adolescent females. Recently, popular media has portrayed females' relational aggression in movies such as *Mean Girls* (Fey & Waters, 2004), in countless books, and on internet sites. This interest by the media may, in part, be due to the attention psychology has brought to aggression. However, the question remains, why would females use more relational aggression than males? Explanations of this gender difference have focused on *physical and developmental differences*, *social interaction structure and style differences*, and *socialization differences*. Focusing on *physical and developmental differences*, Bjorkqvist (1994) suggested that because females often have less physical strength than males, females may rely more on relational non-physical forms of aggression. If this theory is credible, we could expect to find negative correlations between measures of relational non-physical aggression and physical strength. Additionally, because females on average start their adolescent growth spurt two years ahead of males, this theory would predict greater overt and less relational aggression among females at the end of the first decade. At this point, I know of no studies that have measured physical strength and relational aggression. Similarly, Bonica, Arnold, Fisher, Zeljo, & Yershova (2003) suggest that females' greater use of relational aggression is because their language skills tend to develop earlier and are often stronger than males' language skills. This may suggest that stronger language skills and weaker physical skills (relative to males) in

adolescence may cause females to rely less on physical means of aggression and more on verbal aggression.

Gender *differences in social interaction style and structure* are also theorized contributors to gender differences in overt and relational aggression. The structure of peer groups is quite different in females and males. In particular, females often have fewer, but more intimate relationships with other females, while males often have more friends but fewer close friendships (Maccoby, 1998). Due to the nature of their friendships, Galen & Underwood (1997) have pointed out that relational aggression may be more harmful for females than males as it hurts these close relationships. Crick and Grotpeter (1995) have suggested that since females may place more value on their relationships, harming a relationship may be more distressing to victims than is being physically harmed.

Finally, *socialization differences* for male and female gender roles also provide good explanations for girls' greater use of relational aggression than males. (Bowie, 2007) Researchers have long agreed that males and females are socialized differently in most cultures (see Fagot, Rodgers, & Leinbach (2000) for a review of gender socialization research) For example, in North American cultures females are often expected to be cooperative and nurturing, while aggressiveness and competitiveness are acceptable, and even encouraged, for males (Zahn-Waxler & Polanichka). Furthermore, females are often discouraged from using physical aggression, which may lead to them to rely on more relational methods of expressing aggressiveness (Underwood, 2003).

While there is a plethora of research on gender differences in the two types of aggression, a growing area involves the contributions of peer rejection to aggressive behaviour. Interestingly, Crick & Grotpeter (1995) have suggested that peer rejection may lead to individuals reacting

with aggressive behaviour. A review of the link between peer status and aggressive behaviour is described in the following section.

Associations Between Peer Relationships and Aggression

We begin our social lives within multigenerational family structures. However, once formal schooling commences, our social lives are increasingly centered around age mates. Peer culture is an important part of children's lives that grows in importance as they spend more time with peers than with parents or siblings. During adolescence, youth further develop their sense of personal identity, engaging more with peers and increasingly using feedback and experiences from beyond the family to create that identity (Ladd, 2005). Since children and adolescents spend a significant proportion of their time with peers, the role of peers in normative and nonnormative development has received considerable attention by social scientists (e.g. Asher & Coie, 1990; McDougall, Hymel, Vaillancourt, & Mercer, 2001; Newcomb, Bukowski, Pattee, 1993). Much of this research aims to understand the link between peer relations and aggression.

Measurement of Peer's Perceptions

Peer status is a multi-faceted construct (Card, Hodges, Little & Hawley, 2005) that provides an index of a child's social placement in his or her group of peers. Researchers have primarily relied on sociometric classification systems to study peer status. A sociometric classification system is a quantitative study of the interrelations between members of a social group that uses members' nominations of other members to categories specified by the researcher to assess status among peers. Generally, groups are determined using the dimensions of *social preference* and *social impact* (Peery, 1979) which are derived on the basis of asking voters whom they like most, and like least, or having voters rank/rate from a list. *Social preference* is the difference between the number of positive and negative nominations made by

peers (P-N). *Social impact* is the sum of positive and negative peer nominations (P + N). A variety of status groups can be created based upon social impact and preference scores. Status groups include rejected, popular, neglected, controversial, and average (Coie, Dodge, & Coppotelli, 1982; Newcomb & Bukowski, 1984).

Sociometric measures are used to provide peer status information (where researchers aim to study an individual's status, usually from the perspective of the peer group). Recent findings, however, suggest that how children and adolescents define popularity may be quite different from how researchers define popularity. This is discussed further in a later section. Peer status differs from terms like victimization and perceived popularity. Victimization describes the events that happen to a child, not peers' attitudes towards that child (Card et al., 2005). Perceived popularity refers to whether an individual is perceived by others as being popular, not whether they are liked, disliked, accepted or rejected by peers.

So now we are back to the central question; how are peer status and aggression related, and does their association vary with the type of aggression assessed? The following sections examine the link between low and high peer status and aggressive behaviour. As will be discussed, researchers are questioning the traditional view that aggressive and mean behaviours are repellent to peers.

Low Peer Status and Aggression

One of the most consistent findings is that rejected children display more adjustment problems and disorders than do non-rejected children (e.g., Kupersmidt & Coie, 1990; Parker & Asher, 1990). In particular, many studies have found that low peer acceptance or peer rejection (low peer status) is related to both overt and relational aggression by children and adolescents (e.g., Dodge, 1983; Rubin, Bukowski, & Parker, 2006; Underwood, 2003). Some studies have

found that *existing* aggression, coupled with peer rejection, is the strongest predictor of future aggression (Coie, Terry, Lenox, Lochman, & Hymen, 1995). However, this research has not established causal relationships so we are still left with the question, are children rejected because they are aggressive, or aggressive in response to the rejection? Or, is their causal relation bidirectional? Some longitudinal studies have found that aggression precedes peer rejection (Coie & Kupersmidt, 1983; Dodge, 1983). In their review of aggression and peer status research, Parker and Asher (1987) suggest two potential models of the association between peer status and aggression; an *incidental model* and a *causal model.* The *incidental model* posits that peer rejection results from aggressive behaviour and does not contribute to further adolescent problem behaviours. The *causal model* suggests that peer rejection contributes, over and above aggressive predispositions, to the development of externalizing problem behaviours such as aggression. A third possibility, the moderator model, predicts that peer status can magnify or weaken the relationship between childhood aggression and further development of externalizing problems; peer rejection has altered the association between early and later externalizing behaviours (Prinstein & La Greca, 2004).

Aggressive and Popular?

Although peer rejection and aggression have been studied extensively, the link between these two is not clear. While there is a link between peer rejection and aggression, recent studies have found that some aggressive youth are considered by peers to be *popular* (Estell, Cairns, Farmer, & Cairns, 2002; Rodkin et al., 2000). There is evidence, however, that this popularity may be associated with negativity such as aggression and "stuck-up" behaviour (Parkhurst & Hopmeyer, 1998). Rodkin et al., (2000) demonstrated with cluster analysis that a popular and aggressive subgroup may exist. They identified two groups of high status males; a non-

aggressive, prosocial, athletic, group, and an aggressive, athletic group ("popular-toughs"). Other researchers have also found subgroups of aggressive-popular children using cluster analyses (Cillessen & Mayeux, 2004; Luthar & McMahon, 1996; Simmons, 2002).

Why might aggressive youth be considered popular? In these studies it is important to note the method by which they assessed popularity. Sociometric studies often define popularity using questions such as, "who do you like to play with?" or, "who don't you like to spend time with?" Consequently, they obtain measures of attractiveness and repulsion by peers, which because they are measures of genuine liking, produce negative correlations with aggression (Bierman, 2004; Newcomb et al., 1993). On the other hand, when researchers ask directly about popularity—for example, "who is popular in your class?"— the resulting construct is *peer perceived popularity*, an assessment that can be based as much on perceptions of social power as on likeability (Card et al., 2005). Being popular does not necessarily mean being well liked by peers. Characteristics, such as being the center of attention, being a sought after alliance, and wielding social influence can be caused by genuine likability or by manipulative power use; thus the confusion.

In their study of the relations between sociometric popularity (liked) and peer-perceived popularity, Parkhurst & Hopmeyer (1998) found that these constructs are not strongly correlated; rather, perceived popularity is more strongly correlated with social impact (visibility) than it is with sociometric popularity (liked). Sociometrically controversial status was correlated with being rated as popular by peers, neglected students were least likely to be perceived as popular, and a small proportion of rejected students were perceived as being popular. Only 31% of sociometrically popular students were high on peer-perceived popularity. Does this mean that all sociometrically liked children are not really considered popular by peers? Yes, it suggests that

there may be quite a difference between asking students "who is liked?" and "who is popular?" It is interesting to note that liked and disliked nominations correlated negatively to both overt and relational aggression (La Fontana & Cillessen, 2002), but perceived popularity correlated positively with overt and relational aggression. Clearly, correlations between popularity and aggressive behaviour are dependent on the type of measures we use to assess peer status.

Supporting the idea that peer perceived popularity is associated with negativity, Merten (1997) found meanness to be a common theme in *perceived popularity*. In his analysis, Merten suggested that both popularity and meanness are used to gain and assert power. Popular children and adolescents may use meanness or aggressiveness to maintain their popular status within a peer group (Cillessen & Mayeux, 2004; Simmons, 2002). Alternatively, unpopular children and adolescents may resent the power held by their popular peers and hold them responsible for their own unpopular status. This evidence suggests that, although some children view others as "popular," they are not necessarily liked.

The evidence thus far is that popularity may be linked with the use of aggression to gain and assert power (Cillessen & Mayeux, 2004; Merten, 1997; Simmons, 2002). Simmons suggested that females who wish to join popular ranks may have to prove themselves by using aggressiveness. For example, in order to join a popular clique, females may be required to share gossip about their old friends or to embarrass others (Simmons, 2002). This relation is supported by Cillesen & Mayeux, (2004) finding that students who use relational aggression become increasingly popular over time.

Popularity vs. Close Friendships: What is the Difference?

While there is a great deal of research on the links between aggression and peer status, we should also consider the effects of close intimate friendships. For example, an adolescent can

be rejected by many peers but still have one or two close friends. In fact, within their small group of close friends a rejected child might be quite popular. Indeed, both theory and research on adolescent social structures (crowds versus cliques), dominance relationships, and social support would all predict that popularity and close friendship are distinct concepts; one refers to the individual's relationship with large numbers of people that provide a sense of identity and denote dominance and power, while the other involves dyadic and small group (e.g. cliques) relationships that provide social support and intimacy. In other words, popularity is the experience of being socially significant among a large number of peers; whereas friendships are close, mutual, friendships (Ladd, 1989). As discussed earlier, most of the research on aggression focuses on individual's social significance by assessing their social status within larger groups. This group social acceptance is seen in terms like "popularity" and "rejection"; however, interactions in other contexts should also be considered—in particular, the small group relationships that provide social support and intimacy.

Distinctions between an adolescent's larger peer group status and their close friendships are important so we can understand the unique contributions of the two contexts. However, as discussed in an earlier section, conceptual distinctions between popularity and friendships do not always align well with how they are measured. For example, a nomination measure that asks an adolescent to identify "three people who have many friends"— could tap into the adolescent's stereotypic beliefs about the size, cohesion, and status of their crowd, thus measuring popularity but not likability. On the other hand, if the respondent thinks "clique" when assessing "who has many friends," he or she is likely assessing close, intimate friendships.

Close friendships are important in the study of peer relations and aggression because they can serve as buffers against the adverse effects of peer rejection (Bukowski, Hoza, & Boivin,

1993; Parker & Asher, 1993). How might intimate friendships have protective effects? Close friendships may protect individuals from internalizing and externalizing problems by providing companionship and thus shielding feelings of loneliness, depression, and other feelings. Friendships can reduce feelings of social anxiety, which itself may be the root of estrangement from larger peer groups (Erdley, Nangle, Newman, & Carpenter, 2001; Parker, Saxon, Asher, & Kovacs, 1999). Also, by virtue of having a close friend, children and adolescents may be included in peer group activities (Berndt, 2004).

Expanding Weiss's (1974) ideas, Furman and Robbins (1985) proposed a theoretical framework that captures the important contributions of smaller intimate groups (whether dyadic or multimembered) for social support and resilience They propose that individuals seek eight types of social support or "provisions": affection, intimacy, reliable alliance, instrumental aid, nurturance, companionship, enhancement of worth, and sense of inclusion. Furman and Robbins (1985) suggest that close friendships uniquely provide affection, intimacy, and reliable alliance whereas general peer relationships provide a sense of inclusion in a group that is not available in close friendships. While some provisions are sought in both close friendships and larger peer relationships, the nature of these provisions may be different in the two contexts. For example, the enhancement of self-worth and social support adolescents find within their circle of close friends, or clique comes from their deeper knowledge of each other and different socializing goals than are found in larger, crowd-like peer groups that provide (Furman & Robbins, 1985). Furman and Robbins (1985) theoretical framework is interesting, but is there empirical support for the assertion that friendships meet different needs than do peer groups? Newcomb and Bagwell's (1995) meta-analysis found significant differences in the interactions of friends compared to interactions with acquaintances. Friendships had more positive engagement, (e.g.,

cooperation, positive affect), better conflict management, and other properties that acquaintance or general peer groups did not. In addition to these discrete functions, close friendships also foster social, emotional, and cognitive development.

Friendship provides a foundation for future social relationships (Hartup & Sancilio, 1986). Newcomb and Bagwell's (1995) meta-analysis found that friends as opposed to non-friends have more opportunities to exercise social skills and experience closeness and other emotions. These important skills and experiences, in turn, may serve as foundations for future relations. Compared to peer relationships (e.g. crowds), friendships are characterized by greater equality allowing friends to express greater intensity of emotions (greater closeness, empathy, etc.) (Bukowski & Hoza, 1989). Newcomb and Bagwell (1995) suggest that equality also contributes to emotional homeostasis; while this may be disrupted during conflicts, friends are more likely to return to this homeostasis through effective conflict management techniques. Compared to the role of friendships in social and emotional development, the role cognitive development is less clear. Azmitia and Montgo (1993) suggest that friends are more likely than non-friends to exchange ideas and collaborate are; close, equal, trusting relationships offer this opportunity for development that the larger peer group (crowds) does not offer. This idea was supported by Newcomb & Bagwell's (1995) meta-analysis assessing task activity in friends and non-friends.

An Overview of Study 1

Given that adolescents' status among their peer and their close friendships are important for healthy adjustment, this study examined their relationship with relational and overt aggression. There are three primary research questions, as described below. This study will include peer and self perspectives. The advantage of using peers as informants is that they provide an "insider" perspective that teachers and parents might not be able to provide. Peer informants provide researchers with data on low frequency but significant events that only peers know of, can be obtained (Hymel et al., 2002). Peers are in the best position to report behaviour that they find aversive such as overt and relational aggression. Perhaps the most advantageous use of peers as informants is that data are derived from multiple sources, all of whom have varying experiences with the target. Clearly, this triangulation is more informative than data on one person, derived from one other person. However, data on social acceptance and close friendships in this study are derived from self-perspectives. It is useful to consider self-report for these constructs, as adolescents' own feelings about acceptance and close friendships may affect observable interpersonal behavior. In other words, adolescents' own perspectives are important to understand the processes involved in peer problems and aggressive behavior.

Research Questions

1) Are adolescents' self-ratings of social acceptance (at the group level) statistically and practically significant predictors of their peer ratings of their overt and relational aggression?

2) Do adolescents' self-perceptions of having close friendships predict lower ratings of relational and overt aggression by their peers?

3) Are the relations among adolescents' self-perceptions of social acceptance, self-perceptions of close friendships, and peer's perceptions of their overt and relational aggression different for females and males?

STUDY 1 METHOD

Design Overview

The current study is a longitudinal analysis of data from a larger longitudinal study (n = 1668) of competence and depression in children and adolescents from grades 3 through grade 12. The participants were drawn from two middle schools and two high schools from a mid-size Midwestern city in the United States and included a younger and older cohort. The current study draws participants from the final three years the study; these were the only years in which measures of aggressive behavior were administered.

Sample Characteristics

Participants in the current analyses are 1490 students in grades 10, 11, and 12. Data were collected twice during each school year (fall and spring). In the analyses to follow, the spring waves will be used for current aggression. Peer nomination spring data are more reliable than fall data because participants have had more of the school year to get to know each other. It is expected that by the spring term participants will be more reliable informants on peers' aggressiveness.

Finally, since these data are from a longitudinal project, each year some students moved out of the school and new ones moved in. Previous analyses of the larger longitudinal dataset found that the attrition was random (e.g. due to moving, changing schools, etc) (e.g. Cole, Martin, Powers, 1997). The number of participants, broken down by grade, wave, and gender are shown in Table 2.

Table 2

Sample Size Broken Down by Wave, Grade, and Gender

	Males		Females	
Grade (semester)	**Wave**	**N**	**Wave**	**N**
10 (spring)	10	250	10	333
11 (spring)	12	233	12	289
12 (spring)	14	201	14	184
Total		684		806

Measures

Self-report of social acceptance and close friendships. Harter's (1988) Self-Perception Profile for Adolescents (SPPA) is a 45-item self-report measure of children's evaluations of their own competence in eight domains and global self-worth. In this study, five items assessing social acceptance and five items assessing close friendships were used (see Table 4 for items). Responding to items on Harter's questionnaire is a two-step process. First, participants select which of two opposite valence anchoring statements is most like them. Then, participants indicate whether the statement they selected is "really true for me", or "sort of true for me." Items are scored on 4-point rating scales, with high scores representing more close friendships. Previous research has found good internal consistency, reliability, and discriminant validity of the domains (Harter, 1988; 1982).

Peer's report of aggressive behaviour. Designed for the larger longitudinal study, the Peer-Nominated Index of Aggression (PNIA) is an eight-item questionnaire. It consists of eight

items that were adapted from previous measures of aggression (Crick & Grotpeter, 1995; Brown, Atkins, Osborne, & Milnamow, 1996). Table 3 compares the items used in this study with the original items. Four of the items measure overt aggressive behaviors and the other four items measure relational aggressive behavior such as withholding friendship and attempting to influence others' opinions of a person (e.g., "Who gets even by keeping others out of the group?"). These questions were printed across the top of an optical scan sheet with the ratee's names printed down the left side. Adolescent peer respondents simply marked the "yes" bubbles beside the names of peers they believed exhibited the described characteristic. Adolescents who did not exhibit the characteristic, or who were insufficiently known by their peer respondents, were left blank. Information obtained from each student contributed to the scores of others, not oneself. Item scores were created by summing items across respondents, then dividing it by the total number or respondents in that class. The negative item score was then subtracted from the positive item score such that higher scores indicated more aggressive behavior. Each score represented the proportion of their classmates who nominated them for a particular aggressive characteristic. Cronbach's alphas for the current sample ranged from .86 to .84 indicating good internal consistency. Means and standard deviations of peer-report aggression scores can be found in Appendices A through D.

Table 3

List of Peer-Report Aggression Items in Current Study and Original Items

Targeted Construct	Peer-Report Items	Original Items
Overt Aggression	Who hits or pushes others?	"Hits, pushes, others" (*Crick & Grotpeter, 1995)*
	Who yells or calls others names?	"Yells, calls others mean names" (*Crick & Grotpeter, 1995)*
	Who starts fights?	"Starts fights" (*Crick & Grotpeter, 1995)*
	Who picks on others?	*"Picks on smaller kids" (Brown et al. 1996)*
Relational Aggression	Who gets even by keeping others out of their group?	"When mad, gets even by keeping the person from being in their group of friends" (*Crick & Grotpeter, 1995)*
	Who tells others he/she will not like them unless they do what he/she says?	"Tells friends they will stop liking them unless friends do what they say" *(Crick & Grotpeter,1995)*
	Who ignores or stops talking to others when they are mad?	"When mad at a person, ignores them or stops talking to them" *(Crick & Grotpeter, 1995)*
	Who keeps others from being in the group?	"Tries to keep certain people from being in their group during activity or playtime" *(Crick & Grotpeter, 1995)*
	Who hits or pushes others?	"Hits, pushes, others" (*Crick & Grotpeter, 1995)*

Table 4

List of Items in all Measures Used in Current Study

Construct	Self-Report	Peer-Report
Close Friendships	"some teenagers are able to make really close friends but other teenagers find it hard to make really close friends"	
	"some teenagers do not have a close friend they can share secrets with but other teenagers have a really close friend they can share secrets with"	
	"Some teenagers wish they had a really close friend to share thins with but other teenagers do have a really close friend to share things with"	
	"some teenagers find it hard to make friends they can trust but other teenagers are able to make close friends they can really trust"	
	"some teenagers don't have a friend that is close enough to share really personal thoughts with, but other teenagers do have a close friend they can share personal thoughts and feelings with"	
Social Acceptance	"some teenagers find it hard to make friends but other teenagers find it pretty easy"	
	"some teenagers have a lot of friends but other teenagers don't have very many friends"	
	"some teenagers are kind of hard to like but other teenagers are really easy to like"	
	"some teenagers are popular with others their age, but other teenagers are not very popular"	
	"some teenagers feel that they are socially accepted but other teenagers wished that more people their age accepted them"	
Overt Aggression		"Who hits or pushes others?"
		"Who yells or calls others names?"
		"Who starts fights?"
		"Who picks on others"
Relational Aggression		"Who gets even by keeping others out of their group?"
		"Who tells others he/she will not like them unless they do what he/she says?"
		"Who ignores or stops talking to others when they are mad?"
		"Who keeps others from being in the group?"

Procedures

In the fall and spring of each school year, for three successive years, parents (by mail) and students (in person) were notified of the data collection and asked if they would like to participate. The school district and Notre Dame HREB had approved a passive consent that allowed the data to be collected as part of the regular school program, and thus to assume passive parental approval unless informed otherwise by the parent. Adolescents whose parents objected at any point during the larger six year longitudinal study, or who declined themselves, were excluded from all subsequent testing, All students, participating or not, received a token of appreciation for their participation (a pencil and candy bar). The current study uses mostly the second, or spring, wave of each school year's data, with the exception of parallel measures of aggression from the fall data collection. The data were from 10th through 12th grade students.

Ethical Considerations

The larger longitudinal study received ethical approval from the HREB at the University of Notre Dame. Since I am examining this data set at the University of Victoria (UVic), I have received ethical approval from UVic's HREB to use the data. The certificate of approval and renewal is attached (Appendix E).

RESULTS

Preliminary Data Analyses

Prior to hypothesis testing, I conducted three preliminary analyses: screening for univariate outliers, tests of multicollinearity, and a visual analysis of multi-method multi-trait correlation matrices for evidence of convergent and discriminant validity of relational and overt aggression.

The first preliminary analysis was for the identification of univariate outliers. Outliers are extreme values that appear to be statistically detached from the rest of the data (Tabachnick & Fidell, 2001). A general guideline for continuous variables is that cases with standardized scores greater than 3.29 should be suspected as potential outliers; however, the appropriateness of this rule depends on sample size. As sample size increases, so too does the likelihood and frequency of extreme scores (i.e. scores in excess of 3.29 SD). Because the current study involved relatively large samples ($n > 1000$), in addition to examining z-scores, I also used graphical methods to evaluate an individual case's detachment from the rest of the score distribution.

Mulitocollinearity occurs when variables are highly correlated with each other because they measure the same underlying construct. In multiple regression analyses, low multicollinearity is desirable so that predictor variables can be interpreted as providing unique information. Tables 5 and 6 examine the multicollinearity between self-reported social acceptance and self-reported close friendships across grades 10, 11, and 12 for males and females. The correlations between these two measures are moderate for males (.54, .53, .51 for grades 10, 11 and 12 respectively) and low for females in 10^{th} ($r = .40$) and 11^{th} ($r = .44$) grade, and high in 12^{th} grade females ($r = .75$). While the lower correlations suggest that the two

measures provide unique information, the moderate to high correlations suggest that self-perceptions of the two constructs overlap. However, the correlations are not high enough to suggest that the two constructs are the same. Correlation coefficients that are 0.9 or higher are indicative of multicollinearity (Tabachnick & Fidell, 2001).

Table 5

Correlation Matrix of Males Self-ratings of Social Acceptance with Close Friendships across Grade Level

	Social Acceptance			Close Friendships		
	Gr. 10	Gr. 11	Gr. 12	Gr. 10	Gr. 11	Gr. 12
Social Acceptance						
Gr.10	1					
Gr.11	.56**	1				
Gr.12	.44**	.62**	1			
Close Friendships						
Gr.10	**.54****	.32**	.19	1		
Gr.11	.35**	**.53****	.38**	.62**	1	
Gr.12	.22*	.26*	**.51****	.38**	.46**	1

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

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

Table 6

Correlation Matrix of Females Self-ratings of Social Acceptance with Close Friendships across Grade Level

	Social Acceptance			Close Friendships		
	Gr. 10	Gr. 11	Gr. 12	Gr. 10	Gr. 11	Gr. 12
Social Acceptance						
Gr.10	1					
Gr.11	.68**	1				
Gr.12	.54**	.73**	1			
Close Friendships						
Gr. 10	**.40****	.39**	.45**	1		
Gr. 11	.29*	**.44****	.61**	.60**	1	
Gr. 12	.27*	.47**	**.75****	.47**	.69**	1

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

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

Next, correlation matrices for the aggression measures were computed at the item level (see Appendix F and G). In particular, I assessed the convergent and discriminant validity of the aggression measures. (Campbell & Fiske, 1959). If the measures of the same construct are highly correlated with each other, this suggests convergent validity; if they are not highly correlated with each other, this suggests discriminant validity. The between-trait correlations coefficients (overt vs. relational) range from low to moderate. The correlations are consistent with the idea that the two constructs are two forms of expression of an overall factor (aggression). These

results are further supported by previous factor analysis research on this dataset that suggest that overt and relational aggression are two underlying factors (Hoffman, 2003). The within-trait correlations range from low to high. Table 7 below outline the within and between trait correlation ranges each wave for males and females.

Table 7

Correlation Ranges for Within and Between Aggression Traits (Items)

	Within Trait		**Between Trait**
	Overt	**Relational**	
W 09 Gr. 10-Fall (males)	.64 - .76	.36 - .59	.27 - .47
W 09 Gr. 10-Fall (females)	.62 - .80	.42 - .53	.23 - .50
W 10 Gr. 10-Spring (males)	.58 - .73	.31 - .49	.24 - .50
W 10 Gr. 10-Spring (females)	.56 - .69	.35 - .41	.12 -.51
W 11 Gr. 11-Fall (males)	.50 - .68	.32 -.47	.12 - .50
W 11 Gr. 11-Fall (females)	.31 - .42	.12 - .37	.12 - .41
W 12 Gr. 11-Spring (males)	.18 - .53	.01 - .34	.01 - .43
W 12 Gr. 11-Spring (females)	.16 - .48	.10 - .60	.06 - .30
W 13 Gr. 12-Fall (males)	.42 - .57	.14 - .45	.16 - .42
W 13 Gr. 12-Fall (females)	.43 - .61	.39 - .54	.25 - .50
W 14 Gr. 12-Spring (males)	.34 - .67	.23 - .44	.03 - .33
W 14 Gr. 12-Spring (females)	.13 - .53	.11 -.48	.05 -.31

Primary Data Analyses

Using a model comparison approach, I conducted several sets of regression analyses on males and females in 10^{th}, 11^{th} and 12^{th} grade. The following is an outline of the design features included in all subsequent analyses:

A. Separate but parallel models predicting overt and relational aggression.

B. Assessment of change by the testing of models that control for prior levels of the dependent variable.

C. The assessment of change in aggression across six months (controlling for prior semester aggression) and one year (controlling for prior school year aggression).

D. The simultaneous inclusion of social acceptance and close friendships as predictors of change in aggression.

E. A priori criteria for inclusion of gender:

a. If gender and its interactions with social acceptance and close friendship (separately) are significant predictors of change in aggression gender and its interaction terms will be included in all subsequent regression analyses.

b. If only the gender main effect is significant, subsequent analyses will be performed separately on male and female samples.

c. If neither the interactions with gender nor the main effects of gender are significant, all subsequent analyses will be conducted on the entire sample.

F. Parallel testing of the model in three school grade groupings: 10^{th}, 11^{th}, and 12^{th} grade.

G. Statistical comparisons of the following hierarchically nested models

Relational Aggression:

Model 1 : $Y_{\text{Relational Agression}} = \beta o + \beta_{\text{Prior Relational Aggression}}$

Model 2 : $Y_{\text{Relational Agression}} = \beta o + \beta_{\text{Prior Relational Aggression}} + \beta_{\text{Social Acceptance}} + \beta_{\text{Close Friendship}}$

Model 3 : $Y_{\text{Relational Aggression}} = \beta o + \beta_{\text{Prior Relational Agression}} + (\beta_{\text{Social Acceptance}} \text{ X } \beta_{\text{Close Friendship}})$

Overt Aggression:

Model 1 : $Y_{\text{Overt Agression}} = \beta o + \beta_{\text{Prior Overt Aggression}}$

Model 2 : $Y_{\text{Overt Agression}} = \beta o + \beta_{\text{Prior Overt Aggression}} + \beta_{\text{Social Acceptance}} + \beta_{\text{Close Friendship}}$

Model 3 : $Y_{\text{Overt Aggression}} = \beta o + \beta_{\text{Prior Overt Agression}} + (\beta_{\text{Social Acceptance}} \text{ X } \beta_{\text{Close Friendship}})$

A Priori Analysis for Inclusion of Gender

Analyses were computed to determine if gender, along with self-reported social acceptance and close friendships is a significant predictor of change in overt and relational aggression across six months and one year. These results showed significant main effects for gender in five of the ten sets (only one for grade 10 as we did not have prior year, and two, prior year and prior wave, for grades 11 and 12) However, only one 3-way interaction, gender by social acceptance by close friendship predicting one year change in 12^{th} grade males' overt aggression, was significant. Since this was the only significant interaction including gender, and it was only found for males, gender was dropped in all subsequent analyses. Because five of ten of the analyses found a main effect for gender, all subsequent analyses were performed separately on males and females.

Relational Aggression

Females. Change in relational aggression was modeled at each grade level by first controlling for the relational aggression reported six-months ago (entered as a predictor variable) and then again by controlling for relational aggression reported one year ago. As can be seen in Table 8, relational aggression was quite stable across six month periods between waves, with low to moderate beta weights for prior relational aggression at every grade level (.56, .41, and .35 .

for grades 10, 11, and 12 respectively). This means that 12-32% of the variance in current relational aggression is accounted for by the prior wave's (six month difference) aggression. Relational aggression was less stable across one year, with low to moderate beta weights ranging from .29 to .46 for grades 11 and 12 respectively. This means that the prior year's relational aggression accounted for 8-20% of current aggression. When self-reported social acceptance and close friendships were included in the models, they were not significant predictors of female's current relational aggression in 10^{th}, 11^{th}, and 12^{th} grade (see Tables 8 and 9).

To summarize, contrary to expectations, neither lower self-reported social acceptance, self-reported close friendships, nor their interactions were significant predictors of increased relational aggression in 10^{th}, 11^{th}, or 12^{th} grade females.

Table 8

The Regression of Female Peer Reported 6-month Changes in Relational Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in **Female 10th Grade** Relational Aggression*					
Constant	-.17 (.08)	-			*Total Adjusted R^2 = .32(.92) Change in R^2 with addition of acceptance & Friendship = .02*
Prior wave aggression	.60 (.08)	.56	***	45. ↔ .75	
Current Self Social Acceptance	-.15 (.09)	-.13		-.32 ↔ .03	
Current Self Close Friendship	-.02 (.09)	-.01		-.19 ↔ .16	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Female 11th Grade** Relational Aggression*					
Constant	.36 (.12)	-			*Total Adjusted R^2 = .16 (.1.1) Change in R^2 with addition of acceptance & Friendship = .03*
Prior wave aggression	.54 (.14)	.41	***	.27↔.82	
Current Self Social Acceptance	.09 (.14)	.07		-.20 ↔ .37	
Current Self Close Friendship	.15 (.13)	.13		-.12 ↔ .42	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Female 12th Grade** Relational Aggression*					
Constant	.32 (.17)	-			*Total Adjusted R^2 = .20(1.2) Change in R^2 with addition of acceptance and friendship = .02*
Prior wave aggression	.57 (.15)	.49	***	.26 ↔ .88	
Current Peer Social Acceptance	.20 (.25)	.15		-.30 ↔ .69	
Current Close Friendship	-.02 (.22)	-.02		-.47 ↔ .43	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 9

The Regression of Female Peer Reported Yearly Changes in Relational Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in **Female 11th Grade** Relational Aggression*					
Constant	.30 (.13)	-			*Total Adjusted R^2 = .08 (.1.1) Change in R^2 with addition of acceptance & Friendship = .04*
Prior year aggression	.36 (.14)	.29	*	.09 ↔.64	
Current Self Social Acceptance	.05 (.16)	.04		-.27 ↔.37	
Current Self Close Friendship	.19 (.15)	.17		-.10 ↔. 49	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Female 12th Grade** Relational Aggression*					
Constant	.34 (.15)	-			*Total Adjusted R^2 = .19 (1.1) Change in R^2 with addition of acceptance and friendship = .02*
Prior year aggression	.53 (.13)	.46	***	-.28 ↔ .77	
Current Self Social Acceptance	.17 (.19)	-.15		-.55 ↔ .21	
Current Self Close Friendship	.25 (.20)	.21		-.15 ↔ .64	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Males. Change in relational aggression was modeled for males at each grade level by first controlling for the prior wave's relational aggression (entered as a predictor variable) and then again by controlling for the prior year's relational aggression. As can be seen in Table 10, relational aggression was less stable across the six month periods between waves with prior aggression grade 10 the only significant result ($\beta = .45$, $p \leq .001$), This means that the prior wave's relational aggression accounted for 20% of the variance in current aggression in 10^{th} grade males. Prior years relational aggression is a significant predictor ($\beta = .27$, $p \leq .001$) for grade 11^{th} males and not grade 12. Prior year relational aggression accounts for 7% of the total variance in current year relational aggression.

When change in relational aggression was modeled by including social acceptance and close friendships as additional predictors, no significance was found in main effects nor interaction in grades 10, 11 and 12. To summarize, neither self-reported social acceptance, self-reported close friendships, nor their interactions were significant predictors of increased relational aggression in 10^{th}, 11^{th}, and 12^{th} grade males.

Table 10

The Regression of Male Peer Reported 6-month Changes in Relational Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in M**ale 10th Grade** Relational Aggression*					
Constant	-.04 (.06)	-			*Total Adjusted R^2 = .19 (.74) Change in R^2 with addition of social acceptance and close friendships = .01*
Prior wave aggression	.47 (.07)	.45	***	.33 ↔ .61	
Current Peer Social Acceptance	-.03 (.07)	-.03		-.16 ↔ .11	
Current Close Friendship	.09 (.07)	.10		-.06 ↔ .23	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in M**ale 11th Grade** Relational Aggression*					
Constant	-.09 (.07)	-			*Total Adjusted R^2 = .01 (.78) Change in R^2 with addition of acceptance & Friendship = .01*
Prior wave aggression	.13 (.08)	.17		-.02 ↔ .28	
Current Peer Social Acceptance	.09 (.09)	.12		-.09 ↔ .28	
Current Close Friendship	-.01 (.20)	-.01		-.21 ↔ .18	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in M**ale 12th Grade** Relational Aggression*					
Constant	-.05 (.11)	-			*Total Adjusted R^2 = .03 (.88) Change in R^2 with addition of interaction = .05*
Prior wave aggression	.13 (.12)	.13		-.11 ↔ .37	
Current Peer Social Acceptance	.19 (.12)	.16		-.11 ↔ .50	
Current Close Friendship	.08 (.12)	.09		-.16 ↔ .33	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 11

The Regression of Male Peer Reported Yearly Changes in Relational Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in M**ale 11th Grade** Relational Aggression*					
Constant	-.00 (.08)	-			*Total Adjusted R^2 = .05 (.77) Change in R^2 with addition of acceptance & Friendship = .01*
Prior year aggression	-.29 (.10)	.27	***	.09 ↔ .49	
Current Peer Social Acceptance	-.06 (.09)	.08		-.11 ↔ .24	
Current Close Friendship	-.01 (.10)	-.01		-.20 ↔ .19	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in M**ale 12th Grade** Relational Aggression*					
Constant	-.03 (.10)	-			*Total Adjusted R^2 = .03 (.93) Change in R^2 with addition of acceptance & Friendship = .06*
Prior year aggression	.01 (.12)	-.01		-.25 ↔ .22	
Current Peer Social Acceptance	.14 (.14)	.12		-.15 ↔ .43	
Current Close Friendship	.15 (.12)	.15		-.10 ↔ .39	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Overt Aggression

Females. Change in overt aggression was modeled for females at each grade level by first controlling for the prior wave's overt aggression (entered as a predictor variable) and then again by controlling for the prior year's overt aggression. As can be seen in Table 12, overt aggression was stable across the six month periods between waves, with moderate to strong beta weights for prior overt aggression at every grade level (.63, .54, and .47 for grades 10, 11, and 12 respectively). This means that 20-40% of variance in current relational aggression is accounted for by prior wave's (six month difference) overt aggression. Prior year's overt aggression was significantly predicted overt aggression in 12^{th} grade females ($\beta = .28$, $p \leq .05$) but not 11^{th} grade females. Prior year's overt aggression only accounted for 5% of the variance in current overt aggression in grade 12 females. When self-reported social acceptance and close friendships were included in the models, social acceptance was a positive significant predictor of females overt aggression in grade 12 ($\beta = .37$ $p \leq .05$), but not 11^{th} and 12^{th} grade females (see Tables 12 and 13).

To summarize, increases in self-reported social acceptance predicted increases in overt aggression for grade 12 girls. Close friendships and the interaction of social acceptance and close friendships were not significant predictors of increased overt aggression in 10^{th}, 11^{th}, or 12^{th} grade females.

Table 12

The Regression of Female Peer Reported 6- month Changes in Overt Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in **Female 10th Grade** Overt Aggression*					
Constant	.02 (.06)	-			*Total Adjusted R^2 = .40 (.68) Change in R^2 with addition of acceptance & Friendship = .01*
Prior wave aggression	.78 (.09)	.63	***	.63↔ .97	
Current Peer Social Acceptance	-.09 (.07)	-.10		-.22 ↔.04	
Current Close Friendship	.02 (.07)	.02		-.12 ↔ .15	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Female 11th Grade** Overt Aggression*					
Constant	-.03 (.09)	-			*Total Adjusted R^2 = .27 (.80) Change in R^2 with addition of acceptance & Friendship = .01*
Prior wave aggression	.56 (.10)	.54	***	.36 ↔ .76	
Current Peer Social Acceptance	.04 (.12)	.04		-.17 ↔ .25	
Current Close Friendship	.06 (.10)	.06		.14 ↔ .25	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Female 12th Grade** Overt Aggression*					
Constant	.05(.10)	-			*Total Adjusted R^2 = .24 (.56) Change in R^2 with addition of acceptance & Friendship = .07*
Prior wave aggression	.57(.15)	.47	***	.26 ↔ .88	
Current Peer Social Acceptance	.24(.12)	.37	*	.00 ↔ .47	
Current Close Friendship	-.12 (.11)	-.21		-.34 ↔.10	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 13

The Regression of Female Peer Reported Yearly Changes in Overt Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in **Female 11th Grade** Overt Aggression*					
Constant	-.06 (.14)	-			*Total Adjusted R^2 = -.02 (.93)*
Prior year aggression	.24 (.24)	.12		-.24 ↔ .71	
Current Peer Social Acceptance	.08 (.13)	.09		-.18 ↔ .33	*Change in R^2 with addition of acceptance & Friendship = .01*
Current Close Friendship	.00 (.12)	.00		-.24 ↔ .24	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Female 12th Grade** Overt Aggression*					
Constant	-.12 (.08)	-			*Total Adjusted R^2 = .05 (.57)*
Prior year aggression	.22 (.09)	.28	**	.03 ↔ .40	
Current Peer Social Acceptance	.06 (.10)	.11		-.13 ↔ .24	*Change in R^2 with addition of acceptance & Friendship = .03*
Current Close Friendship	.04 (.10)	.08		-.15 ↔ .24	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Males. When prior wave overt aggression was included in the model as a predictor variable, results for males suggest that overt aggression was stable across the six month period, with moderate to strong beta weights at each grade (.70, .52, and .54 for grades 10, 11, and 12 respectively). This means 25-45% of the variance in current overt aggression is accounted for by the prior wave's (six month difference) aggression. Prior year's aggression was a stable predictor of current overt aggression, but with lower beta weights (.22 for grade 11 and .42 for grade 12). This means that the amount of variance in current overt aggression accounted for by the overt aggression reported one year before was 5% (grade 11) and 21% (grade 12).

Social acceptance was a significant predictor of a six-month increase in overt aggression for grade 12 ($\beta = .43$ $p \leq .01$). In other words, adolescents who viewed themselves as more socially accepted were rated as more overtly aggressive by peers. Close friendships significantly predicted significant decreases in overt aggression in grade 12 males ($\beta = -.34$ $p \leq .05$). This suggests that males in grade 12 who reported more close friendships were viewed as less overtly aggressive by their peers. In addition to these main effects, an interaction of social acceptance and close friendship was found for males in grade 12 (see Figure 1). Controlling for prior years overt aggression, main effects were not found in grade 11 or 12 males, but interaction effects were found for both grade 11 ($\beta = .24 \leq .05$) and grade 12 ($\beta = -.19$, $p \leq .05$). When predicting changes in overt aggression, males in grade 11 who reported more social acceptance and more close friendships were rated by peers as being more aggressive. Males in grade 11 who reported feeling less socially accepted but felt they had close friends were rated by peers as less overtly aggressive. When predicting changes in overt aggression across six months, males in Grade 12 who reported more social acceptance and more close friendships were rated as more overtly aggressive than males in grade 12 who reported low social acceptance but having close

friendships. Finally, when predicting change in overt aggression across one year, males in grade 12 who reported higher social acceptance and having close friendships were rated by peers to be more overtly aggressive than males who reported low social acceptance, but reported having close friends. In all three interactions, there is a pattern of high self-perceived social acceptance, and high self-perceived close friendships linked to peers' perceptions of overt aggression in males. Figures 2 and 3 illustrate these interaction effects.

Table 14

The Regression of Male Peer Reported 6-month Changes in Overt Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in **Male 10th Grade** Overt Aggression*					
Constant	.16 (.06)	-			
Prior wave aggression	.79 (.07)	.70	***	.66 ↔ .93	*Total Adjusted R^2 = .45 (.75)*
Current Peer Social Acceptance	-.02 (.07)	-.01		-.15 ↔ .12	
Current Close Friendship	.05 (.07)	.05		-.09 ↔ .19	*Change in R^2 with addition of acceptance & Friendship = .00*
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Male 11th Grade** Overt Aggression*					
Constant	-04 (.08)	-			*Total Adjusted R^2 = .25 (.81)*
Prior wave aggression	.48 (.07)	.52	***	.33 ↔ .63	
Current Peer Social Acceptance	.07 (.09)	.07		-.12 ↔ .25	*Change in R^2 with addition of acceptance & Friendship = .00*
Current Close Friendship	-.06 (.10)	-.06		-.26 ↔ .14	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Change in **Male 12th Grade** Overt Aggression*					
Constant	-.07 (.10)	-			*Total Adjusted R^2 = .38 (.89)*
Prior wave aggression	.50 (.09)	.48	***	.31 ↔ .70	
Current Peer Social Acceptance	.65 (.14)	.43	***	.31 ↔ .99	
Current Close Friendship	-.41 (.12)	-.34	**	-.66 ↔ -.16	*Change in R^2 with addition of interaction= .04*
Social Acceptance x Close Friendship	.25 (.11)	.22	*	.03 ↔ .47	

Table 15

The Regression of Male Peer Reported Yearly Changes in Overt Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Change in **Male 11th Grade** Overt Aggression*					
Constant	-.12 (.10)	-			*Total Adjusted R^2 = .07 (.92)*
Prior year aggression	.20 (.08)	.22	*	-.04 ↔ .37	
Current Peer Social Acceptance	.04 (.12)	.04		-.19 ↔ .27	*Change in R^2 with addition of interaction = .04**
Current Close Friendship	.01 (.12)	.01		-.22 ↔ .24	
Social Acceptance x Close Friendship	.20 (.09)	.24	*	.02 ↔ .38	
*Modeling Predictors of Change in **Male 12th Grade** Overt Aggression*					
Constant	.30 (.14)	-			*Total Adjusted R^2 = .21 (1.1)*
Prior year aggression	.51 (.12)	.42	***	.28 ↔ .75	
Current Peer Social Acceptance	.26 (.17)	.17		-.08 ↔ .60	*Change in R^2 with addition of interaction = .03**
Current Close Friendship	-.21 (.14)	-.17		-.49 ↔ -.07	
Social Acceptance x Close Friendship	-.33 (.17)	-.19	*	-.67↔ -.00	

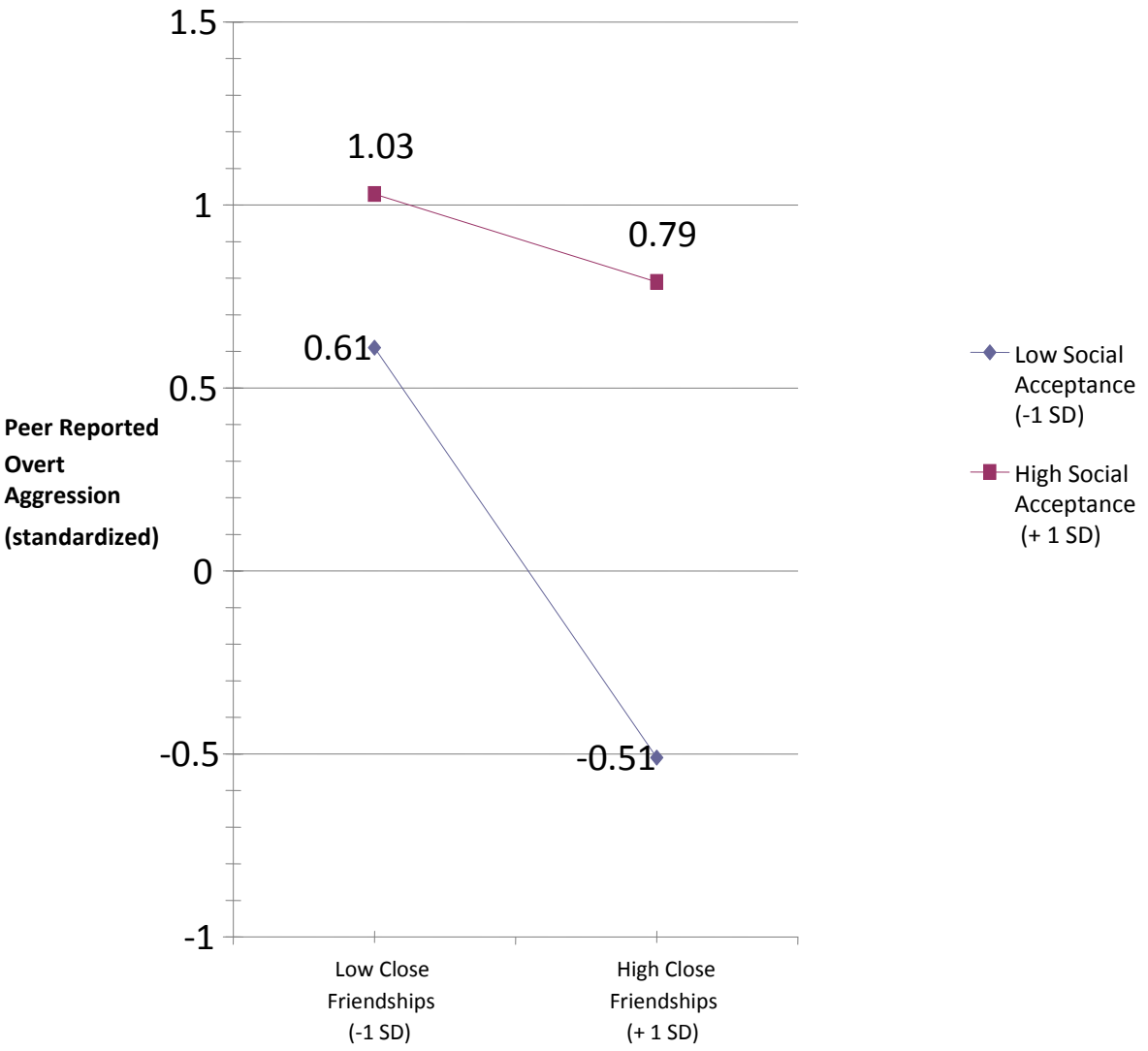


Figure 1. Interaction of Self-reported Social Acceptance and Close friendships in Grade 12 Males with Peer Reported Change in Overt Aggression Across Six-months

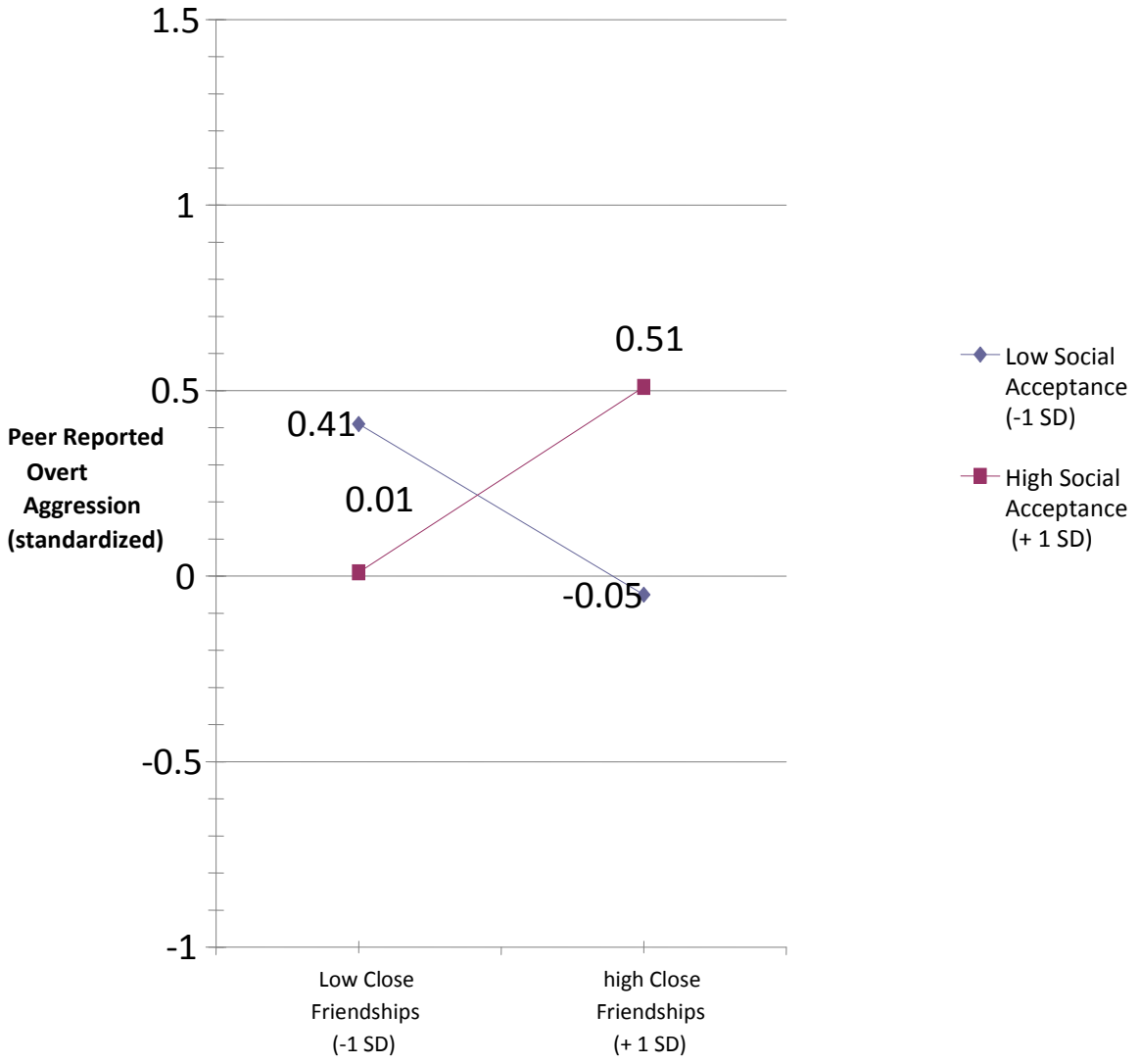


Figure 2. Interaction of Self-reported Social Acceptance and Close friendships in Grade 11 Males with Peer Reported Change in Overt aggression Across One Year.

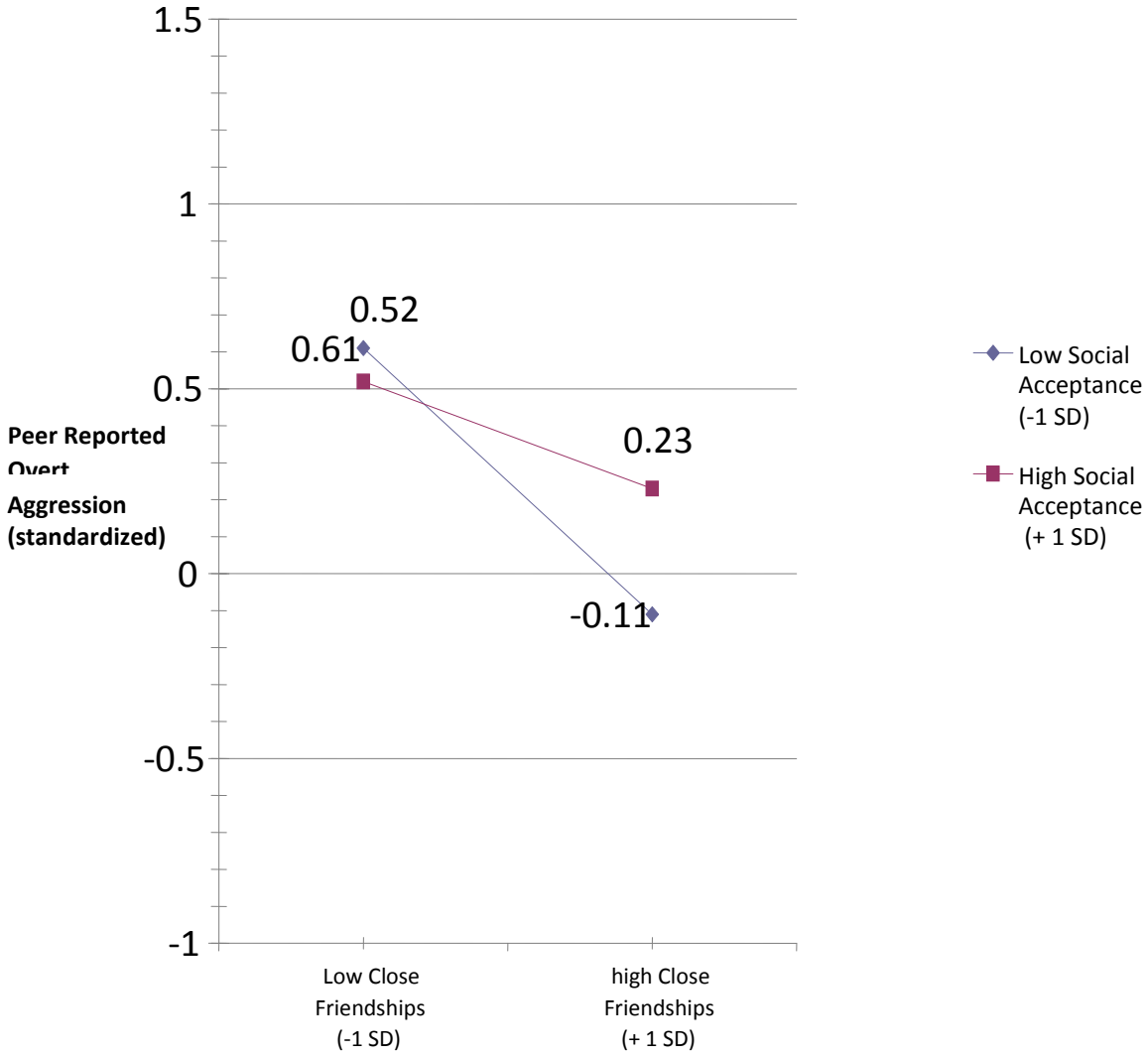


Figure 3. Interaction of Self-reported Social Acceptance and Close Friendships in Grade 12 Males with Peer Reported Change in Overt Aggression Across One Year.

Table 16

A Summary of the Regression Beta Weights for Self-reported Social acceptance and Close Friendship as Predictors of Six Month and One Year changes in Peer Reported Relational Aggression in 10th, 11th, and 12th Grade for Males and Females

		10th Grade		11th Grade		12th Grade	
		6 month	1 year	6 month	1 year	6 month	1 year
Prior Relational Aggression	Male	.45***		.17	.27***	.13	.01
	Female	.56***		.41***	.29*	.49***	.46***
Social Acceptance	Male	-.03		.12	.08	.16	.12
	Female	-.13		.07	.04	-.15	-.15
Close Friendship	Male	.10		-.01	-.01	.09	-.15
	Female	-.01		.13	.17	-.02	.21
Interaction	Male	-		-	-	-	-
	Female	-		-	-	-	-

Table 17

A Summary of the Regression Beta Weights for Self-reported Social acceptance and Close Friendship as Predictors of Six Month and One Year changes in Peer Reported Overt Aggression in 10th, 11th, and 12th Grade for Males and Females

		10th Grade		11th Grade		12th Grade	
		6 month	1 year	6 month	1 year	6 month	1 year
Prior Overt Aggression	Male	.70***		.52***	.22*	.48***	.42***
	Female	.63***		.54***	.12	.47*	.28***
Social Acceptance	Male	-.01		.07	.04	.43***	.17
	Female	-.10		.04	.09	.37*	.11
Close Friendship	Male	.05		-.06	.01	-.34*	-.17
	Female	.02		.06	.00	-.21	.08
Interaction	Male	-		-	.24*	.22*	-.19*
	Female	-		-	-	-	-

Study 2

In the regression models of Study 1, adolescents' perceptions of their social acceptance and close friendships did not predict peer's perspectives of their overt and relational aggression as well as expected. This failure to confirm the hypothesized relations between adolescents' friendship perceptions and their aggression as assessed by peers could reflect a genuine lack of functional connection, or these null findings could reflect a measurement problem. In the Study 1 models, the independent variables, except for prior wave aggression, a control variable, were measured using self-report data, while the dependent variables were based on peer-report. To rule out the possibility that genuine connections between aggression and friendship were overwhelmed by the measurement variance, in Study 2 the theorized relations between aggression and friendship were reanalyzed; first, using only self-report data and then using only peer-report data. In other words, can the hypothesized relations between aggression and social acceptance and close friendship be seen if method variance is controlled? As a preliminary analysis, multi-trait multi-method correlation matrices (MTMM) were computed on each wave (see Figure 4). The MTMM matrix, introduced by Campbell and Fiske (1959) is a matrix of correlations of two or more traits and two or more methods. The matrix contains four types of correlations: monotrait-monomethod, monomethod-multitrait, multi-trait-monomethod, and multitrait-multi-method. As expected, the multitrait-mutlimethod correlations were lowest in the matrix, since the correlations have neither traits nor methods in common. However, the monomethod multi-trait correlations (in dotted lines) are higher than the multi-method mono-trait (shaded in dark grey). This is an unexpected finding since we would expect correlations to be higher because different methods are measuring the same trait—the convergent validity. In other words, the correlations among different methods, but the same traits should be high but

they are not. This suggests that our results in Study 1 might be influenced by method variance, rather than the ideal trait variance. This evidence of method effects validates the aim of Study 2.

Measures

Peer-report of social acceptance and close friendships. A modified version of the Peer Nomination of Multiple Competencies (PNMC: Cole, 1990; 2991; Cole & White, 1993) was used to obtain peers' assessments of adolescents' social acceptance and close friendships. The full PNMC assesses five domains of competence. In Study 2, two items assessing social acceptance and two items assessing close friendships were used. For social acceptance, the two items were *"who has lots of friends?"* and *"who does not have many friends at all?"* For close friendships, the two items were *"who has a really close friend they can really trust?"* and *"who has no really close friends they can trust?"* These questions were printed across the top of an optical scan sheet with the ratee's names printed down the left side. Adolescent peer respondents simply marked the "yes" bubbles beside the names of peers they believed exhibited the described characteristic. Adolescents who did not exhibit the characteristic, or who were insufficiently known by their peer respondents, were left blank. Item scores were created by summing items across respondents, then dividing it by the total number or respondents in that class. The negative item score was then subtracted from the positive item score such that higher scores indicated more proportionately more adolescent peers rating them at the socially positive end of the spectrum (i.e. having many friends and having a close friend).

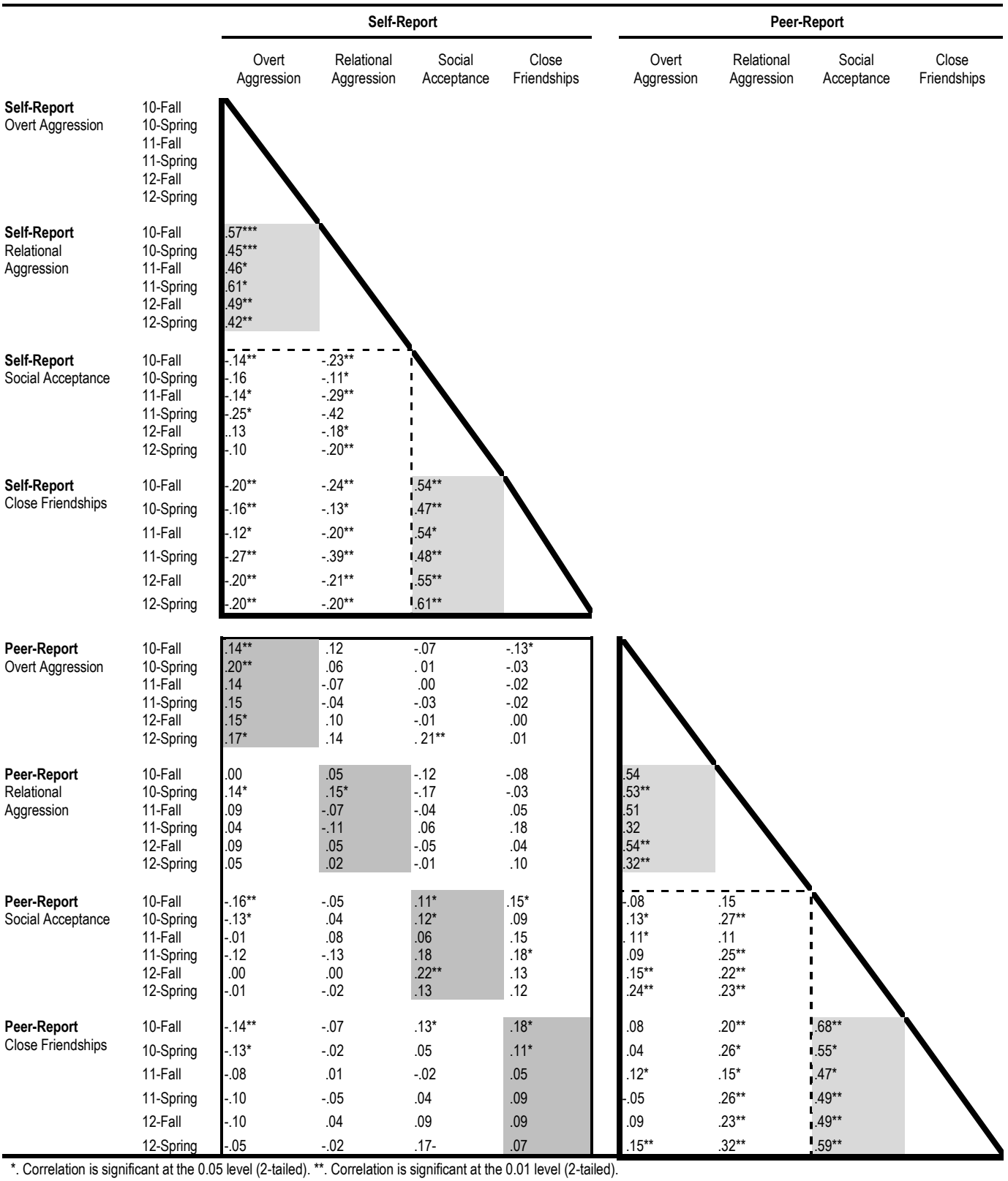
Self-report of social acceptance and close friendships. This measure is described in Study 1.

Peer-report of aggressive behavior. This measure is described in Study 1.

Self-report of aggressive behavior. The Adolescent Self-Report of Aggression (ASRA) is an eight-item questionnaire adapted from measures of aggression by Buss and Drukee, (1957) and Buss and Perry (1992). Table 18 compares the items used in this study with the original items. Four of the items measure overt aggressive behaviors and four items measure relational aggressive behavior. Each score represented the proportion of their classmates who nominated them for a particular aggressive characteristic. Cronbach's alphas on the ASRA for the current sample ranged from .70 to .77, which indicates good internal consistency. Means and standard deviations of self-report aggression scores can be found in Appendices H through K. As with Study 1, correlation matrices for the aggression measures were computed at the item level as a preliminary step (see Appendix L and M). In particular, I assessed the convergent and discriminant validity of the aggression measures. (Campbell & Fiske, 1959). If the measures of the same construct are highly correlated with each other, this suggests convergent validity; if they are not highly correlated with each other, this suggests discriminant validity. The correlations provide some support that two constructs are two forms of expression of an overall factor (aggression). Similar to peer-report of aggressive behavior, previous analyses on this dataset have found two underlying factors (Hoffman, 2003).

Table 18: *List of Self-Report Aggression Items in Current Study and Original Items*

Targeted Construct	**Self-Report Items**	**Original Items**
Overt Aggression	"If somebody hits me, I hit back"	"If somebody hits me, I hit back" *(Buss & Perry, 1996)*
	"I get into fights more than the average person"	"I get into fights a little more than the average person" *(Buss & Perry, 1996)*
	"I have threatened people"	"I have threatened people I know" *(Buss & Perry, 1996)*
	"When people bug me, I may yell or swear at them"	(created for the larger longitudinal study)
Relational Aggression	"I say mean things about people I don't like"	"Says mean things about others" *(Brown et al. 1996)* & David
	"When I am mad at someone I give him/her the silent treatment"	"When mad at a person, ignores them or stops talking to them" *(Crick & Grotpeter, 1995)*
	"If I dislike someone, I try to keep them out of my group"	"Tries to keep certain people from being in their group during activity or playtime" *(Crick & Grotpeter, 1995)*
	"When I am mad at someone, I try to get friends mad at them too"	"Tells friends they will stop liking them unless friends do what they say" *(Crick & Grotpeter, 1995)*



		Self-Report				Peer-Report			
		Overt Aggression	Relational Aggression	Social Acceptance	Close Friendships	Overt Aggression	Relational Aggression	Social Acceptance	Close Friendships
Self-Report Overt Aggression	10-Fall								
	10-Spring								
	11-Fall								
	11-Spring								
	12-Fall								
	12-Spring								
Self-Report Relational Aggression	10-Fall	.57***							
	10-Spring	.45***							
	11-Fall	.46*							
	11-Spring	.61*							
	12-Fall	.49**							
	12-Spring	.42**							
Self-Report Social Acceptance	10-Fall	-.14**	-.23**						
	10-Spring	-.16	-.11*						
	11-Fall	-.14*	-.29**						
	11-Spring	-.25*	-.42						
	12-Fall	..13	-.18*						
	12-Spring	-.10	-.20**						
Self-Report Close Friendships	10-Fall	-.20**	-.24**	.54**					
	10-Spring	-.16**	-.13*	.47**					
	11-Fall	-.12*	-.20**	.54*					
	11-Spring	-.27**	-.39**	.48**					
	12-Fall	-.20**	-.21**	.55**					
	12-Spring	-.20**	-.20**	.61**					
Peer-Report Overt Aggression	10-Fall	.14**	.12	-.07	-.13*				
	10-Spring	.20**	.06	. 01	-.03				
	11-Fall	.14	-.07	.00	-.02				
	11-Spring	.15	-.04	-.03	-.02				
	12-Fall	.15*	.10	-.01	.00				
	12-Spring	.17*	.14	. 21**	.01				
Peer-Report Relational Aggression	10-Fall	.00	.05	-.12	-.08	.54			
	10-Spring	.14*	.15*	-.17	-.03	.53**			
	11-Fall	.09	-.07	-.04	.05	.51			
	11-Spring	.04	-.11	.06	.18	.32			
	12-Fall	.09	.05	-.05	.04	.54**			
	12-Spring	.05	.02	-.01	.10	.32**			
Peer-Report Social Acceptance	10-Fall	-.16**	-.05	.11*	.15*	-.08	.15		
	10-Spring	-.13*	.04	.12*	.09	.13*	.27**		
	11-Fall	-.01	.08	.06	.15	. 11*	.11		
	11-Spring	-.12	-.13	.18	.18*	.09	.25**		
	12-Fall	.00	.00	.22**	.13	.15**	.22**		
	12-Spring	-.01	-.02	.13	.12	.24**	.23**		
Peer-Report Close Friendships	10-Fall	-.14**	-.07	.13*	.18*	.08	.20**	.68**	
	10-Spring	-.13*	-.02	.05	.11*	.04	.26*	.55*	
	11-Fall	-.08	.01	-.02	.05	.12*	.15*	.47*	
	11-Spring	-.10	-.05	.04	.09	-.05	.26**	.49**	
	12-Fall	-.10	.04	.09	.09	.09	.23**	.49**	
	12-Spring	-.05	-.02	.17-	.07	.15**	.32**	.59**	

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

Figure 4 A Multitrait Multimethod Correlation Matrix of Self-Report and Peer-Report Measures of Aggression and Friendship

Study 2 Results

Self-Perspectives Predicting Self-Reported Relational and Overt Aggression

Relational Aggression

Females. Change in relational aggression was modeled at each grade level by first controlling for the self-reported prior wave's relational aggression (entered as a predictor variable) and then again by controlling for the self-reported prior year's relational aggression. As can be seen in Table 8, relational aggression was quite stable across six month periods between waves, with low to moderate beta weights for prior relational aggression at every grade level (.50, .52, and .76 for grades 10, 11, and 12 respectively). This means that 25-57% of the variance in current relational aggression is accounted for by the prior wave's (six month difference) aggression. Relational aggression was stable across one year, with beta weights ranging from .55 to .70 for grades 11 and 12 respectively. This means that the prior year's relational aggression accounted 44-47% of current aggression.

When self-reported social acceptance and close friendships were included in the models they were significant predictors of female's current relational aggression in 11^{th} grade but not 10^{th} and 12^{th} grade (see Tables 19 and 20). Specifically, when assessing change in a six-month period, social acceptance negatively predicted relational aggression in grade 11 ($\beta = -.30$ $p \leq .05$). Close friendships significantly predicted significant decreases in overt aggression in grade 11 females ($\beta = -.23$ $p \leq .05$). This suggests that females in grade 11 who reported more close friendships also viewed themselves as less overtly aggressive. When the models assessed change across one-year, social acceptance predicted increases in relational aggression in grade 11 ($\beta = .19$ $p \leq .05$) while close friendships continued to predict significant decreases in relational aggression in grade 11 ($\beta = -.25$ $p \leq .05$).

Table 19

The Regression of Female Self Reported Changes in Relational Aggression across Six-Months onto Current Self Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Female 10th Grade** Relational Aggression*					
Constant	-.05 (.07)	-			*Total Adjusted R^2 = .45(.76) Change in R^2 with addition of acceptance & Friendship = .01*
Prior wave aggression	.49 (.08)	.50	***	.34 ↔.65	
Current Self Social Acceptance	-.07 (.08)	-.07		-.23 ↔.09	
Current Close Friendship	.07(.08)	.08		.08 ↔ .22	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Female 11th Grade** Relational Aggression*					
Constant	-.09 (.06)	-			*Total Adjusted R^2 = .53 (.53) Change in R^2 with addition of acceptance & Friendship = .19****
Prior wave aggression	.44 (.07)	.52	***	.31↔.60	
Current Self Social Acceptance	-.25 (.08)	-.30	*	-.40↔.-10	
Current Close Friendship	-.19 (.07)	-.23	*	-.34↔-.05	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Female 12th Grade** Relational Aggression*					
Constant	.03 (.09)	-			*Total Adjusted R^2 = .55 (.66) Change in R^2 with addition of Interaction = .00*
Prior wave aggression	.76 (.09)	.76	***	.58 ↔ .93	
Current Self Social Acceptance	.05 (.12)	.05		-.19 ↔ .28	
Current Close Friendship	-.04 (.12)	-.04		-.28 ↔ .19	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 20

The Regression of Female Self Reported Yearly Changes in Relational Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Female 11th Grade** Relational Aggression*					
Constant	.12 (.08)	-			*Total Adjusted R^2 = .46(.71)*
Prior year aggression	.72 (.11)	.55	***	.50 ↔ .94	
Current Self Social Acceptance	-.20 (.09)	.19	*	-.38 ↔ -.01	*Change in R^2 with addition of acceptance & Friendship = .12****
Current Close Friendship	-.23 (.08)	-.25	*	-.39 ↔ -.06	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Female 12th Grade** Relational Aggression*					
Constant	-.15 (.09)	-			*Total Adjusted R^2 = .41(.63)*
Prior year aggression	.56 (.10)	.70	***	.37 ↔ .78	
Current Self Social Acceptance	.05 (.14)	.07		-.23 ↔ .34	*Change in R^2 with addition of acceptance & Friendship = .01*
Current Close Friendship	.02 (.12)	.02		-.22 ↔ .26	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Males. Change in males' relational aggression was modeled at each grade level by first controlling for the prior wave's relational aggression (entered as a predictor variable) and then again by controlling for the prior year's relational aggression. As can be seen in Table 21, relational aggression was quite stable across six month periods between waves, with low to moderate beta weights for prior relational aggression at every grade level (.38, .48, and .60 for grades 10, 11, and 12 respectively). This means that 15-40% of the variance in current relational aggression is accounted for by the prior wave's (six month difference) aggression. Relational aggression was also stable across one year, with moderate beta weights ranging from .47 to .56 for grades 11 and 12 respectively. This means that the prior year's relational aggression accounted for 26-34% of current aggression. When self-reported social acceptance and close friendships were included in the models, the results were mixed. Social acceptance was not a significant predictor of changes in relational aggression for males in 10^{th}, 11^{th} or 12^{th} grade. Self-reported close friendships predicted significant decreases (over 6 months) in relational aggression for 10^{th} ($\beta = -.22$ $p \leq .05$) and 11^{th} ($\beta = -.21$ $p \leq .05$) grade males. When assessing one-year change, self-reported social acceptance significantly predicted decreases in relational aggression in grade 11 males ($\beta = -.34$ $p \leq .05$). In other words, males in grade 11 who reported more social acceptance rated themselves as less relationally aggressive (see tables 21 and 22).

Table 21

The Regression of Male Self Reported Changes in Relational Aggression across Six-Months onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Male 10th Grade** Relational Aggression*					
Constant	-.12 (.07)	-			*Total Adjusted R^2 = .18 (.80)*
Prior year aggression	.35 (.07)	.39	***	.21 ↔ .48	
Current Peer Social Acceptance	.05 (.08)	.05		-.11 ↔ .22	*Change in R^2 with addition of acceptance & Friendship = .04*
Current Close Friendship	-.20 (.0)	-.22	*	-.35 ↔ -.05	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 11th Grade** Relational Aggression*					
Constant	.02 (.08)	-			*Total Adjusted R^2 = .33(.81)*
Prior year aggression	.19 (.09)	.48	***	.32 ↔ .66	*Change in R^2 with addition of acceptance & Friendship = .06**
Current Peer Social Acceptance	-.09 (.11)	-.08		-.32 ↔ .13	
Current Close Friendship	-.27 (.11)	-.21	*	-.46 ↔ -.02	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 12th Grade** Relational Aggression*					
Constant	.02 (.10)	-			*Total Adjusted R^2 = .40(.89)*
Prior year aggression	.61 (.09)	.60	***	-.44 ↔ .79	
Current Peer Social Acceptance	-.12 (.14)	-.08		-.38 ↔ .17	*Change in R^2 with addition of acceptance & Friendship = .02*
Current Close Friendship	-.10 (.12)	-.09		-.31 ↔ .11	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 22

The Regression of Male Self Reported Yearly Changes in Relational Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Male 11th Grade** Relational Aggression*					
Constant	.19 (.09)	-			*Total Adjusted R^2 = .25(.90) Change in R^2 with addition of acceptance & Friendship = .12****
Prior year aggression	.64 (.11)	.47	***	.41 ↔ .86	
Current Self Social Acceptance	-.34 (.10)	-.34	*	-.54 ↔ -.15	
Current Close Friendship	-.00 (.11)	-.00		-.23 ↔ -.22	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 12th Grade** Relational Aggression*					
Constant	.16 (.13)	-			*Total Adjusted R^2 = .32 (1.0) Change in R^2 with addition of acceptance & Friendship = .01*
Prior year aggression	.61 (.11)	.56	***	.39 ↔ .84	
Current Self Social Acceptance	-.18 (.17)	-.22		-.53 ↔ .16	
Current Close Friendship	-.02 (.12)	-.02		-.30 ↔ .26	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Overt Aggression

Females. Change in overt aggression was modeled at each grade level by first controlling for the prior wave's overt aggression (entered as a predictor variable) and then again by controlling for the prior year's overt aggression. As can be seen in Table 23, overt aggression was stable across six month periods between waves, with strong beta weights for prior overt aggression at every grade level (.76, .83, and .96 for grades 10, 11, and 12 respectively). This means that 58-80% of the variance in current overt aggression is accounted for by the prior wave's (six month difference) aggression. Overt aggression was stable across one year, with strong beta weights ranging from .74 to .81 for grades 11 and 12 respectively. This means that the prior year's overt aggression accounted for 58-60% of variance in current aggression. When self-reported social acceptance and close friendships were included in the models, they were not significant predictors of female's current overt aggression in 10^{th} and 12^{th} grade (see Tables 23 and 24). However, close friendships predicted significant decrease (over six-months) in overt aggression in grade 11 females ($\beta = -.15$ $p \leq .05$). This suggests that females in grade 11 who reported more close friendships were viewed themselves as less overtly aggressive.

To summarize, close friendships significantly predicted decreases in overt aggression in grade 11 females but not 10^{th} or 12^{th} grade females. Self-reported social acceptance was not a significant predictor of current overt aggression, nor were the interactions (close friendships by social acceptance) in 10^{th}, 11^{th}, or 12^{th} grade females.

Table 23

The Regression of Female Self Reported Changes in Overt Aggression across Six-Months onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Female 10th Grade** Overt Aggression*					
Constant	.02 (.06)				*Total Adjusted R^2 = .57 (.62) Change in R^2 with addition of acceptance & Friendship = .00*
Prior year aggression	.78 (.06)	.76	***	.66 ↔.90	
Current Peer Social Acceptance	-.02 (.06)	-.02		-.15 ↔ .10	
Current Close Friendship	-.16 (.07)	.05		-.07↔ -.18	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Female 11th Grade** Overt Aggression*					
Constant	.02 (.06)				*Total Adjusted R^2 = .74 (.50) Change in R^2 with addition of acceptance & Friendship = .04***
Prior year aggression	.92 (.07)	.83	***	.79 ↔1.1	
Current Peer Social Acceptance	-.08 (.07)	-.07		-.21 ↔ .06	
Current Close Friendship	-.16 (.07)	-.15	*	-.29 ↔ -.02	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Female 12th Grade** Overt Aggression*					
Constant	-.00 (.05)	-		.79 ↔ 1.1	*Total Adjusted R^2 = .81 (.40) Change in R^2 with addition of acceptance & Friendship = .03**
Prior year aggression	.93 (.06)	.96	***	.82 ↔ 1.1	
Current Peer Social Acceptance	-.03 (.07)	-.03		-.17 ↔ .12	
Current Close Friendship					
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 24

The Regression of Female Self Reported Yearly Changes in Overt Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Female 11th Grade** Overt Aggression*					
Constant	-.04 (.08)	-			*Total Adjusted R^2 = .57(.62) Change in R^2 with addition of acceptance & Friendship = .01*
Prior year aggression	.84 (.09)	.74	***	.65 ↔ 1.0	
Current Self Social Acceptance	-.08 (.09)	-.08		-.24 ↔ .10	
Current Close Friendship	-.03 (.08)	-.04		-.20 ↔ -.14	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Female 12th Grade** Overt Aggression*					
Constant	.03 (.09)	-			*Total Adjusted R^2 = .59 (.61) Change in R^2 with addition of acceptance & Friendship = .01*
Prior year aggression	.80 (.09)	.81	***	.61 ↔ .99	
Current Self Social Acceptance	.12 (.13)	.12		-.15 ↔ .38	
Current Close Friendship	.01 (.12)	.01		-.23 ↔ .24	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Males. Change in overt aggression was modeled at each grade level by first controlling for the prior wave's overt aggression (entered as a predictor variable) and then again by controlling for the prior year's overt aggression. As can be seen in Table 25, overt aggression was stable across six month periods between waves, with moderate to strong beta weights for prior overt aggression at every grade level (.54, .71, and .68 for grades 10, 11, and 12 respectively). This means that 32-48% of the variance in current overt aggression is accounted for by the prior wave's (six month difference) aggression. Overt aggression was stable across one year, with strong beta weights ranging from .70 to .76 for grades 11 and 12 respectively. This means that the prior year's overt aggression accounted 55% of current aggression. Self-reported social acceptance was not a significant predictor of male's current overt aggression in 10^{th}, 11^{th}, or 12^{th} grade males (in both prior wave and prior year models). However, close friendships predicted significant decrease (over 6-months) in overt aggression in grade 10 males ($\beta = -.20$ $p \leq .05$). This suggests that males in grade 10 who reported more close friendships viewed themselves as less overtly aggressive.

To summarize, close friendships significantly predicted decreases in overt aggression in 10^{th} grade males, but not grade 11 or 12 males. Self-reported social acceptance was not a significant predictor of current overt aggression in 10^{th}, 11^{th}, and 12^{th} grade males. The interaction effects (close friendship by social acceptance) were not significant in any grade.

Table 25

The Regression of Male Self Reported Changes in Overt Aggression across Six-Months onto Current Self Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Male 10th Grade** Overt Aggression*					
Constant	-.01 (.06)	-			*Total Adjusted R^2 = .37 (.72) Change in R^2 with addition of acceptance & Friendship = .06**
Prior year aggression	.47 (.06)	.54	***	.36 ↔ .59	
Current Peer Social Acceptance	-.08 (.08)	-.08		-.23 ↔ .07	
Current Close Friendship	-.19 (.07)	-.20	*	-.32 ↔ -.05	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 11th Grade** Overt Aggression*					*Total Adjusted R^2 = .57 (.61) Change in R^2 with addition of acceptance & Friendship = .02*
Constant	-.08 (.06)	-			
Prior year aggression	.64 (.06)	.71	***	.52 ↔ .78	
Current Peer Social Acceptance	-.05 (.08)	-.05		-.22 ↔ .12	
Current Close Friendship	-.14 (.08)	-.13		-.30 ↔ .03	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 12th Grade** Overt Aggression*					
Constant	-.10 (.08)	-			*Total Adjusted R^2 = .47(.75) Change in R^2 with addition of acceptance & Friendship = .01*
Prior year aggression	.64 (.08)	.68	***	.94 ↔ .80	
Current Peer Social Acceptance	-.08 (.10)	-.07		-.23 ↔ .13	
Current Close Friendship	-.01 (.08)	-.01		.17 ↔ .16	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 26

The Regression of Male Self Reported Yearly Changes in Overt Aggression onto Current Self Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Male 11th Grade** Overt Aggression*					
Constant	.08 (.06)	-			
Prior year aggression	.78 (.07)	.70	***	.63 ↔ .93	*Total Adjusted R^2 = .55(.64)*
Current Self Social Acceptance	-.11 (.07)	-.12		-.25 ↔ .04	*Change in R^2 with addition of acceptance & Friendship = .04**
Current Close Friendship	-.11 (.08)	-.10		-.27 ↔ -.06	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 12th Grade** Overt Aggression*					
Constant	-.04 (.08)	-			
Prior year aggression	.67 (.08)	.76	***	.52 ↔ .82	*Total Adjusted R^2 = .54 (.59)*
Current Self Social Acceptance	.00 (.10)	.00		-.21 ↔ .21	*Change in R^2 with addition of acceptance & Friendship = .00*
Current Close Friendship	.05 (.08)	.06		-.12 ↔ .21	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Peer Perspectives Predicting Peer-Reported Relational and Overt Aggression

Relational Aggression

Females. Change in relational aggression was modeled at each grade level by first controlling for the prior wave's relational aggression (entered as a predictor variable) and then again by controlling for the prior year's relational aggression. As can be seen in Table 27, relational aggression was stable across six month periods between waves, with low beta weights for prior relational aggression at every grade level (.42, .27, and .18, for grades 10, 11, and 12 respectively). This means that 22% of the variance in current relational aggression is accounted for by the prior wave's (six month difference) aggression. Relational aggression was stable across one year, with low beta weights ranging from .26 to .24 for grades 11 and 12 respectively. This means that the prior year's relational aggression accounted 10% of current aggression. When peer reported social acceptance and close friendships were included in the models, increases in peer reported social acceptance predicted increases in peer reported overt aggression in 11th and 12th grade females, but not 10th grade females. Increases in peer-reported close friendships predicted significant increases in relational aggression in females in grades 11 and 12 (in both prior wave and prior year models). As shown in Table 28, when assessing change across one year, increases in social acceptance and close friendships significantly predicted increases in relational aggression for 11th and 12th grade females.

To summarize, increases peer reported social acceptance predicted increases in relational aggression in females in grades 11 and 12. In other words, adolescents who were viewed as more socially accepted were also viewed as more relationally aggressive by peers. More peer-reported close friendships predicted more relational aggression in grades 10 and 11 when assessing change across six-month, and grades 11 and 12, when assessing change across one

year. This means that adolescent females, who were perceived to have more close friends, were also viewed as more relationally aggressive. Females in grade 12 who were viewed as being socially accepted (regardless of whether they were viewed as having or not having close friends) were high on relational aggression. But females who were viewed as not socially accepted, (regardless of whether they were viewed as having or not having close friends) were rated as less relationally aggression.

Table 27

The Regression of Female Peer Reported Changes in Relational Aggression across Six-Months onto Current Peer Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Peer-reported Change in **Female 10th Grade** Relational Aggression*					
Constant	.07 (.06)	-			*Total Adjusted R^2 = .25(.94) Change in R^2 with addition of acceptance & Friendship = .04 ******
Prior year aggression	.43 (.06)	.42	***	.31 ↔.54	
Current Peer Social Acceptance	.09 (.08)	.08		-.07 ↔.24	
Current Close Friendship	.15 (.07)	.15	*	.01 ↔ .29	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in **Female 11th Grade** Relational Aggression*					
Constant	.07 (.06)	-			*Total Adjusted R^2 = .20 (.96) Change in R^2 with addition of acceptance & Friendship = .14******
Prior year aggression	.30 (.07)	.27	***	.17↔.43	
Current Peer Social Acceptance	.23 (.08)	.21	*	.08↔.33	
Current Close Friendship	.23 (.07)	.22	*	.08↔.37	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in **Female 12th Grade** Relational Aggression*					
Constant	.04 (.09)	-			*Total Adjusted R^2 = .20 (.97) Change in R^2 with addition of Interaction = .02**
Prior year aggression	.19 (.07)	.18	*	.04↔.34	
Current Peer Social Acceptance	.24 (.09)	.22	*	.05↔.42	
Current Close Friendship	.13 .(10)	.12		-.06↔.31	
Social Acceptance x Close Friendship	.14 (.07)	.16	*	-.01↔.27	

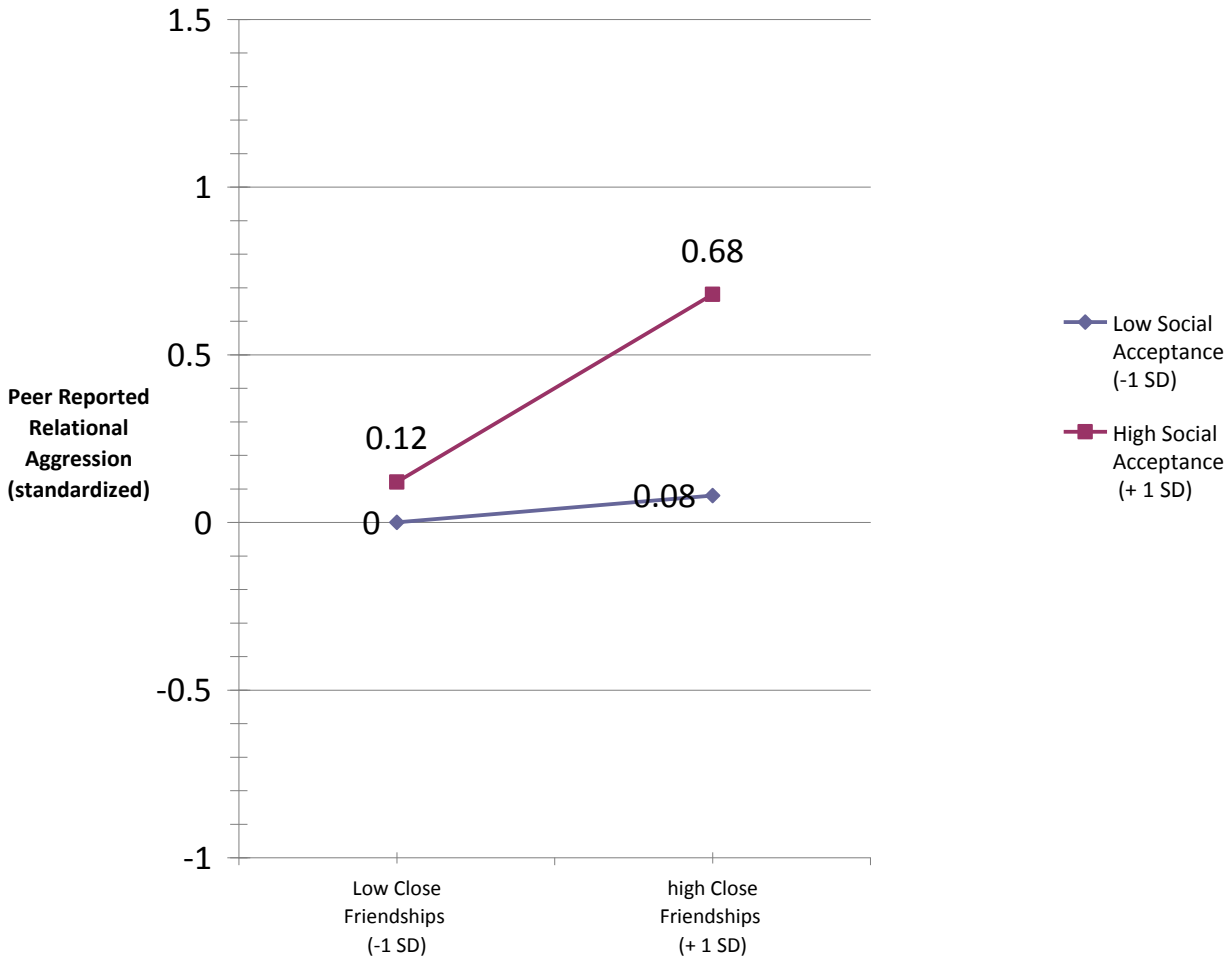


Figure 5. Interaction of Peer-reported Social Acceptance and Close Friendships in Grade 12 Females with Peer-Reported Change in Relational Aggression across Six Months

Table 28

The Regression of Female Peer Reported Yearly Changes in Relational Aggression onto Current Peer Reported Social Acceptance and Close Friendship

	B	*B*	B 95% Confidence Interval	R^2
*Modeling Predictors of Peer-reported Change in **Female 11th Grade** Relational Aggression*				
Constant	.06 (.08)	-		*Total Adjusted R^2 R^2 = .17 (1.0) Change in R^2 with addition of acceptance & Friendship R^2 = .09****
Prior year aggression	.27 (.07)	.26 ***	.13 ↔ .40	
Current Peer Social Acceptance	.21 (.09)	.17 *	.02 ↔ .39	
Current Close Friendship	.18(.08)	.17 *	.02 ↔ -.34	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*			
*Modeling Predictors of Peer-reported Change in **Female 12th Grade** Relational Aggression*				
Constant	.11 (.08)	-		*Total Adjusted R^2 R^2 = .22 (1.0) Change in R^2 with addition of acceptance & Friendship R^2 = .14****
Prior year aggression	.25 (.08)	.24 ***	.10 ↔ .40	
Current Peer Social Acceptance	.22 (.10)	.19 *	.01 ↔ .42	
Current Close Friendship	.24 (.09)	.23 *	.05 ↔ .42	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*			

Males. Change in relational aggression was modeled at each grade level by first controlling for the prior wave's relational aggression (entered as a predictor variable) and then again by controlling for the prior year's relational aggression. As can be seen in Table 29, relational aggression was stable across six month periods between waves, with low beta weights for prior relational aggression at every grade level (.39, .19, and .17, for grades 10, 11, and 12 respectively). This means that 5-18% of the variance in current relational aggression is accounted for by the prior wave's (six month difference) aggression. Relational aggression was stable across one year, with low beta weights ranging from .16 to .17 for grades 11 and 12 respectively. This means that the prior year's relational aggression accounted for 2-3% of current aggression. When peer reported social acceptance and close friendships were included in the models, increases in peer reported social acceptance predicted increases in peer reported overt aggression in 11^{th} and 12^{th} grade males, but not 10^{th} grade males. Increases in peer - reported close friendships predicted significant increases in relational aggression in males in grades 10, but not grades 11 and 12. Increases in close friendships predicted significant increases, across six-month ($\beta = .23$ $p \leq .05$) and one-year ($\beta = .19$ $p \leq .05$) in relational aggression for males in grade 12. An interaction effect (social acceptance by close friendships) was significant for males in grade 10 (see Figure 6 below).

To summarize, increases in peer reported social acceptance predicted increases in relational aggression in males in 10^{th} grade. In other words, adolescents who were viewed as more socially accepted were also viewed as more relationally aggressive by peers. More peer-reported close friendships predicted more relational aggression in grades 12, but not grades 10 and 11. This means that adolescent males, who were perceived to have more close friends, were also viewed as more relationally aggressive. The interaction effect shows that males who were

viewed as being socially accepted and having close friends were viewed as relationally aggressive. However, males who were viewed as not socially accepted (whether perceived as having or not having close friendships) were viewed as less aggressive than those who were viewed as accepted.

Table 29

The Regression of Male Peer Reported Changes in Relational Aggression across Six-Months onto Current Peer Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Peer-reported Change in M**ale 10th Grade** Relational Aggression*					
Constant	-.05 (.06)	-			*Total Adjusted R^2 = .22 (.77) Change in R^2 with addition of Interaction = .02**
Prior year aggression	.37 (.06)	.39	***	.25 ↔ .49	
Current Peer Social Acceptance	.12 (.06)	.14	*	.00 ↔ .24	
Current Close Friendship	.11 (.07)	.11		-.03 ↔ .24	
Social Acceptance x Close Friendship	-.11 (.05)	.13	*	-.21 ↔ -.04	
*Modeling Predictors of Peer-reported Change in M**ale 11th Grade** Relational Aggression*					
Constant	-.08 (.06)	-			*Total Adjusted R^2 = .06 (.87) Change in R^2 with addition of acceptance & Friendship = .04**
Prior year aggression	.07 (.06)	.19	*	.05 ↔ .29	
Current Peer Social Acceptance	.13 (.07)	.15		-.00 ↔ .26	
Current Close Friendship	.08 (.07)	.08		.25 ↔ .49	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in M**ale 12th Grade** Relational Aggression*					
Constant	-.09 (.06)	-			*Total Adjusted R^2 = .10 (.86) Change in R^2 with addition of acceptance & Friendship =. 07***
Prior year aggression	.20 (.09)	.17	*	.04 ↔ .37	
Current Peer Social Acceptance	.05 (.08)	.05		-.10 ↔ .20	
Current Close Friendship	.22 (.08)	.23	*	.06 ↔ .38	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

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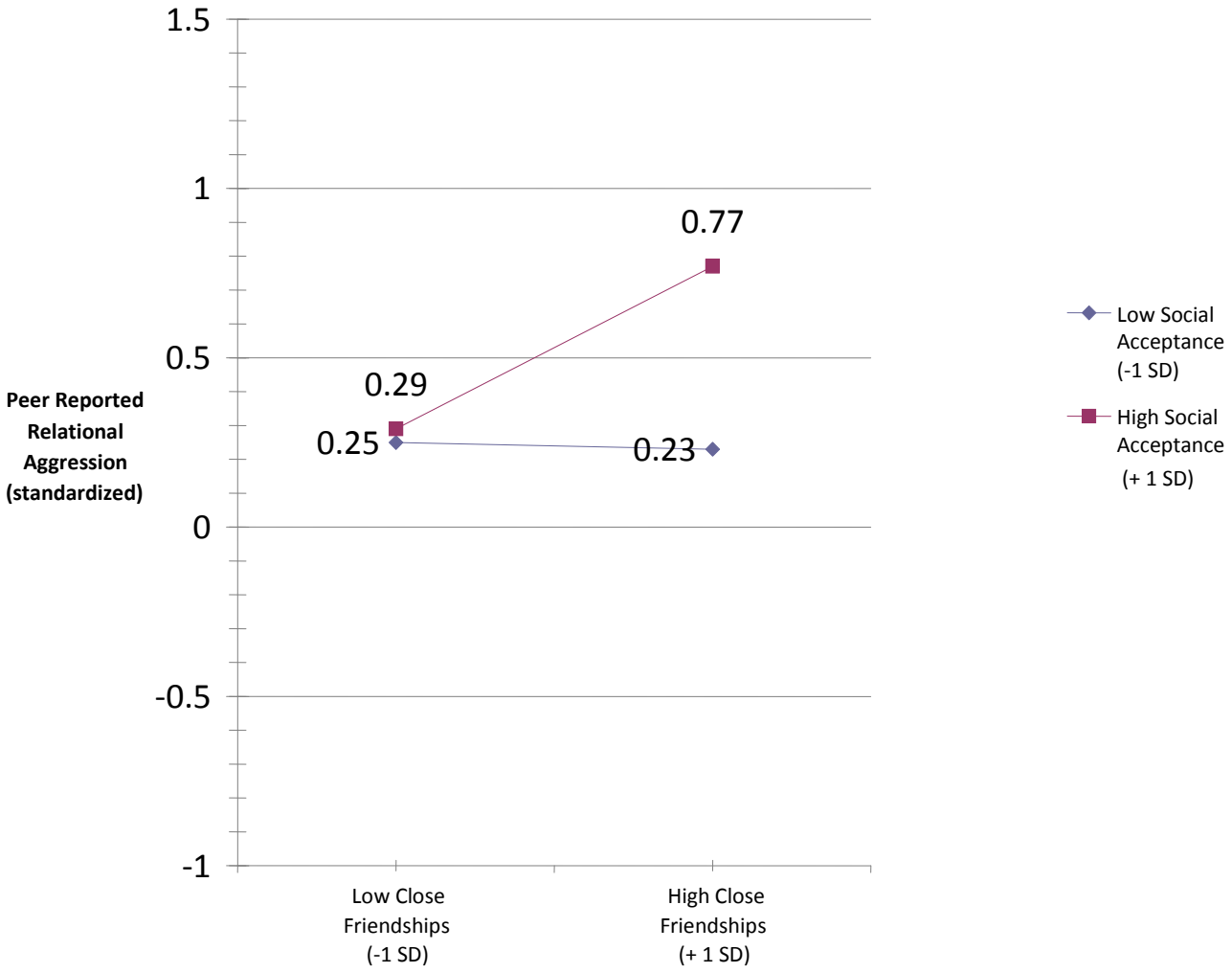

Figure 6. Interaction of Peer-reported Social Acceptance and Close Friendships in Grade 10 Males with Peer-reported Change Relational Aggression across Six Months

Table 30

The Regression of Male Peer Reported Yearly Changes in Relational Aggression onto Current Peer Reported Social Acceptance and Close Friendship

	B	*B*		B 95% Confidence Interval	R^2
*Modeling Predictors of Peer-reported Change in **Male 11th Grade** Relational Aggression*					
Constant	-.02 (.06)	-			
Prior year aggression	.17 (.07)	.16	*	.02 ↔ .32	*Total Adjusted R^2 = .06 (.88)*
Current Peer Social Acceptance	.12 (.07)	.12		-.04 ↔ .25	*Change in R^2*
Current Close Friendship	.12 (.08)	.12		-.04 ↔ -.28	*with addition of acceptance & Friendship = .04**
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in **Male 12th Grade** Relational Aggression*					
Constant	-.14 (.06)	-			
Prior year aggression	.06 (.07)	.07		-.07 ↔ .21	*Total Adjusted R^2 = .08 (.82)*
Current Peer Social Acceptance	.12 (.07)	.14		-.03 ↔ .28	*Change in R^2*
Current Close Friendship	.18 (.08)	.19	*	.01 ↔ .34	*with addition of acceptance & Friendship = .09***
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Overt Aggression

Females. Change in overt aggression was modeled at each grade level by first controlling for the prior wave's overt aggression (entered as a predictor variable) and then again by controlling for the prior year's overt aggression. As can be seen in Table 31, overt aggression was stable across six month periods between waves, with low beta weights for prior overt aggression at every grade level (.58, .39, and .40 for grades 10, 11, and 12 respectively). This means that 9-32% of the variance in current overt aggression is accounted for by the prior wave's (six month difference) aggression. Overt aggression was stable across one year, with low beta weights ranging from .36 to .27 for grades 11 and 12 respectively. This means that the prior year's overt aggression accounted 6-13% of current aggression. Increases in peer-reported social acceptance significantly predicted increases (over six-months and one-year) in overt aggression in females in grade 12, but not grades 10 and 11. Increase in peer-reported close friendships significantly predicted ($\beta = .15$ $p \leq .05$) current overt aggression in 10^{th} grade females, but not 11^{th} and 12^{th} grade females.

To summarize, adolescents who viewed others as more socially accepted were also viewed as more overtly aggressive in grade 12. Close friendships significantly predicted increase in overt aggression in 10^{th} grade females but not 11^{th} or 12^{th} grade females (see Tables 31 and 32).

Table 31

The Regression of Female Peer Reported Changes in Overt Aggression across Six-Months onto Current Peer Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Peer-reported Change in **Female 10th Grade** Overt Aggression*					
Constant	-.10 (.05)	-			*Total Adjusted R^2 = .33 (.73) Change in R^2 with addition of acceptance & Friendship = .02**
Prior year aggression	.62 (.06)	.58	***	.51 ↔ .73	
Current Peer Social Acceptance	-.01 (.06)	-.01		-.12 ↔ .11	
Current Close Friendship	.12 (.06)	.15	*	.041 ↔ .23	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in **Female 11th Grade** Overt Aggression*					
Constant	-.02 (.06)	-			*Total Adjusted R^2 = .16 (.89) Change in R^2 with addition of acceptance & Friendship = .01*
Prior year aggression	.42 (.07)	.39	***	.29 ↔ .55	
Current Peer Social Acceptance	.09 (.07)	.09		-.05 ↔ .23	
Current Close Friendship	-.11 (.07)	-.12		-.24 ↔ .02	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in **Female 12th Grade** Overt Aggression*					
Constant	-.18 (.05)	-			*Total Adjusted R^2 = .11 (.58) Change in R^2 with addition of acceptance & Friendship = .04**
Prior year aggression	.22 (.05)	.30	***	.12 ↔ .32	
Current Peer Social Acceptance	.12 (.06)	.19	*	.01 ↔ .23	
Current Close Friendship	.01 (.05)	.02		-.10 ↔ .10	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 32

The Regression of Female Peer Reported Yearly Changes in Overt Aggression onto Current Peer Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Peer-reported Change in **Female 11th Grade** Overt Aggression*					
Constant	-.05 (.06)	-			*Total Adjusted R^2 = .12 (.85)* *Change in R^2 with addition of acceptance & Friendship = .00*
Prior year aggression	.35 (.07)	.36	***	.22 ↔ .49	
Current Peer Social Acceptance	.04 (.08)	.05		-.10 ↔ .19	
Current Close Friendship	-.03 (.07)	-.04		-.16 ↔ -.10	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in **Female 12th Grade** Overt Aggression*					
Constant	-.19 (.05)	-			*Total Adjusted R^2 = .09 (.59)* *Change in R^2 with addition of acceptance & Friendship = .04**
Prior year aggression	.19 (.06)	.27	***	-07 ↔ .30	
Current Peer Social Acceptance	.14 (.06)	.22	*	.02 ↔ .25	
Current Close Friendship	-.01 (.06)	-.02		-.12 ↔ .01	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Males. Change in overt aggression was modeled at each grade level by first controlling for the prior wave's overt aggression (entered as a predictor variable) and then again by controlling for the prior year's overt aggression. As can be seen in Table 33, overt aggression was stable across six month periods between waves, with low to moderate beta weights for prior overt aggression at every grade level (.68, .45, and .48 for grades 10, 11, and 12 respectively). This means that 21-49% of the variance in current overt aggression is accounted for by the prior wave's (six month difference) aggression. Overt aggression was stable across one year, with lower beta weights ranging from .31 to .24 for grades 11 and 12 respectively. This means that the prior year's overt aggression accounted for 8-11% of current aggression. Peer-reported social acceptance was a positive significant predictor male's current overt aggression in 10^{th} grade (over six months) and 12^{th} grade (over one year). Peer reported close friendships did not predicted current overt aggression in males in grades 10, 11, or 12.

To summarize, males in grades 10 and 12 who were more socially accepted were viewed as more overtly aggressive. Peer-reported close friendships were not significant predictors of current overt aggression in any grade. The interaction effects (close friendship by social acceptance) were not significant in any grade (see tables 33 and 34).

Table 33

The Regression of Male Peer Reported Changes in Overt Aggression across Six-Months onto Current Peer Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Self-Reported Change in **Male 10th Grade** Relational Aggression*					
Constant	-.12 (.07)	-			*Total Adjusted R^2 = .18 (.80)*
Prior year aggression	.35 (.07)	.39	***	.21 ↔ .48	
Current Peer Social Acceptance	.05 (.08)	.05		-.11 ↔ .22	*Change in R^2 with addition of acceptance & Friendship = .04*
Current Close Friendship	-.20 (.0)	-.22	*	-.35 ↔ -.05	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 11th Grade** Relational Aggression*					*Total Adjusted R^2 = .33(.81)*
Constant	.02 (.08)	-			*Change in R^2 with addition of acceptance & Friendship = .06**
Prior year aggression	.19 (.09)	.48	***	.32 ↔ .66	
Current Peer Social Acceptance	-.09 (.11)	-.08		-.32 ↔ .13	
Current Close Friendship	-.27 (.11)	-.21	*	-.46 ↔ -.02	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Self-Reported Change in **Male 12th Grade** Relational Aggression*					
Constant	.02 (.10)	-			*Total Adjusted R^2 = .40(.89)*
Prior year aggression	.61 (.09)	.60	***	-.44 ↔ .79	
Current Peer Social Acceptance	-.12 (.14)	-.08		-.38 ↔ .17	*Change in R^2 with addition of acceptance & Friendship = .02*
Current Close Friendship	-.10 (.12)	-.09		-.31 ↔ .11	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Table 34

The Regression of Male Peer Reported Yearly Changes in Overt Aggression onto Current Peer Reported Social Acceptance and Close Friendship

	B	*β*		B 95% Confidence Interval	R^2
*Modeling Predictors of Peer-reported Change in **Male 11th Grade** Overt Aggression*					
Constant	.05 (.07)	-			
Prior year aggression	.30 (.07)	.31	***	.17 ↔ .44	*Total Adjusted R^2 = .11 (.98)*
Current Peer Social Acceptance	.14 (.08)	.14		-.02 ↔ .30	*Change in R^2 with addition of acceptance & Friendship = .02*
Current Close Friendship	-.01 (.09)	-.01		-.19 ↔ -.17	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				
*Modeling Predictors of Peer-reported Change in **Male 12th Grade** Overt Aggression*					
Constant	.14 (.09)	-			
Prior year aggression	.30 (.09)	.24	***	.12 ↔ .47	*Total Adjusted R^2 = .12 (1.1)*
Current Peer Social Acceptance	.28 (.11)	.23	*	.07 ↔ .49	*Change in R^2 with addition of acceptance & Friendship = .05***
Current Close Friendship	.00 (.11)	.00		-.22 ↔ .22	
Social Acceptance x Close Friendship	*Interaction dropped from model - not significant*				

Summary of Findings in Study 2: Self-Report

Table 35

A Summary of the Regression Beta Weights for Self-reported Social Acceptance and Close Friendship as Predictors of Six Month and One Year Changes in Self-reported Relational Aggression in 10th, 11th, and 12th Grade for Males and Females

		10th Grade		11th Grade		12th Grade	
		6 month	1 year	6 month	1 year	6 month	1 year
Prior Relational Aggression	Male	.39***		.48***	.47***	.60***	.56***
	Female	.50***		.52***	.55***	.76**	.70***
Social Acceptance	Male	.05		-.08	-.34*	-.08	-.22
	Female	-.07		-.30*	.19**	.05	.07
Close Friendship	Male	-.22*		-.21*	-.00	-.09	-.02
	Female	.08		-.23*	-.25*	-.04	.02
Interaction	Male	-		-	-	-	-
	Female	-		-	-	-	-

Table 36

A Summary of the Regression Beta Weights for Self-reported Social Acceptance and Close Friendship as Predictors of Six Month and One Year Changes in Self-reported Overt Aggression in 10th, 11th, and 12th Grade for Males and Females

		10th Grade		11th Grade		12th Grade	
		6 month	1 year	6 month	1 year	6 month	1 year
Prior Overt Aggression	Male	.54***		.71***	.70***	.68***	.76***
	Female	.76***		.83***	.74***	.96***	.81***
Social Acceptance	Male	-.08		-.05	-.12	-.07	.00
	Female	-.02		-.07	-.08	-.03	.12
Close Friendship	Male	-.20*		-.13	-.10	-.01	.06
	Female	.05		-.15*	-.04	.20	.01
Interaction	Male	-		-	-	-	-
	Female	-		-	-	-	-

Summary of Findings in Study 2: Peer Report

Table 37

A Summary of the Regression Beta Weights for Peer Reported Social acceptance and Close Friendship as Predictors of Six Month and One Year changes in Peer Reported Relational Aggression in 10th, 11th, and 12th Grade for Males and Females

		10th Grade		11th Grade		12th Grade	
		6 month	1 year	6 month	1 year	6 month	1 year
Prior Relational Aggression	Male	.39***		.19*	.16*	.17*	.07
	Female	.42***		.27***	.26***	.18*	.24***
Social Acceptance	Male	.14*		.15	.12	.05	.14
	Female	.08		.21*	.17*	.22*	.19*
Close Friendship	Male	.11		.08	.12	.23*	.19*
	Female	.15*		.22*	.17*	.12	.23*
Interaction	Male	.13*		-	-	-	-
	Female	-		-	-	.16*	-

Table 38

A Summary of the Regression Beta Weights for Peer Reported Social acceptance and Close Friendship as Predictors of Six Month and One Year changes in Peer Reported Overt Aggression in 10th, 11th, and 12th Grade for Males and Females

		10th Grade		11th Grade		12th Grade	
		6 month	1 year	6 month	1 year	6 month	1 year
Prior Overt Aggression	Male	.68***		.45***	.31***	.48***	.24***
	Female	.58***		.39***	.36***	.30***	.27***
Social Acceptance	Male	.12*		.13	.14	.14	.23*
	Female	-.01		.09	.05	.19*	.22*
Close Friendship	Male	-.04		-.07	-.01	.07	.00
	Female	.15*		-.12	-.04	.02	-.02
Interaction	Male	-		-	-	-	-
	Female	-		-	-	-	-

DISCUSSION

The most consistent, but unexpected, finding in the current study was that both the strength and direction of the relations between friendship (socially acceptance and close friendships) and aggression (overt and relational) are highly dependent upon whether adolescents are describing themselves or their peers. Indeed, the magnitude of the difference found between self and peer perceptions of aggression and friendships suggest that adolescents' interpretations of our terminology and question wording was truly dependent on whether they were describing themselves or a peer. For example, while adolescents whose peers believed they had close friendships and were socially accepted were more frequently viewed by peers as overtly and relationally aggressive, adolescents who described themselves as being socially accepted and having friends were on the whole *less* likely to see themselves as overtly and relationally aggressive. Additionally, in regression models predicting peer-reported overt aggression, interesting interactions were found between self-reports of close friendships and social acceptance. For example, males who believed they were socially accepted and had close friendships were rated by peers as being more overtly aggressive, but again, when rating their own overt aggression this relation was not found.

A second important finding was that self-perceptions of both overt and relational aggression were highly stable across both six months and one year time periods. Peer-perceptions of overt aggression in both males and females, with the exception of males in one data collection wave, exhibited almost trait-like stability.

The following begins with a discussion of the statistical impact of controlling for prior levels of a dependent variable in regression models (in this case, overt or relational aggression) when the dependent variable is highly stable across time. Next, I will discuss the stark

differences found between adolescents' self-perceptions and their peers' perceptions of their aggressive behaviour and social functioning. Explanations of these findings will be discussed in light of social psychology research on self and other perceptions. The implications of these findings for the interpretation of prior research will be discussed particularly in the measurement and labeling of constructs. Finally, the limitations of the current study and its implications for future research will be summarized.

Ratings of aggression from either six months or one year prior were included as predictor variables in each regression model. By including prior levels (either 6 or 12 months prior) of aggression as an independent variable, the only variance in the dependent variable left to account for is that which represents change since the prior occasion of measurement and error variance. This allows us to model change, increase or decrease in aggression since the measurement of the control variable. In other words, the statistical models predicting change in overt and relational aggression since the last measurement of aggression. Unfortunately, when a control variable is very stable and strong it has statistical consequences for the likelihood of the remaining variables in the regression model accounting for a significant portion of the dependent variables. In the current study, there is little variance left to be accounted for by social acceptance and close friendships after prior levels of aggression are accounted for.

The high stability of aggression in this study is consistent with the idea that aggressive behaviour is a stable behavioural trait. Supporting our findings is research showing that individual differences in aggression persist from childhood into adulthood. For example, Huesemann, Eron, Lefkowitz, & Walter, (1984) found good predictability of aggression at age 30 from measures of aggression at age 8. However, as others have pointed out (e.g. Adams, Bukowski & Bagwell, 2005), although aggression is relatively stable there is individual variation

in the level of stability. That is, aggression is likely to be stable in some people, and unstable in others.

An additional contributor to the high stability of peer-ratings of aggression may be the tendency of adolescents to rate their peers according to reputation. Hymel, Wagner, & Butler, (1990) call this reputation bias-- the tendency for a child or adolescent's reputation to remain even though their behaviour no longer represents the reputation. Reputation bias is especially strong when an adolescent engages in a low frequency, but salient, aggressive act. For example, if an adolescent female punched another female once in 8th grade—the resulting aggressive or "tough-girl" reputation may remain with her through 12th grade, even though it does not align well with her current behaviour. Since overt aggression is a more public behavior, (e.g. easily observable) it is likely to produce greater consensus and associated reputation biases than more concealable acts of relational aggression.

Our findings showed that males and females view their peers who are socially accepted and close friendships as also being more overtly and relationally aggressive than those who are less socially accepted and have fewer close friendships. Specifically, 12th grade females who were viewed as being socially accepted, regardless of whether they were viewed as having close friends or not, were rated by their peers as being more relationally aggressive. However, the 12th grade females who were viewed as not socially accepted, regardless of whether they were viewed as having close friends or not, were viewed as less aggressive. Similarly, males in 10th grade who were viewed as being socially accepted and having close friends were viewed as relational aggressive. Interestingly, 10th grade males who were viewed as less socially accepted, regardless of whether they were viewed as having close friends or not, were also viewed as less

relationally aggressive than those who were viewed as socially accepted. Clearly, the findings suggest that peers' associate adolescents' high social status peers with aggressiveness.

Why might adolescents who are viewed by their peers as socially accepted and having close friends be rated as more aggressive? As other research has suggested, peers' often associate social acceptance with a power based popularity that relies on aggression and subjugation to maintain itself (Cillessen & Mayeux, 2004; Luther & McMahon, 1996; Merten, 1997). Indeed, the widely held view that only *low* peer status is related to aggression is being challenged by researchers. While it makes sense that aggressive, hostile, mean adolescents are not accepted by peers, research has challenged this assumption with innovations in how peer status is measured. For example, in their study on *sociometric* popularity (e.g. measures of attraction and repulsion) and *peer-perceived popularity* (directly asking "who is popular"), Parkhurst & Hopmeyer (1998) found that these two constructs are not strongly correlated--rather, perceived popularity is more strongly correlated with social impact (visibility) than with social preference (likeability). In this study, sociometrically defined popularity correlated only moderately to peer perceived popularity (and some sociometrically rejected children were even perceived as popular). In other words, not all adolescents who are viewed as popular are well liked.

This evidence suggests that, although some children view others as "popular," they are not necessarily liked-- an important explanation of these findings lies simply in the method of measurement. Peers perceptions of popular children and adolescents is associated with aggression, dominance, and "stuck-up" behaviour, while sociometric nominations designated as popularity by researchers has been characterized by prosocial behaviors such as kindness and trustworthiness (Cillessen & Mayeux 2004; Merten 1997; Parkhurst & Hopmeyer, 1998).

Sociometric methods often measure likability (e.g. "who do you like?") but label the identified youth as "popular". However, peer-perceived popularity or "judgmental sociometry" methods directly asks youth to judge others' popularity--without measuring personal liking (Babad, 2001).

Adolescents' own perceptions of their social acceptance and close friends were either negatively related or unrelated to their perceptions of their aggression. Younger males (grades 10 and 11) and grade 11 females who reported having close friends, also perceived themselves as less relationally aggressive, but for older males there was no connection between relational aggression and close friendships. There was no relationship between self-perspectives for social acceptance and close friendships and peer perspectives for relational aggression; however, we found interesting results with overt aggression. Males in 12th grade who reported more social acceptance, regardless of believing they had close friends or not, were viewed by peers as more overtly aggressive than males who reported being less socially accepted. In 11th grade, however, there was a complete disordinal interaction between close friendship and social acceptance, such that males with high social acceptance and high close friendships were significantly more overtly aggressive.

The primary finding in this study, that links between peer relationships and overt and relational aggression depend on who we ask, raises several important questions. First, are some adolescents simply in denial about the aggressiveness of their social behaviour? Or, are aggressive adolescents more likely to have an inflated sense of their social acceptance or rejection he or she receives? A growing body of literature has found that aggressive children (particularly the aggressive rejected profile) have overly positive views of their competence (e.g. Hymel, Bowker, & Woody, 1993; Patterson, Kupersmidt, & Griesler, 1990). Perhaps it is a

normative tendency for adolescents to view their own behaviour more positively than others do, and to justify their negative behavior. However, other explanations for this self-enhancing bias have been posited. For example, an intentional *self-presentation bias* might be reported in order to deceive others. Others have suggested that overly positive views could be because aggressive youth may not receive negative feedback from peers who fear retaliation (Hymel et al., 1993).

Differences in adolescents and their peers perspectives can also be can be explained by basic psychological processes of how humans perceive themselves versus others. For example, peers might perceive an adolescents' social acceptance, close friendships, and aggressiveness quite differently than the adolescent does. Mpofu (2003) has suggested that there are two views of social status. *Actual peer social* status, the outsider view, is how the individual is viewed from the assessments of others. *Perceived social status*, the insider view, is how the individual perceives his or her own social status. These two experiences may not be unrelated as the perceived social status may mediate the actual social status. For example, how an individual feels he is viewed may result in him acting out, or not initiating prosocial behaviour.

These differences in perspective suggest that adolescents may emphasize and construct social information differently when assessing themselves than they do when assessing others. This schism between self and other perception is also documented in other bodies of research. For example, in their 2003 meta-analysis, Renk and Phares found that self-other cross informant correlations of social competence, (e.g. self and peer, or self and teacher) were lower than correlations between other-other cross-informant pairs (e.g. peer and teacher). They found that the largest effect size was between teacher and peer ratings. Interestingly, this meta-analysis also found that many cross-informant pairs had higher agreement if sociometric measures were use (as opposed to measures such as social problem solving questionnaires). Interestingly, agreement

between raters may also depend on the type of behaviour that is being assessed. For example, examining the agreement between peers, self, and teacher perspectives, Ledingham, Younger, Schwartzman, & Bergeron, (1982) found that agreement between raters is reduced when self-perspectives are included for likability, but increased for aggressive behaviours. This finding has been supported in other research where correlations between self ratings and others' ratings are usually higher on highly observable behaviour behaviours such as overt aggression, than for more subtle personal characteristics (Stanger & Lewis, 1993). This research suggests the perspectives one chooses for aggression may not be as important as perspectives for other characteristics (e.g. likability). However, other research has found that self and other perspective have the greatest discrepancies when youth are at polar ends of behaviour or characteristics (e.g. extremely aggressive or extremely popular or unpopular) (Cairns, et al., 1989).

Within a social cognitive framework, the results of the current study can be explained by the *fundamental attribution error*—the tendency to view our own behaviours due to situational explanations, but to view others behaviours as being due to personality-based explanation (Jones & Harris, 1967). In the current study, participants may have been less likely to rate their own behaviour as aggressive because they perceived it appropriate to a situation (e.g. they were just protecting themselves, or they were using aggressive behaviour to climb the social ladder). However, when peers evaluate an adolescent's aggressiveness, according to the fundamental attribution error, peers are more likely to attribute behaviours to dispositional factors (e.g. "she hurts other people's feelings by excluding them because she is a mean person!"). This discrepancy is called the *actor-observer bias* (Jones & Nisbett, 1971). It is possible that if adolescents do not perceive harming others as the goal of their own behaviour they may see it as the accidental fallout of their social goals (e.g. popularity, belonging, power). The adolescent

describing his or herself may not see their behaviour as aggressive because they are certain that intent to harm was not their goal. Observing peers, however, must decide whether they are observing an aggressive person who intends to harm, or a person who unintentionally harms. The fundamental attribution theory states that the peer is more likely to attribute intent to the adolescent's aggressive behaviour, underestimating external influences on and overestimating the internal traits or tendencies of others.

A potential limitation of this dissertation is that the aggression measures were abbreviated for the use of the larger longitudinal project. These measures have not been used in other research. While the measures showed good reliability, the validity of these abbreviated measures has not been examined.

Originally, acceptance and rejection scores were assumed to be unidimensional--low scores on one dimension, meant high scores on the other. However, it is important to note that acceptance and rejection are not opposites. A caveat of the current dissertation is that this study does not distinguish between adolescents who are actively rejected and those who are neglected *or* wish to be alone. In peer relations research, many researchers have argued for this important distinction (e.g. Rubin & Asendorpf, 1993; Rubin, LeMare, & Lollis, 1990).

As discussed in an earlier section, social acceptance can be associated with negativity or perceptions of social power; and with genuine liking. The social acceptance items in the current study used from Harter's social acceptance subscale tap into both popularity and likability of these constructs. Future research should use measures that distinguish between likeability and social power. For example, direct measures of perceived popularity could be obtained by asking "Is this person one of the "popular" students at school?" and measures of likeability could include asking "Is this person genuinely liked by others in your school?" For more precision in

our understanding of the links between peer relationships and aggression it would be interesting for future studies to ask more specific questions (e.g. “Is this person liked by everyone?” “Is this person liked by only his her close friends?” “Is this person liked by no one?”).

Data collection via peer nomination methods is common in elementary schools where a group of students typically spend the whole day together, but can be challenging in high schools where not all students know to each other. In this study, computerized rubrics were used to increase the likelihood of matching up the appropriate peers for each adolescent (e.g. common elementary and middle schools, and classes taken together in high school thus far); however, the certainty of familiarity with each other assumed in elementary school could never be achieved. Given these sources of error variance, peer rating techniques at the high school level will always be less powerful.

Finally, adolescents in Study 2 may not have been nominated, because they are new to the classroom or unknown to others. This is quite distinct from adolescents’ that are nominated by peers because they are disliked or not socially accepted. Chan and Mpofu (2001) propose a method of overcoming this problem by adding a category to a rating scale of, “I don’t know this student well.” The authors suggest that this could identify children who are not nominated because they are not known, and not because they are not liked. Future research should always include this option.

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Appendix A

Means and Standard Deviations for Peer-report Relational Aggression for Females Across Waves

	Mean	Std. Deviation
W09	.1616	.15238
W10	.1381	.15249
W11	.1271	.14646
W12	.1180	.17286
W13	.1334	.19655
W14	.0954	.13417

Appendix B

Means and Standard Deviations for Peer-report Relational Aggression for Males Across Waves

	Mean	Std. Deviation
W09	.1182	.13055
W10	.0942	.12170
W11	.1237	.14961
W12	.0967	.14368
W13	.0834	.12384
W14	.0668	.11125

Appendix C

Means and Standard Deviations for Peer-report Overt Aggression for Females Across Waves

	Mean	Std. Deviation
W09	.1977	.20695
W10	.1706	.24157
W11	.1555	.19262
W12	.1593	.21623
W13	.1490	.23796
W14	.0898	.14204

Appendix D

Means and Standard Deviations for Peer-report Overt Aggression for Males Across Waves

	Mean	Std. Deviation
W09	.2603	.28225
W10	.2669	.29666
W11	.2063	.23281
W12	.1946	.22932
W13	.2006	.24258
W14	.1895	.27934

Appendix E
Multi Trait Correlation Matrices for Females Peer-Report Aggression Items

Items	Test Date	Inter-Item Correlations Within Test-Date: Overt Aggression Items 1. hits or pushes	2. yells or calls others names	3. starts fights	4. picks on others	Relational Aggression Items 5. keeps others out	6. says wont like	7. ignores others	8. keeps others from being in
2. "Who yells or calls others names?"	10-Fall	.64**							
	10-Spring	.59**							
	11-Fall	.36**							
	11-Spring	.47**							
	12-Fall	.58**							
	12-Spring	.39**							
3. "Who starts fights?"	10-Fall	.70**	.63**						
	10-Spring	.68**	.51**						
	11-Fall	.37**	.31**						
	11-Spring	.18*	.16*						
	12-Fall	.43**	.50*						
	12-Spring	.38**	.18*						
4. "Who picks on others"	10-Fall	.62**	.63**	.78**					
	10-Spring	.56**	.64**	.63**					
	11-Fall	.39**	.42**	.41**					
	11-Spring	.58**	.37**	.24**					
	12-Fall	.49**	.61*	.59*					
	12-Spring	.28**	.13	.53***					
5. "Who gets even by keeping others out of their group?	10-Fall	.33**	.45**	.38**	.37**				
	10-Spring	.42**	.46**	.41**	.51**				
	11-Fall	.21**	.34**	.20**	.22**				
	11-Spring	.20**	.24**	.09	.15*				
	12-Fall	.39*	.45**	.35**	.44**				
	12-Spring	.11	.16*	.27**	.24**				
6. "Who tells others he/she will not like them unless they do what he/she says?"	10-Fall	.38**	.50**	.49**	.50**	.49**			
	10-Spring	.39**	.34**	.40**	.48**	.35**			
	11-Fall	.12	.13*	.34**	.14*	.12			
	11-Spring	.15*	.28*	.05	.19**	.26**			
	12-Fall	.34**	.40**	.47**	.39**	.47**			
	12-Spring	.11	.34**	.05	.12	.15			
7. "Who ignores or stops talking to others when they are mad?"	10-Fall	.23**	.39**	.44*	.42**	.42**	.47**		
	10-Spring	.14*	.31*	.18**	.22**	.45**	.35**		
	11-Fall	.19**	.14*	.41*	.23**	.19*	.18**		
	11-Spring	.06	.09	.18*	.12	.28**	.08		
	12-Fall	.25**	.33**	.34**	.31	.40**	.39**		
	12-Spring	.14	.17*	.16*	.10	.23**	.11		
8. "Who keeps others from being in the group?"	10-Fall	.30**	.43**	.44**	.47**	.53**	.62**	.44	
	10-Spring	.32**	.36**	.30**	.41**	.54**	.37**	.41**	
	11-Fall	.35**	.08	.28**	.33*	.37**	.08	.26**	
	11-Spring	.10	.29**	.02	.21**	.45**	.61**	.12	
	12-Fall	.42**	.47**	.50**	.43**	.54**	.54**	34**	
	12-Spring	.31**	.25**	.21**	.08	.48**	.15	.20**	

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

Appendix F
Multi Trait Correlation Matrices for Males Peer-Report Aggression Items

Items	Test Date	Inter-Item Correlations Within Test-Date: Overt Aggression Items 1. hits or pushes	2. yells or calls others names	3. starts fights	4. picks on others	Relational Aggression Items 5. keeps others out	6. says wont like	7. ignores others	8. keeps others from being in
2. "Who yells or calls others names?"	10-Fall	.74**							
	10-Spring	.73**							
	11-Fall	.52**							
	11-Spring	.50**							
	12-Fall	.54*							
	12-Spring	.67**							
3. "Who starts fights?"	10-Fall	.70**	.64**						
	10-Spring	.64**	.62**						
	11-Fall	.56**	.56**						
	11-Spring	.23**	.23**						
	12-Fall	.46*	.50**						
	12-Spring	.38**	.57**						
4. "Who picks on others"	10-Fall	.68**	.76**	.70**					
	10-Spring	.58**	.69**	.63**					
	11-Fall	.50**	.68**	.53**					
	11-Spring	.40**	.53**	.12*					
	12-Fall	.42**	.57**	.45*					
	12-Spring	.69**	.59**	.34**					
5. "Who gets even by keeping others out of their group?	10-Fall	.34*	.38*	.38**	.40**				
	10-Spring	.42**	.47**	.45**	.41**				
	11-Fall	.32**	.40**	.38**	.39**				
	11-Spring	.17*	.43**	.15*	.24**				
	12-Fall	.29**	.38**	.29*	.35**				
	12-Spring	.27**	.33**	.22**	.26**				
6. "Who tells others he/she will not like them unless they do what he/she says?"	10-Fall	.38**	.38**	.41**	.42**	.43**			
	10-Spring	.39**	.44**	.50**	.54**	.44**			
	11-Fall	.34**	.48**	.42**	.34**	.47**			
	11-Spring	.06	.15*	.07	.13	.27*			
	12-Fall	.16*	.29*	.24*	.40**	.26**			
	12-Spring								
7. "Who ignores or stops talking to others when they are mad?"	10-Fall	.23**	.30**	.39**	.36**	.37**	.36*		
	10-Spring	.24**	.34**	.35**	.33**	.35**	.31**		
	11-Fall	.12*	.34**	.31**	.32**	.37**	.39**		
	11-Spring	.01	.02	.35*	-.01	.17*	.01		
	12-Fall	.23**	.39**	.38**	.37**	.14	.27*		
	12-Spring	.32**	.26**	.08	.24**	.37**	.39**		
8. "Who keeps others from being in the group?"	10-Fall	.46**	.47**	.42**	.53**	.59**	.50**	.43**	
	10-Spring	.37**	.44**	.43**	.55**	.49**	.44**	.45**	
	11-Fall	.27**	.26**	.25**	.39**	.47**	.33**	.33**	
	11-Spring	-.04	.16*	.16*	.19*	.34**	.25**	.06	
	12-Fall	.23**	.36**	.33**	.42**	.45**	.41**	.40**	
	12-Spring	.11	.13	.03	.21**	.29**	.23**	.24**	

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

Appendix G

Means and Standard Deviations for Self-report Relational Aggression for Females Across Waves

	Mean	Std. Deviation
W09	9.0998	3.57046
W10	8.3042	2.99438
W11	8.3636	3.31990
W12	7.6979	2.96690
W13	7.7895	2.96754
W14	7.4211	2.98111

Appendix H

Means and Standard Deviations for Self-report Relational Aggression for Males Across Waves

	Mean	Std. Deviation
W09	7.9450	3.59536
W10	7.7504	2.94888
W11	7.8087	3.20191
W12	7.9680	3.48947
W13	7.5630	3.47787
W14	7.5429	3.38273

Appendix I

Means and Standard Deviations for Self-report Overt Aggression for Females Across Waves

	Mean	Std. Deviation
W09	9.2868	3.31808
W10	9.2174	3.42362
W11	9.1042	3.16608
W12	8.6979	3.25777
W13	8.5579	3.12749
W14	8.3026	2.97554

Appendix J

Means and Standard Deviations for Self-report Overt Aggression for Males Across Waves

	Mean	Std. Deviation
W09	9.4850	3.66427
W10	9.2107	3.10045
W11	9.9941	3.79143
W12	9.2698	3.44653
W13	8.7250	3.34051
W14	8.6415	3.12346

Appendix K
Multi Trait Correlation Matrices for Females Self-Report Aggression Items

Items	Test Date	Inter-Item Correlations Within Test-Date: Overt Aggression Items 1. Hits back	2. More fights	3. threatened	4. yell or swear	Relational Aggression Items 5. say mean things	6. silent treatment	7. out group	8. friends mad
2. "I get into fights more than the average person"	10-Fall	.19**							
	10-Spring	.27**							
	11-Fall	.26**							
	11-Spring	.22*							
	12-Fall	.22*							
	12-Spring	.35**							
3. "I have threatened people"	10-Fall	.35**	.29**						
	10-Spring	.41**	.47**						
	11-Fall	.40**	.41**						
	11-Spring	.41**	.37**						
	12-Fall	.42**	.33**						
	12-Spring	.46**	.44**						
4. "When people bug me, I may yell or swear at them"	10-Fall	.46**	.16*	.47**					
	10-Spring	.49**	.24**	.62**					
	11-Fall	.36**	.12	.45**					
	11-Spring	.38**	.39**	.52**					
	12-Fall	.55**	.26*	.53**					
	12-Spring	.55**	.26*	.37*					
5. "I say mean things about people I don't like"	10-Fall	.36**	.31**	.50**	.58**				
	10-Spring	.31**	.25**	.34**	.57**				
	11-Fall	.33**	.24**	.44**	.44**				
	11-Spring	.28**	.22*	.39**	.42**				
	12-Fall	.41*	.13	.26*	.44**				
	12-Spring	.42**	.11	.33**	.51**				
6. "When I am mad at someone I give him/her the silent treatment"	10-Fall	.40**	.21**	.19*	.33**	.35***			
	10-Spring	.31**	.23**	.18*	.15	.11			
	11-Fall	.27**	.13	.19*	.13	.33**			
	11-Spring	.13	-.02	.18	.18	.36			
	12-Fall	.17	-.07	.10	.09	.19			
	12-Spring	.16	-.03	.06	.11	.33**			
7. "If I dislike someone, I try to keep them out of my group"	10-Fall	.27**	.23*	.34*	.35**	.50*	.36**		
	10-Spring	.20*	.13	.21**	.30**	.43**	.21**		
	11-Fall	.22*	-.04	.16	.31**	.45**	.37**		
	11-Spring	.13	.21*	.26**	.17	.29**	.21*		
	12-Fall	.16	.30**	.28**	.29**	.44**	.18		
	12-Spring	.15	.10	.20	.14	.51**	.39**		
8. "When I am mad at someone, I try to get friends mad at them too"	10-Fall	.05	.05	.24**	.25**	.37**	.23**	.36**	
	10-Spring	.03	.05	.24**	.34**	.50*	.11	.23*	
	11-Fall	-.02	-.08	.11	.14	.28**	.10	.29**	
	11-Spring	.13	.07	.31*	.36**	.41**	.24*	.41**	
	12-Fall	.08	.20	.02	.23*	.36**	.16	.39**	
	12-Spring	.07	.08	.01	.22	.44**	.27**	.49**	

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

Appendix L
Multi Trait Correlation Matrices for Males Self-Report Aggression Items

Items	Test Date	Inter-Item Correlations Within Test-Date: Overt Aggression Items 1. Hits back	2. More fights	3. threatened	4. yell or swear	Relational Aggression Items 5. say mean things	6. silent treatment	7. out group	8. friends mad
2. "I get into fights more than the average person"	10-Fall	.34**							
	10-Spring	.33**							
	11-Fall	.32**							
	11-Spring	.37**							
	12-Fall	.31**							
	12-Spring	.26**							
3. "I have threatened people"	10-Fall	.37**	.40**						
	10-Spring	.28**	.29**						
	11-Fall	.43**	.49**						
	11-Spring	.48**	.48**						
	12-Fall	.45**	.42**						
	12-Spring	.37**	.34**						
4. "When people bug me, I may yell or swear at them"	10-Fall	.35**	.31**	.59**					
	10-Spring	.30**	.20**	.50**					
	11-Fall	.48**	.34**	.55**					
	11-Spring	.54**	.19**	.46**					
	12-Fall	.44**	.19*	.51**					
	12-Spring	.44**	.06	.42**					
5. "I say mean things about people I don't like"	10-Fall	.26**	.27**	.54**	.60**				
	10-Spring	.18*	.11	.37**	.49**				
	11-Fall	.27**	.29**	.50**	.60**				
	11-Spring	.51*	.33**	.34**	.37**				
	12-Fall	.37**	.26**	.52**	.63**				
	12-Spring	.27**	.28**	.47**	.44*				
6. "When I am mad at someone I give him/her the silent treatment"	10-Fall	.14*	.19*	.17*	.17*	.23**			
	10-Spring	.06	.03	.06	.13	.08			
	11-Fall	.11	.03	.14	.12	.21**			
	11-Spring	.12	.23**	.29**	.21**	.14			
	12-Fall	.16	.05	.29**	.11	.25**			
	12-Spring	.09	.19*	.17	.03	.17			
7. "If I dislike someone, I try to keep them out of my group"	10-Fall	.23**	.29**	.36**	.35**	.47**	.33**		
	10-Spring	.27**	.14	.14	.25**	.49**	.14		
	11-Fall	.19*	.11	.36**	.28**	.39	.16*		
	11-Spring	.42**	.19*	.41**	.42**	.45**	.25**		
	12-Fall	.45**	.01	.44**	.35**	.56**	.37**		
	12-Spring	.23*	.38**	.45**	.15	.50**	.35**		
8. "When I am mad at someone, I try to get friends mad at them too"	10-Fall	.19**	.28**	.42**	.39**	.45**	.35**	.46**	
	10-Spring	.18*	.18*	.25**	.24**	.36*	.11	.35**	
	11-Fall	.16*	.33*	.36**	.35*	.29**	.25**	.36**	
	11-Spring	.37**	.40**	.59**	.41	.51**	.27**	.51**	
	12-Fall	.31**	.13	.37**	.31**	.50**	.41**	.57**	
	12-Spring	.20*	.56**	.45**	.02	.49**	.33**	.54**	

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