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The Intervening Role of Relational Aggression between Psychological Control and Friendship Quality

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This study investigated the associations between parental psychological control, relational aggression, friendship quality and loneliness in adolescence. A model was proposed in which relational aggression plays an intervening role in the relations between psychological control and both friendship outcomes. In a sample comprised of middle adolescents and their parents, process analyses showed that psychological control (indexed by parent and adolescent reports) positively predicted adolescents' engagement in relational aggression (indexed by adolescent self-report and a peer nomination assessment), which, in turn, negatively predicted friendship quality and positively predicted loneliness. The model held for both mothers and fathers and was not moderated by adolescents' gender. The discussion focuses on possible mechanisms explaining the relations between psychological control, relational aggression, and friendship outcomes.

Introduction

Current research on children's social development in general and on the development of aggressive social behavior in particular, has witnessed an upsurge in interest in the construct of relational aggression (see Crick et al., 1999 and Underwood, Galen, & Paquette, 2001 for reviews). One important reason for this increased research attention is that relational aggression, unlike physical aggression, is at least as common in girls as it is in boys (Crick et al., 1999). Relational aggression refers to behaviors that inflict social harm on others and is used by children who intend to damage their peers' relationships by such means as social exclusion, gossiping, and threatening to end the friendship (Crick, 1996; Crick & Grotpeter, 1995). Contrary to physical or overt aggression, relational aggression may be expressed in a subtle or manipulative fashion, for instance, by giving a friend the "silent treatment" until he or she gives in to a demand or request.

Research has shown that both the use and the experience of relational aggression have detrimental consequences for children's social functioning, such as peer rejection, social exclusion, and loneliness (Crick et al., 1999). Unfortunately, this research has primarily addressed the role of relational aggression during the preschool years and middle childhood and far less attention has been devoted to the effect of relational aggression on adolescents' social development (Crick et al., 1999). In addition, research is only now beginning to explore the (parental) antecedents of children's and adolescents' relational aggression (Nelson & Crick, 2001; Werner & Nixon, 2005). The present study aims to contribute to the extant literature by examining parental psychological control as an antecedent of adolescents' use of relational aggression in their friendships and, in addition, how relational aggression affects the quality of adolescents' friendships. To do so, we proposed and tested an integrated model in which psychological control is indirectly related to impairments in adolescents' friendships through the use of relational aggression.

Psychological Control and Relational Aggression

Parental psychological control refers to a rearing style characterized by the excessive use of

techniques that intrude upon the child's psychological world (Barber, 1996; Barber & Harmon, 2002). In order to make their child comply with their expectations, psychologically controlling parents rely on intrusive and manipulative strategies such as guilt-induction, shaming, and love withdrawal. Psychological control has been shown to be predictive of maladjustment and internalizing problems, such as depression, anxiety, and loneliness, in children and adolescents (e.g., Barber & Harmon, 2002; Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005).

In the present research, we hypothesize that parents' use of psychological control may facilitate their adolescents' use of relational aggression in their friendships. This hypothesis fits with a social-learning perspective, which suggests that the parent-child relationship functions as a model for children's relationships with their friends. When children are exposed to intrusive or manipulative behaviors by their caregivers, they likely will adopt these same relationally aggressive strategies in their friendships (Nelson & Crick, 2002). For instance, if parents are less responsive when their children fail to meet certain standards, children may engage in similar aggressive behaviors in their own friendships. Thus, based on social-learning principles, children of psychologically controlling parents are expected to engage in manipulative and intrusive strategies (e.g., relational aggression) with their friends, behaviors that parallel the strategies their caregivers used towards them (Nelson & Crick, 2002; Nelson, Hart, Yang, Olsen, & Jin, 2005).

In addition to this modeling mechanism, adolescents' attachment security or satisfaction of their need for relatedness may serve as additional (yet related) mechanisms to explain why psychologically controlling parenting relates to higher levels of relational aggression. Both attachment theory (Bowlby, 1980, 1988) and self-determination theory (SDT; Deci & Ryan, 2000) argue that people possess a fundamental need for relatedness or a need to be involved in secure, supportive, close relationships with others that provide unconditional acceptance of thoughts and feelings. To the extent that children and adolescents grow up in inconsistent or (psychologically) controlling parenting environments, their sense of security and authentic relatedness within that relationship is likely to be damaged. According to

attachment theory, insecure representations of attachment-relevant relationships with parents carry over into children's relationships with others, including peers and friends. La Guardia, Ryan, Couchman, and Deci (2000), for instance, demonstrated that individuals' experience of need satisfaction within the attachment relationship with their mothers predicts their sense of security in relationships with others (including romantic partners and friends). Hence, children of psychologically controlling parents may expect that they will be rejected and conditionally accepted by their peers. This generalized expectancy most likely results in feelings of insecurity within peer relationships and friendships, which children might compensate for by using negative and aggressive behaviors toward their friends. Relationally aggressive behaviors would then help adolescents to cope with a sense of insecurity and with the anticipation of rejection in relationships and would serve to protect their personal status in those relations. This hypothesis is in line with Deci and Ryan's (2000) claim that individuals might engage in aggressive behaviors to compensate for their thwarted need-satisfaction.

In sum, psychological control might facilitate the use of relational aggression through two different channels: psychologically controlling parents might directly model for children a way of interacting with their friends, or they might provoke a sense of insecurity that adolescents attempt to cope with by using relational aggression toward their peers and friends. Empirical research documenting the relations between psychological control and relational aggression has been mainly limited to preschool aged children, and has yielded mixed results. Nelson and Crick (2002), for instance, found that paternal psychological control was significantly related to relational aggression in girls. Maternal psychological control, by contrast, was unrelated to both boys' and girls' relational aggression. Yang et al. (2004) found that both maternal and paternal psychological control were predictive of relational aggression, although maternal psychological control only predicted relational aggression in girls. Hart, Nelson, Robinson, Olsen, & McNeilly-Choque (1998) did not find any evidence for an association between psychological control and relational aggression. To date, only one study has examined relations between psychological control and relational aggression in (early) adolescence. Loukas, Paulos, and

Robinson (2005) found a positive association between maternal psychological control and relational aggression but did not examine paternal psychological control.

The relative lack of consistent relations between psychological control and relational aggression obtained in past research is surprising because, at the conceptual level, both constructs are strongly related. One explanation for this may be that most studies have used parent reports of their own use of psychological control and that parents may not provide the most valid report of psychological control. Schwarz, Barton-Henry, & Pruzinsky (1985), for instance, found that the inter-rater reliability was the lowest for parent reports on psychological control (compared to child and observer reports) and that parents tend to be biased towards presenting a favorable image of their own child-rearing behavior (see also Sessa, Avenevoli, Steinberg, & Morris, 2001). Contrary to the studies relying on parent reports, Loukas et al. (2005) relied on children's reports of the parenting constructs. However, when adolescents also provide self-reports on relational aggression, an exclusive reliance on child reports also yields limitations because any significant finding may be due to shared method variance. Therefore, and in line with suggestions made by Schwarz et al. (1985), the present study relied on both parent and child reports of psychological control and used both reports as indicators of the same underlying construct in order to obtain a more valid estimation of the true level of psychological control. Similarly, in line with Crick et al.'s (1999) claim that the best measure of relational aggression may be a composite averaged over multiple informants, we used both a self-report and a peer nomination instrument (i.e., an instrument which involves adolescents within classes to nominate peers who fit a number of behavioral descriptors of relational aggression) to assess relational aggression and modeled both as indicators of the construct of relational aggression.

In addition to extending previous research by obtaining multiple informants of psychological control and relational aggression, we also focused on an understudied age group in this domain, that is, adolescents. We believe studying the effect of psychological control on relational aggression in adolescents is important because both constructs are particularly salient during this age period (Barber,

1996; Yoon, Barton, & Taiariol, 2004). Although parental psychological control is thought to create a vulnerability to negative adjustment at any age period, this autonomy-inhibiting parenting dimension is considered to be particularly detrimental for children's functioning during adolescence, an age period characterized by increased needs for autonomy (Barber, 1996; Hill & Holmbeck, 1986). In addition, adolescence is characterized by changes in both cognitive and social domains that may result in a more frequent and sophisticated use of relational aggression (Yoon et al., 2004). For instance, during adolescence friendships become more exclusive and intense and involve more intimate sharing and disclosure (Hill & Holmbeck, 1986). At the same time, adolescents have developed the cognitive abilities that are necessary to engage in the sometimes covert and manipulative behaviors that characterize relational aggression (Yoon et al., 2004). Not surprisingly then, relational aggression has been shown to escalate during early and middle adolescence (Werner & Nixon, 2005). Given the heightened salience of both parental psychological control and relational aggression during adolescence, this developmental period was considered to be highly relevant for the study of the relation between psychological control and relational aggression.

Relational Aggression and Social Functioning

Although relational aggression is typically expressed in a more covert or subtle fashion than physical aggression, research has demonstrated that it yields equally high social and personal costs as physical aggression (see Crick et al., 1999 for an overview). Moreover, the negative outcomes of relational aggression are not limited to victims of relational aggression, but also apply to the aggressors themselves. It has been found, for instance, that relationally aggressive children display more externalizing problems (Crick, 1997; Prinstein, Boergers, & Vernberg, 2001), are more frequently rejected by peers (Crick, 1996; Tomada & Schneider, 1997; Werner & Crick, 1999) and, perhaps as a consequence, report more loneliness and depressive feelings (Crick, 1997; Crick & Grotpeter, 1995).

Whereas initial research on relational aggression focused on children's general functioning and their functioning in the broad peer context (e.g., popularity, social acceptance), recent research has

explored the impact of relational aggression on children's adjustment in more exclusive and dyadic relationships such as friendships (Grotmeter & Crick, 1996) and romantic relationships (Linder, Crick, & Collins, 2002). Grotmeter and Crick (1996), for instance, reported that relationally aggressive middle school children experienced higher levels of conflict and jealousy in the relationship with their best friend. Similar to the studies on psychological control and relational aggression, however, this research has been limited to preschool and middle childhood (Crick et al., 1999). A second important aim of the present study, therefore, was to further examine the associations between relational aggression and the quality of friendships in middle adolescents.

We examined relational aggression in relation to a set of indicators of the quality of adolescents' friendships, such as companionship, support, felt security, and closeness (Bukowski, Hoza, & Boivin, 1994). By definition, relationally aggressive children inflict harm on their friends' interpersonal relationships when their friends do not behave in accordance with the children's personal wishes. Hence, the support and companionship within a friendship in which relational aggression is used is conditional and manipulative, which most likely gives rise to feelings of distrust, resentment, and alienation (Grotmeter & Crick, 1996), and thus is likely to undermine that quality of the relationship.

We also examined adolescents' feelings of loneliness as an outcome of relational aggression. Loneliness has been defined as a negative emotional response to a discrepancy between desired and achieved levels of social contact (Peplau & Perlman, 1982) and has been found to predict general maladjustment, particularly internalizing problems (e.g., Goossens & Beyers, 2002). To the extent that relationally aggressive adolescents tend to be rejected by their peers, they are likely to encounter difficulties in establishing close and satisfying friendships, and, hence, are feel lonely.

Psychological Control, Relational Aggression, and Friendships

As noted above, several studies have examined the hypothesized relations either between psychological control and relational aggression or between relational aggression and friendship outcomes. The present study differs from previous research in its aim to test an integrated model that

posits relational aggression as an intervening variable in the relation between psychological control and adolescents' functioning in friendships. A number of studies documented empirical evidence on the direct link between psychological control and indicators of social development. For instance, children of psychologically controlling parents have been found to report higher levels of loneliness (Soenens, Vansteenkiste, Duriez, & Goossens, in press) and lower levels of peer social support (Karavasilis, Doyle, & Markiewicz, 2003). Given that psychological control is hypothesized to predict relational aggression and that relational aggression is known to relate to social maladjustment, we propose relational aggression as a possible pathway (i.e., mediator or intervening variable) through which psychologically controlling parenting carries over into impaired relational functioning.

Gender Differences

An important issue in research on relational aggression is the role of gender differences. Contrary to physical aggression, which is primarily evidenced among boys, girls have been found to be at least as relationally aggressive as boys (Crick et al., 1999; Crick & Grotpeter, 1995). Therefore, we examined gender differences and we controlled for possible gender effects in the proposed model. In addition, it has been argued that girls place more emphasis on relationships than boys and that relational aggression may therefore be more detrimental to girls' social adjustment (e.g., Maccoby, 1990; Ruble & Martin, 1998; Updegraff, Thayer, Whiteman, Denning, & McHale, 2005). Therefore, we also explored whether gender would moderate relations between psychological control, relational aggression, and loneliness and friendship quality. Werner and Crick (1999) found that, despite gender differences in relational aggression and indicators of social-psychological adjustment, relationally aggressive late adolescent men were as likely as relationally aggressive women to be at risk for adjustment difficulties. Similarly, Soenens et al. (in press) found that psychologically controlling parenting was equally predictive of adolescent maladjustment for boys and for girls. On the basis of these studies, it was anticipated that, despite possible mean-level differences in the constructs under study, the structural relations among the variables would hold across adolescents' gender.

Method

Participants and Procedure

Participants were 10th to 12th grade students from two secondary schools in Flanders (Belgium) and their parents. Active informed consent was obtained from the adolescents and passive informed consent was obtained from parents. Parents received a letter about the purpose and method of the study two weeks prior to the data collection and they were asked to fill out a form if they did not want their child to participate in the study. Less than 1% of the parents did not allow their child to participate and none of the students with parental permission refused to participate. In addition, parents received a questionnaire that they were asked to fill out and to deliver to the school's principal by the time data collection would take place. The adolescent questionnaires were administered during a class period. Students had approximately 45 minutes to complete the survey. This sampling procedure resulted in a sample of 284 adolescents (140 boys and 144 girls). Adolescent ranged in age from 15 to 20 years (Mean = 16.93 years; $SD = 0.96$) and 98% were between 15 and 18 years of age. 177 mothers (62%) and 140 fathers (49%) participated. Mothers' mean age was 45 years ($SD = 3.75$). On a 6-point scale the mean educational level was 3.92 ($SD = 1.17$), indicating an average of about 15 years of education. Fathers' mean age was 47 years ($SD = 4.51$). Fathers' mean educational level was 4.01 ($SD = 1.34$), also indicating an average of about 15 years of education.

To examine whether adolescents of participating parents differed from adolescents from non-participating parents on the study variables, we ran a series of independent samples t-tests. No significant differences were found between both groups of adolescents on any of the study variables (all p 's > .05). In addition, no association was found between gender of the child and whether or not mothers or fathers participated in the study (p 's > .05). These analyses show that the final sample of adolescents whose parents participated in the study ($N = 177$ for the maternal data and $N = 140$ for the paternal data) represented a non-selective subgroup of the initial sample.

Measures

All questionnaires were translated into Dutch, the participants' mother tongue, according to the guidelines of the International Test Commission (Hambleton, 1994). Unless otherwise indicated, responses were made on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and scale scores were computed by taking the mean of the scale items.

Psychological Control. The Psychological Control Scale – Youth Self Report (PCS-YSR; Barber, 1996) assessed psychological control (8 items, e.g., “My mother/father is less friendly to me if I don't see things like he/she does”). Adolescents responded to the items for both mothers and fathers and parents responded to the items with regard to their own parenting behavior, and thus, the items were slightly revised to make them amenable to parent self-report (e.g., the prior sample item was revised to “I tend to be less friendly to my son/daughter if he/she does not see things like I do”) (see Soenens, Elliot et al., 2005). The reliability for each measure was as follows: adolescent report of maternal psychological control ($\alpha = .82$), adolescent report of paternal psychological control ($\alpha = .75$), mother report of psychological control ($\alpha = .76$), and father report of psychological control ($\alpha = .79$).

Relational Aggression. We used both a peer nomination instrument and a self-report instrument to assess relational aggression. Six items were used from a peer nomination instrument developed and validated by Werner and Crick (1999) (e.g., “When angry, gives others the ‘silent treatment’”). One item (“When angry with same-sex peer, tries to steal that person's dating partner”) was deleted from the original instrument because it was deemed less relevant to the Belgian context, as it is not characterized by a formal “dating” system (Goossens & Luyckx, in press). The peer nomination instrument was assessed within classes. The number of participants within classes ranged from 10 to 25. For each item, participants were asked to nominate three classmates who best fit each description. The number of nominations each participant received from his or her classmates was summed for each item and standardized within classes. Next, a total relational aggression score was computed by taking the mean of the six standardized item scores (see Werner and Crick, 1999 for this procedure). A

principal components analysis (PCA) on these six items yielded a single factor explaining 74 % of the variance. Item loadings ranged from .67 to .91. The reliability for this measure was $\alpha = .92$.

In addition, this peer nomination instrument was made amenable to self-report by slightly rewording the items. For instance, the original item “When angry, gives others the ‘silent treatment’” was reworded into “When angry, I give others the ‘silent treatment’” (see Loudin, Loukas, and Robinson, 2003 for a similar approach). PCA on this scale revealed a single-factor solution (explaining 42% of the variance), with item loadings ranging from .44 to .78. The reliability for this measure was .70.

Friendship Quality. Adolescents completed four subscales of the Friendship Qualities Scale (FQS; Bukowski et al., 1994): companionship, help/support, closeness, and security. In the present study, reliability estimates ranged from .62 to .80. These levels are comparable to the reliability estimates reported by Bukowski et al. (1994). Correlations among the four scales ranged from .55 to .67 (all p 's < .001). A factor analysis (PCA) on the four subscales showed that a single factor (with loadings ranging from .78 to .87) accounted for the variance shared by these four subscales. Accordingly, as an index of friendship quality in the correlational analyses, an overall score was calculated by averaging the four subscales (see Markiewicz, Doyle, & Brendgen, 2001 for this procedure). In the latent path analyses, these four subscales were used as indicators of the friendship quality construct.

Loneliness. The State-Trait Loneliness Scales (STLS; Gerson & Perlman, 1979) assessed adolescents' state levels of loneliness (9 items, e.g., “During the past days, nobody really knew me”). The reliability for this measure was $\alpha = .83$.

Results

Descriptive Statistics

Table 10.1 shows means, standard deviations, and the intercorrelations among the study variables. Univariate ANOVA's indicated that gender differences were found for friendship quality ($F(1, 160) = 12.62; p < .001$) and peer nomination scores for relational aggression ($F(1, 145) = 4.55; p < .05$). Girls scored higher on both friendship quality ($M = 4.31; SD = 0.42$) and peer nominated relational

aggression ($M = 0.24$; $SD = 5.32$) than did boys ($M = 4.07$; $SD = 0.45$ and $M = -1.44$; $SD = 4.06$, respectively). In contrast, no gender differences were found in self-reported relational aggression, or in any of the other study variables.

Table 10.1 Means, Standard Deviations, and Correlations between Observed Study Variables

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Maternal PC - YSR	2.10	0.74	--						
2. Maternal PC - PR	2.11	0.61	.43***	--					
3. Paternal PC - YSR	2.09	0.64	.43***	.25**	--				
4. Paternal PC - PR	2.24	0.63	.20*	.33***	.39***	--			
5. Relational A. - YR	1.80	0.56	.32***	.15*	.28***	.35***	--		
6. Relational A. - PN	-0.55	4.83	.13	.12	.08	.02	.23**	--	
7. Friendship quality	4.20	0.45	-.08	.04	-.06	-.06	-.21**	-.07	--
8. Loneliness	1.83	0.55	.22**	-.03	.18*	.12	.27***	.14	-.36***

Note: PC = Psychological Control; Relational A. = Relational Aggression; YR = Youth Self-Report; PR = Parent Report; PN = Peer Nomination. * $p < .05$; ** $p < .01$; *** $p < .001$.

Preliminary Analyses

Mothers' and adolescents' reports of maternal psychological control were positively correlated, $r = .43$; $p < .001$, and fathers' and adolescents' reports of paternal psychological control were also positively correlated, $r = .39$; $p < .001$. The magnitude of these relations is similar to those observed in other research using parent and child reports of parental socialization (e.g., Schwartz et al., 1985). As in previous studies (e.g., Simons, Whitbeck, Conger, & Chyi-In, 1991; Soenens, Elliot et al., 2005), the parent and adolescent reports of psychological control were used as indicators of the same underlying construct in the primary analyses. The correlation between the peer nomination assessment and the self-report assessment of relational aggression was fairly low but significant, $r = .23$; $p < .01$, a finding that is consistent with earlier research on inter-informant agreement for relational aggression (Crick et al., 1999). Following the argument made by a number of several authors (e.g., Krevans & Gibbs, 1996; Schwarz et al., 1985) that the aggregation of even weakly correlated measures of the same construct

improves validity, we decided to use both assessments of relational aggression as indicators of the same underlying construct in the primary analyses.

Psychological control was positively related to relational aggression across parent and adolescent reports and across both parents. Correlations between assessments of psychological control and peer nominated relational aggression tended to be positive but failed to reach significance. Both paternal and maternal psychological control scores were positively related to adolescent loneliness, although the correlations only obtained significance for adolescent reports of psychological control. No significant correlations were found between measures of psychological control and friendship quality. Self-reported relational aggression was negatively related to friendship quality and loneliness. Correlations between peer nomination scores for relational aggression and the friendship outcomes were in the same direction but non-significant.

Primary Analyses

Structural equation modeling (SEM) with latent variables was used to examine the hypotheses. Analysis of the covariance matrices was conducted using LISREL 8.54 (Jöreskog & Sörbom, 1996), and solutions were generated on the basis of maximum-likelihood estimation. Four latent constructs were modeled, that is, psychological control, relational aggression, friendship quality, and loneliness. Parent and adolescent reports of psychological control served as indicators of the psychological control construct. The relational aggression construct was also defined by two indicators, that is, the peer nomination score and the self-report score of relational aggression. We used the four subscales of the FQS as indicators of the friendship quality questionnaire. Finally, in order to model loneliness as a latent variable, three item parcels were created, each consisting of three randomly selected loneliness items.

Data screening of the observed indicators indicated partial data non-normality at the univariate and multivariate level. Therefore, in all subsequent models we used the asymptotic covariance matrix between all indicators as input and inspected the Satorra-Bentler Scaled chi-square (SBS- χ^2 , Satorra & Bentler, 1994). To evaluate model goodness of fit, the Comparative Fit Index (CFI) and the Root Mean

Squared Error of Approximation (RMSEA) were selected. According to Hu and Bentler (1999), the combined cut-off values close to .95 for CFI and close to .06 for RMSEA indicate good model fit. All primary analyses were performed separately for maternal and paternal psychological control.

Confirmatory Factor Analyses (CFAs). In the measurement phase, we conducted a CFA for the maternal and paternal models separately. Gender was indexed by a single indicator. No correlations between errors of indicators or cross-loadings were allowed. Estimation of the model with 12 indicators and 5 latent variables (gender, psychological control, relational aggression, friendship quality, and loneliness) indicated an acceptable model fit for both the maternal (SBS- χ^2 (45) = 65.42; CFI = .97; RMSEA = .06) and the paternal data (SBS- χ^2 (45) = 62.38; CFI = .97; RMSEA = .06). In the final models, all indicators had significant ($p < .01$) and moderate to strong loadings on the latent factors, ranging from .31 to .95 (mean lambda = .69) for the maternal data and ranging from .25 to .87 (mean lambda = .67) for the paternal data. In sum, reliable measurement models were obtained.

Correlations between the latent constructs are shown in Table 10.2. Both in the maternal and in the paternal models, psychological control was significantly related to higher levels of relational aggression. Psychological control was also positively related to loneliness but did not relate significantly to friendship quality. Across both models, relational aggression was positively related to loneliness and negatively related to friendship quality. In sum, with the exception of the non-significant relation between psychological control and friendship quality, all correlations were significant and in line with predictions.

Structural models. To examine the proposed model in which parental psychological control relates to the friendship outcomes through relational aggression, structural models involving these constructs were estimated. In line with Holmbeck's (1997) recommendations to test for intervening or mediating effects, two models were tested and compared. In the first model, relational aggression functioned as an intervening variable between psychological control and the two friendship outcomes. In this model, psychological control was only indirectly related to the outcomes through relational aggression. Next, a model was tested in which psychological control was directly related to the outcomes above and beyond

the indirect effect through relational aggression. A comparison of both models allows for the determination of whether an initially significant association between the independent variable (i.e., psychological control) and the dependent variables (e.g., loneliness) disappears after taking into account the effect of the mediating variable (i.e., relational aggression). According to Holmbeck (1997), mediation is shown when the addition of a direct path from the independent variable to the dependent variable does not improve model fit compared to the fully indirect model. Because gender was significantly related to friendship quality (indicating that girls scored higher than boys; see Table 10.2), a structural path from gender to friendship quality was included in each of the models that were tested.

Table 10.2 *Correlations between Latent Variables*

Measure	1	2	3	4	5
1. Gender		.00	-.09	.47***	-.00
2. Psychological control	.09		.57***	-.05	.34**
3. Relational aggression	-.08	.44***		-.25*	.43**
4. Friendship quality	.43***	-.02	-.29**		-.50***
5. Loneliness	.12	.25*	.40**	-.38***	

Note: Correlations within the maternal model are shown below the diagonal; correlations within the paternal model are shown above the diagonal. * $p < .05$; ** $p < .01$; *** $p < .001$.

Estimation of the first (indirect or fully mediated) model yielded an acceptable fit for both the maternal (SBS- χ^2 (49) = 72.35; CFI = .97; RMSEA = .06) and the paternal data (SBS- χ^2 (49) = 65.80; CFI = .97; RMSEA = .05). Results of both the maternal and the paternal models showed that psychological control positively predicted relational aggression which, in turn, positively predicted loneliness and negatively predicted friendship quality.

Because both maternal and paternal psychological control were significantly related to loneliness in the CFA models, we tested whether adding a direct path from psychological control to loneliness would improve the model fit compared to the fully mediated model. Consistent with a mediation hypothesis, adding a direct path from psychological control to loneliness did not result in a significantly

improved model fit, neither for the maternal data ($\Delta\text{SBS-}\chi^2(1) = 2.05; p > .05$) nor for the paternal data ($\Delta\text{SBS-}\chi^2(1) = 1.31; p > .05$). Moreover, the initially significant associations ($r = .25$, and $r = .34$ for mothers and fathers, respectively) were reduced to non-significance ($\beta = .10, p > .05$, and $\beta = .20, p > .05$ for mothers and fathers, respectively) after modeling relational aggression as an intervening variable in the model. Because maternal and paternal psychological control were not directly related to friendship quality, no model comparison could be executed, indicating that relational aggression played an intervening (rather than a mediating) role in the relationship between psychological control and friendship quality.

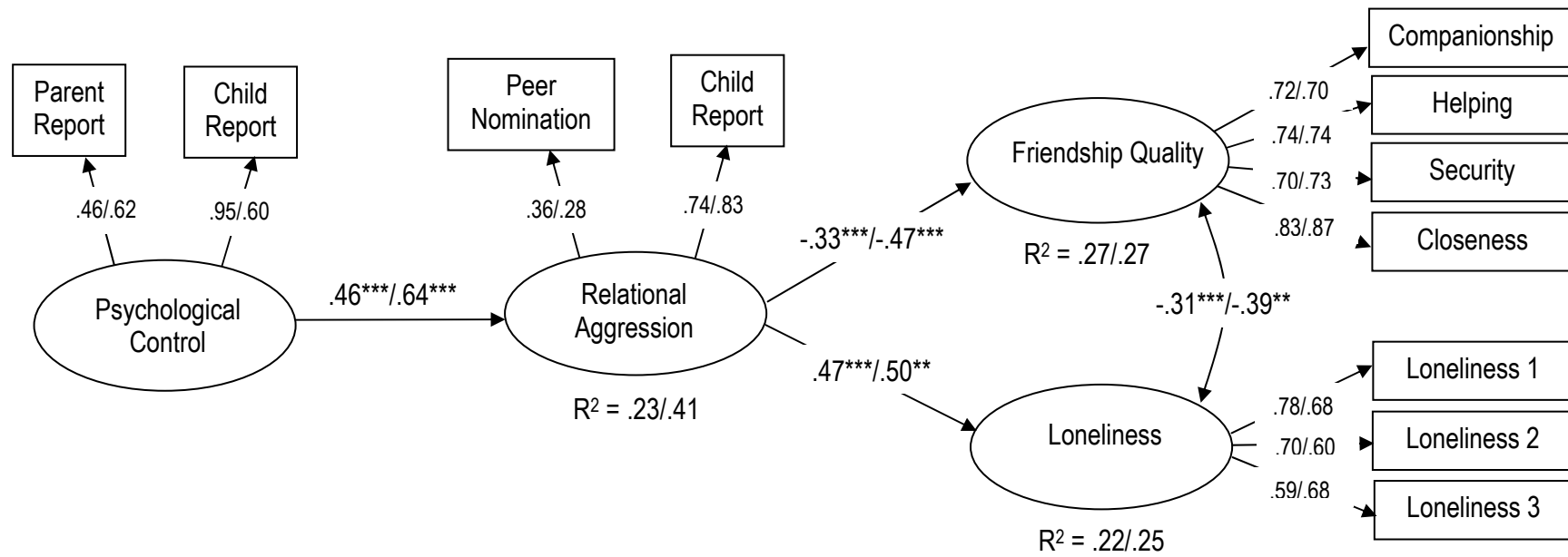
Finally, we inspected the strength of the indirect effect of psychological control on the friendship outcomes through relational aggression, using MacKinnon, Lockwood, Hoffman, West, and Sheets' (2002) z' statistic. Using the maternal data, the indirect effects on both friendship quality ($z' = -2.04; p < .01$) and loneliness ($z' = 2.14; p < .01$) were significant. Similarly, using the paternal data, the indirect effects on both loneliness ($z' = 2.21; p < .01$) and friendship quality were significant ($z' = -1.71; p < .01$).

In sum, for both the maternal and the paternal data, the model in which psychological control is only indirectly related to the friendship outcomes provides the most parsimonious representation of the data. Moreover, the indirect effects of psychological control on the outcomes through relational aggression were significant in three out of four cases, indicating that relational aggression plays a significant intervening role in each of the models tested. The final best fitting structural models are depicted in Figure 10.1.

Moderation by Adolescent Gender

To examine whether adolescents' gender moderated any of the relations in the proposed model, a series of regression analyses with interaction components was conducted (Aiken & West, 1991). Regression analyses were performed rather than SEM multi-group modeling because the number of participants within the categories of the moderating variable (i.e., boys vs. girls) was deemed insufficient relative to the number of parameters to be estimated (Kline, 1998).

Figure 10.1 Structural model of the relationships between parental psychological control, relational aggression, friendship quality, and loneliness. The first coefficient shown is for the mother model, the second coefficient shown is for the father model. For sake of clarity, the effects of gender are not shown. * $p < .05$; ** $p < .01$; *** $p < .001$



Regression analyses were performed on the latent factor scores obtained in the measurement models. Three sets of regression analyses were conducted, one pertaining to the relation between psychological control and relational aggression, one pertaining to the relation between relational aggression and the friendship outcomes, and one pertaining to the relation between psychological control and the friendship outcomes. First, we examined interactions between gender and psychological control in the prediction of relational aggression. Two regression analyses were performed, one for the maternal data and one for the paternal data. Relational aggression was regressed on gender, psychological control (either by mother or by father), and the interaction between both predictors. Predictors were centered and interaction components were computed as the product of the centered predictors. Whereas the main effects of both maternal and paternal psychological control in the prediction of relational aggression were significant (p 's < .001), both interaction terms with gender were not significant (p > .05).

Second, two regression analyses tested for interactions between gender and relational aggression in the prediction of the two friendship outcomes (friendship quality and loneliness). Neither of both interaction components reached significance (p > .05). Third and finally, two regression analyses tested for interactions between gender and psychological control in the prediction of the two friendship outcomes. Again, neither of the interaction terms was significant (p > .05). Together, the results clearly demonstrate that gender did not significantly moderate any of the relations in the proposed model.

Discussion

The aim of this study was to contribute to the extant literature by providing data on the hypothesized antecedents (i.e., parents' psychological control) and consequences (i.e., friendship quality and loneliness) of relational aggression in middle adolescence. First, findings revealed that both mothers' and fathers' use of psychological control relate to greater use of relational aggression by their children. Second, relational aggression related to lower levels of friendship quality and higher levels of loneliness among adolescents. Finally, evidence for an integrated model was found in which

adolescents of psychologically controlling mothers and fathers felt lonelier and had poorer quality friendships because they were more relationally aggressive toward peers. Each of these findings is discussed in more detail below.

Psychological Control and Relational Aggression

From a social-learning perspective, it is argued that parental psychological control plays a significant role in the development of a relationally aggressive interpersonal style (Nelson & Crick, 2002), as children who experience intrusive and manipulative behaviors in the relationship with their parents may learn to engage in similar behaviors in their own friendships. Moreover, from a more dynamic viewpoint, it could be argued that adolescents turn to the use of relational aggressive behaviors with their peers because the experience of psychological control in the parent-child relationship frustrates satisfaction of the basic need for relatedness and leads to a sense of insecurity in friendships. Despite the clear theoretical basis for the relationship between psychological control and relational aggression, empirical evidence has been equivocal and was mainly limited to the age periods of preschool and middle childhood. To date, only one study examined this relation in (early) adolescence. Loukas et al. (2005) found that adolescent ratings of maternal psychological control were positively related to self-reported relational aggression. Through structural equation modeling, the present study extended these findings by showing both maternal and paternal psychological control (as indexed by an adolescent-report and parent-report), positively predicted relational aggression (as indexed by a self-report and a peer nomination assessment). Thus, when the concepts of psychological control and relational aggression are represented by data collected from multiple informants in order to obtain a more valid assessment, results show that parents' use of psychologically controlling strategies related to greater adolescent use of relationally manipulative techniques with their peers.¹

¹ Notably, the raw correlations between psychological control and relational aggression revealed a picture that was highly consistent with the one obtained in the structural equation modeling with latent factors. One set of correlations, however, did not mirror the effects obtained with latent constructs, that is, the relations between ratings of psychological control and peer nominated relational aggression scores were positive, but did not reach significance (although these effects

Because most previous studies exclusively addressed the relation of *mothers'* controlling parenting to children's relational aggression, to date little was known about the role of fathers. Our findings indicated that the relation between psychological control and relational aggression was replicated in the maternal and paternal models, suggesting that both mothers and fathers are involved in the development of relational aggression. This result is consistent with past studies demonstrating that fathers' and mothers' use of psychological control is equally detrimental for adolescents' well-being and development (e.g., Barber & Harmon, 2002; Soenens, Elliot et al., 2005).

In sum, our findings generally lend support to the notion that, through their use of psychological control, parents model their children's use of manipulative behaviors in the children's own peer and friendship relations. Future research might want to examine whether these effects emerge because psychologically controlling parents function as model figures, as suggested by a social-learning perspective, or because they undermine a general human need for relatedness, which results in frustration and, in turn, provokes relationally aggressive behavior toward peers. The latter interpretation fits with self-determination theory (SDT; Deci & Ryan, 2000) and attachment theory (Bowlby, 1980, 1988), which posit that people possess a natural inclination to seek close and intimate relationships with other people in which they experience a sense of belongingness and unconditional acceptance. To the extent that adolescents experience their parents as conditionally approving and manipulative, they are less likely to feel genuinely accepted for who they are and, as a consequence, their need for relatedness will be frustrated. As a consequence, these adolescents may be less secure about their relationships with others and may become more likely to use others in the most efficient way to protect

did emerge for self-reported relational aggression). Together with the modest correlation between peer nomination and self-report assessments of relational aggression, this discrepancy raises some questions about the validity of peer nomination assessments within classrooms. As adolescents age and as they interact with an increasing number of peers, their social networks expand beyond the classroom. As a consequence, an adolescent's classmates witness only a limited part of his or her interaction style and behavioral repertoire. Hence, at a certain age, adolescents themselves may become the best informants of their use of relational aggression, which may explain why ratings of psychological control were more strongly related to self-reported relational aggression than to a peer nomination assessment of relational aggression.

their own personal status, thereby engaging in a manipulative and relationally aggressive interpersonal style. Some evidence for this line of reasoning was recently obtained by Loukas et al. (2005) who found that at least a part of the association between maternal psychological control and relational aggression was mediated by adolescents' feelings of being socially evaluated. Future research may address more directly whether one part of the relation between psychological control and relational aggression could be explained by the fact that psychological control undermines adolescents' attachment security and satisfaction of the need for relatedness in their relationships with their parents. Future research might also examine links between psychological control and adolescents' adoption of a socially aggressive attitude towards their siblings, which may in turn hamper the quality of their sibling relationships (see for instance Updegraff et al., 2005).

Relational Aggression and Friendship Outcomes

A second important finding of this study is that relational aggression, in turn, related to lower levels of friendship quality and to higher levels of loneliness. This finding extends previous research in samples of preschool and middle childhood children. Although this research has consistently shown relations between relational aggression and impairments in children's social functioning, the present study is among the first to establish this relation among adolescents. We believe that these findings are important because adolescence represents an age period that is characterized by an increased use of relational aggression (e.g., Yoon et al., 2004) and by the development of intense and more frequent intimate friendships (e.g., Hill & Holmbeck, 1986). Most likely, the use of relational aggression elicits negative feelings within peer and friendship relations (such as jealousy and resentment). These negative and manipulative dynamics forestall feelings of authentic companionship, resulting in stronger feelings of loneliness and lower levels of experienced friendship quality. An interesting avenue for future research could be to actually assess and test the role of such negative emotions as mechanisms through which relational aggression gives rise to decreased feelings of friendship quality and increased feelings of loneliness.

An Integrated Model

A third major aim of this study was to examine a fully integrated model in which relational aggression would act as an intervening variable in the relation between psychological control and the friendship outcomes. Past research has demonstrated that parenting styles impact children's social competence and peer relationships (see Ladd & Pettit, 2002 and Parke & Buriel, 1998 for reviews). Specifically with respect to psychological control, it has been shown that this parenting dimension relates positively to impairments in social functioning (e.g., Karavasilis et al., 2003; Soenens et al., in press). However, there is a dearth of studies documenting mediating processes between parenting and peer and friendship outcomes (Ladd & Pettit, 2002).

The present study suggests one important mechanism through which parenting and friendship outcomes may be linked. Any direct association between psychological control and loneliness disappeared after taking into account the impact of relational aggression. Moreover, psychological control was indirectly related to friendship quality through relational aggression. It seems, therefore, that to the extent that psychologically controlling parents model and instigate their children's use of relationally aggressive behaviors, they put their children at risk for impairments in their social development. Besides the role of a behavioral mechanism such as relational aggression, future research may additionally look at the role of intrapersonal psychological processes in the link between psychological control and friendship outcomes, such as the ability to empathize with peers' and friends' feelings (e.g., Clark & Ladd, 2000) and the degree of volition or relative autonomy felt within friendship relations (e.g., Ryan & Connell, 1989).

With regard to gender differences, it was found that although girls were rated as more relationally aggressive than boys by their peers, they did not differ on self-reported relational aggression. Although surprising at first sight, this finding is consistent with past studies that have found that there are gender differences in peer and teacher reports of relational aggression but not in self-reports of relational aggression (e.g., Crick & Grotpeter, 1995; Linder et al., 2002; Loukas et al., 2005). There are at least

two possible explanations for this discrepancy. Girls may underreport their use of relational aggression in self-report measures or, in contrast, external raters (e.g., teachers and peers) may overestimate girls' use of relational aggression. The latter effect may be due to the fact that teachers' and peers' ratings are guided by the lay assumption that relational aggression is more typical of girls than boys (rather than by the actual use of relational aggression by girls and boys). Future research might attempt to address this issue by explicitly assessing and controlling for external raters' lay theory on relational aggression.

Perhaps more importantly than mean gender differences, our study shows that the structural relations between psychological control, relational aggression, and friendship outcomes generally held for boys and girls. The results of our study are consistent with increasing evidence that relational aggression – although often viewed as a typically female feature – has a detrimental impact on the well-being (e.g., Werner & Crick, 1999) and interpersonal functioning (e.g., Crick, 1996) of males and females alike. Our results are also consistent with the study of Loukas et al. (2005) who found that associations between maternal psychological control and relational aggression were similar for boys and girls. At a more general level, the lack of moderation by gender obtained in this study meshes with evidence that psychologically controlling parenting is equally predictive of negative adjustment outcomes for males and females (e.g., Soenens et al., in press). Together, these findings provide additional evidence for the hypothesis that intrusive and manipulative dynamics – both in the context of parent-child relationships and in the context of peer relationships and friendships – undermine a fundamental human need for relatedness. Given that the need for relatedness is thought to be equally crucial for the development of men and women (e.g., Baumeister & Leary, 1995; Deci & Ryan, 2000), it is not surprising to find in this study that parental psychological control and relational aggression affect the social functioning of male and female adolescents to a similar extent.

Limitations and Directions for Future Research

Although a major strength of the present study is its reliance on multiple informants to assess the central constructs, an important limitation is the cross-sectional design of the study. Although it is

assumed in this study that parental psychological control functions as an antecedent to adolescents' engagement in relational aggression, the possibility also exists that relationally aggressive children elicit more intrusive and manipulative behaviors from their parents. Recent longitudinal research, for instance, suggests that psychological control does not only increase adolescents' depressive feelings, but that depressive feelings also elicit higher psychological control levels over time (e.g., Barber, Stolz, Olsen, & Maughan, 2005; Soenens, Luyckx, Vansteenkiste, & Goossens, 2005). Hence, psychological control and relational aggression may be reciprocally related such that both reinforce and strengthen each other over time. To address these intriguing possibilities, future cross-lagged panel research is needed.

Longitudinal research may also shed further insight on the nature of the relations between friendship quality, satisfaction of the need for relatedness, and relational aggression. Continuing the line of reasoning developed earlier, our integrated model points to the intriguing possibility that thwarted satisfaction of one's need for relatedness is both an antecedent and a consequence of relational aggression. As children of psychologically controlling parents feel less secure in the relation with their parents and anticipate to be less genuinely accepted in peer relations, they engage in relational aggression which, in turn, enhances the likelihood of experiencing poor quality friendships that do not satisfy their need for relatedness. It seems likely that such negative friendship outcomes may, in turn, increase the likelihood of relational aggression. As an adolescent feels that the quality of the friendship is decreasing and feels increasingly lonely within that relation, he or she may become more likely to use relational aggression as a means to protect his or her own position in the friendship and self-esteem.²

² To test the possibility that friendship outcomes precede rather than follow from relational aggression, an alternative model was tested which considers friendship quality and loneliness as direct outcomes of psychological control. Both friendship outcomes, in turn, predict relational aggression. Although this alternative model fit the data reasonably well, the fit was worse than the fit of the model proposed in Figure 10.1 on all indices (SBS- χ^2 (48) = 79.12; CFI = .95; RMSEA = .07 for the maternal data and SBS- χ^2 (48) = 70.87; CFI = .95; RMSEA = .06 for the paternal data). This was primarily due to the fact that psychological control is related to relational aggression beyond the friendship outcomes, suggesting that relational aggression is the most proximal outcome of psychological control, an outcome which in turn relates to poor friendship outcomes. Despite this, longitudinal data are needed to draw more sound conclusions about the direction of effects in the relations between relational aggression and friendship quality.

Over time, adolescents of psychologically controlling parents may become trapped in a vicious and self-sustaining cycle of increasing levels of relational aggression and decreasing levels of friendship quality. In sum, a major challenge for future research is to further unravel the (possibly) transactional relations between parenting, relational aggression, and children and adolescents' social development.

Conclusion

The findings of this study show that psychological control relates positively to adolescents' use of relational aggression that, in turn, creates a vulnerability to lower levels of satisfaction and security in friendships and higher levels of loneliness. As such, teaching parents to avoid the use of psychologically controlling practices (such as shaming, guilt-induction, and conditional approval), may provide an important path through which relational aggression can be avoided and through which adolescents' friendship quality and social competence can be bolstered.

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