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Understanding the Contributions of Discrepant Parent-Adolescent Views of Parenting Practices and Peer Deviance to Adolescent Problem Behavior: A Cross-Lagged Polynomial Regression Approach

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UNDERSTANDING THE CONTRIBUTIONS OF DISCREPANT PARENT-ADOLESCENT VIEWS OF PARENTING PRACTICES AND PEER DEVIANCE TO ADOLESCENT PROBLEM BEHAVIOR: A CROSS-LAGGED POLYNOMIAL REGRESSION APPROACH

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

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Abstract

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The present study used autoregressive cross-lagged models to examine the processes through which peer deviance and discrepant parent-adolescent views of monitoring-related communication, involvement, and positive parenting influence one another and contribute to physical and relational aggression, substance use, and delinquency. Participants included 535 adolescents (64% male) who were identified as prone to aggression and socially influential by their sixth-grade teachers during the 2001-2002 and 2002-2003 school years; participants self-identified as African American (69%), Hispanic (14%), White (9%), Multiracial (5%), or another race (3%). Contrary to expectations, parent-adolescent reporting discrepancies were not related to peer deviance, physical aggression, substance use, and delinquency. However, adolescents who reported lower levels of involvement relative to their parent demonstrated higher levels of relational aggression, and peer deviance significantly predicted problem behavior. These findings

partially support the hypothesis that parent-adolescent reporting discrepancies reflect maladaptive family processes and highlight peer deviance as a target for intervention.

Understanding the contributions of discrepant parent-adolescent views of parenting practices and peer deviance to adolescent problem behavior: A cross-lagged polynomial regression approach

Adolescence is a key developmental period for the onset and escalation of substance use, delinquency, and aggression. Alcohol use, cigarette smoking, and marijuana use typically increase across adolescence, peak during early adulthood, and decline thereafter (Chen & Jacobson, 2012). Likewise, the prevalence of delinquent behavior peaks during late adolescence (at approximately age 17) and decreases across adulthood (Moffitt, 1993). Aggressive behavior appears to follow a similar curvilinear developmental trajectory (Steinberg & Morris, 2001). Physical aggression includes behaviors that cause physical harm to others (e.g., hitting, threats of violence), whereas relational aggression encompasses actions intended to damage social relationships (e.g., gossip, social exclusion). Both physical and relational aggression increase across early adolescence, peaking at ages 13 and 14, respectively (Karriker-Jaffe et al., 2008).

Adolescent externalizing and problem behaviors are associated with a range of adverse consequences. For example, delinquency is associated with poor school performance and greater likelihood of unemployment (Carter, 2018; Norris & Kaniasty, 1994), whereas substance use is related to lower educational attainment (Sloan et al., 2011) and heightened risk for negative health outcomes (Rehm et al., 2009, 2017). Further, these behaviors endanger others' well-being: aggressive and violent behavior may result in victims' physical and psychological harm (Liu et al., 2013); many forms of delinquent behavior, such as property damage, can inflict financial loss and cause psychological distress among victims (Norris & Kaniasty, 1994); and substance use places others at increased risk for injury and assault (Rehm, 2011). Characterizing prospective predictors of adolescent aggressive behavior, delinquency, and substance use is therefore important to identify relevant targets for preventive intervention and mitigate negative outcomes.

Prior research highlights family and peer relationships as key contexts for the development and maintenance of prosocial and problem behavior. Successfully balancing independence and connectedness within the parent-child relationship fosters child adaptation across developmental periods. For example, parental warmth and support are related to the development of self-regulation in middle childhood and to the formation of close, supportive relationships with peers and romantic partners across adolescence and young adulthood (Sroufe et al., 2005). Conversely, harsh parenting, inconsistent discipline, and low levels of supervision, parental warmth, and emotional support are consistently linked to adolescent behavioral and emotional problems (Sroufe et al., 2000). Dishion and McMahon (1998) go so far as to declare effective parental monitoring a "necessary but not sufficient condition" for child adaptation (Dishion & McMahon, 1998).

In addition to their direct impact on adolescent outcomes, family factors may exert an indirect effect via peer relationships (Sroufe et al., 2000). For instance, parents may influence their child's peer relationships by socializing appropriate interaction patterns and providing guidance (Minnesota Symposium on Child Psychology et al., 1999). Parental warmth promotes adolescents' social competence (Sroufe et al., 2005), whereas coercive parent-child interactions may lead to the use of aggression in peer interactions and subsequent peer rejection (Dishion & Snyder, 2016). Further, there is growing evidence that the relation between familial and peer contexts is bidirectional, with negative peer interactions and peer delinquency leading to reduced parental knowledge and more negative exchanges between parents and children (Reich & Vandell, 2014). Peers also impact the development of antisocial behavior by participating in peer pressure, establishing group norms, and structuring opportunities to engage in substance use or delinquent behavior (Lerner, 2004).

Thus, the importance of the parent-child relationship and peer relationships in the development of adolescent aggression, substance use, and delinquency is well-established (Soenens et al., 2006; Stattin & Kerr, 2000). In an effort to more comprehensively assess parenting behaviors and parent-child relationship quality, researchers commonly gather reports from both the parent and the adolescent. Yet, parent and adolescent reports of conflict, parenting behaviors, parental monitoring, and relationship quality demonstrate only low to moderate correspondence (De Los Reyes & Ohannessian, 2016). Traditionally, discrepant informant reports have been interpreted as lack of support for a particular phenomenon or as evidence for measurement error, and analytic strategies have emphasized aggregation or shared variance between informants (De Los Reyes et al., 2019).

This view of discrepant informant reports as evidence for measurement error was later adjusted to account for systematic discrepancies between mother and child report. Children consistently report lower levels of maternal acceptance and higher levels of maternal psychological control when compared to their mothers (Korelitz & Garber, 2016), and parents report significantly greater communication and knowledge of their child's whereabouts than do adolescents (De Los Reyes et al., 2016; Ksinan & Vazsonyi, 2016). These generational discrepancies are typically described in terms of the developmental stake hypothesis, which proposes that parent-adolescent conflict and reporting discrepancies arise from the "developmental stakes" each generation has in the other. During the transition to early adolescence, youth become focused on achieving autonomy and developing a sense of identity. As a result, adolescents aim to minimize parental control and differentiate their values and morals from those of their parents. Conversely, concerns about transferring values and features of the social order to the next generation are particularly salient for parents, resulting in efforts to provide guidance and maintain emotional closeness with their child. These discrepant

"developmental stakes" result in systematically lower child-reported relationship quality when compared to parent-reported relationship quality (Bengtson & Kuypers, 1971; Korelitz & Garber, 2016).

However, generational differences cannot fully account for discrepant views of parents and children, as parent-adolescent dyads vary greatly in the extent to which they provide convergent versus divergent reports (De Los Reyes & Ohannessian, 2016), and discrepant reports can reveal meaningful information about the informants or the behavior under study (De Los Reyes et al., 2019). Conceptual frameworks for studying the basis and importance of informant discrepancies fall into one of three classes. The first class of models focuses on contextual variation as the source of discrepant reports. For instance, a child's level of externalizing behavior may vary across contexts, producing discrepant reports between parents and teachers. The second class of models examines the influence of individual characteristics on discrepancies, and the third class of models emphasizes discrepant views as predictors of adolescent psychosocial functioning, suggesting that informant discrepancies provide unique insights into the parent-adolescent relationship and predict adolescent outcomes above and beyond the constructs under study (Laird & De Los Reyes, 2013).

In the current study, I focus on the interplay between discrepant views of the parent-child relationship and peer deviance, as well as contributions of parent-adolescent reporting discrepancies to adolescent delinquent behavior, substance use, physical aggression, and relational aggression. The associations of parent-adolescent reporting discrepancies with adolescent substance use and externalizing behavior have been thoroughly examined, with prior studies demonstrating that discrepant views between parents and their adolescent children are related to delinquent behavior (De Los Reyes et al., 2010; Hou et al., 2018; Ksinan & Vazsonyi, 2016), substance use (Kliewer et al., 2018; Ohannessian, 2012), and symptoms of conduct

disorder (Maurizi et al., 2012). However, the current study builds upon prior work by (1) evaluating parent-adolescent reporting discrepancies within a sample of adolescents identified as having aggressive tendencies and being influential among their peers, (2) assessing discrepant views of both positive parenting and parental monitoring, and (3) testing how the interplay between peer relationships and parent-adolescent reporting discrepancies contributes to adolescent delinquent behavior, substance use, physical aggression, and relational aggression.

Discrepant Parent-Adolescent Views: Meaningful Variation Versus Measurement Error

One long-standing debate among researchers is whether reporting discrepancies reflect measurement error or reveal meaningful information. The Operations Triad Model (OTM) is a decision-making framework to guide interpretation and use of multi-informant assessments: the framework was developed based on multi-informant assessments of child externalizing behaviors but proves useful for distinguishing between meaningful or random variation in informant reports. The OTM encompasses three decision-making processes: (1) hypothesizing whether multiple informants' reports will converge on a single research conclusion or yield different research conclusions, (2) creating operational definitions of converging versus diverging research findings, and (3) evaluating whether divergent findings reflect meaningful variation in behavior or measurement error (De Los Reyes et al., 2013).

Within this framework, research findings for multiple informant reports may provide support for one of three operations. Under Converging Operations, different ways of observing or quantifying the behavior point to the same research conclusion. Under Diverging Operations, multiple informants' reports point to different research conclusions, and discrepant reports reflect meaningful variation in the behavior being assessed. Finally, under Compensating Operations, multiple informants' reports yield different research conclusions but do not indicate meaningful variation in the behavior being assessed. For instance, reporting discrepancies may be

attributable to methodological differences or systematic unreliability in one informant's report (De Los Reyes et al., 2013).

To distinguish Diverging Operations from Compensating Operations, researchers must establish that each informant's report meets threshold indicators of reliability, examine whether informant reports are related to measures of other constructs that indicate measurement validity, rule out methodological factors, and establish that discrepancies show systematic variation relevant to the behavior being assessed (De Los Reyes et al., 2013). The majority of research on discrepant parent and adolescent perceptions of parental monitoring and relationship quality is consistent with Diverging Operations: parent-adolescent reporting discrepancies are distinguishable from other domains of family functioning (De Los Reyes et al., 2016) and are consistently associated with adolescent substance use (Kliewer et al., 2018; Ohannessian, 2012), delinquent behaviors (De Los Reyes et al., 2010; Feinberg et al., 2000; Hou et al., 2018; Ksinan & Vazsonyi, 2016; Rote & Smetana, 2016), internalizing symptoms (Gaylord et al., 2003; Hou et al., 2018; Ohannessian & De Los Reyes, 2014), and externalizing behavior (Dimler et al., 2017).

Are Parent-Adolescent Reporting Discrepancies Normative or Maladaptive?

Yet, the implications of parent-adolescent reporting discrepancies remain unclear. Many researchers suggest that parent-adolescent reporting discrepancies are adaptive, as adolescence is characterized by an increasing need for autonomy and independence, renegotiation of roles within the parent-child relationship, and an expanding ability to question others' perspectives (Korelitz & Garber, 2016). However, parent-adolescent reporting discrepancies can also be maladaptive, stemming from low parent-adolescent relationship quality, high conflict, or poor communication (De Los Reyes & Ohannessian, 2016; Hou et al., 2018; Reynolds et al., 2011). De Los Reyes and Ohannessian (2016) and De Los Reyes et al. (2019) discuss four patterns of parent and adolescent reports and make predictions regarding their link to adolescent

psychosocial outcomes: (1) reporters agree on relatively high levels of protective factors, which signifies agreed upon perceptions of and expectations for the parent-adolescent relationship and is expected to predict positive developmental outcomes; (2) the reporters agree on relatively high levels of risk factors, which signals severity or stability of risk and is expected to predict negative developmental outcomes; (3) divergence of reports reflects adaptive family processes and is expected to predict positive developmental outcomes, and (4) divergence of reports reflects maladaptive family processes and is expected to predict negative developmental outcomes (De Los Reyes et al., 2019).

Convergent reports on high levels of a risk factor may be particularly maladaptive relative to divergent parent-adolescent reports, indicating that the risk factor has been present for a long time or consistently manifests in parent-adolescent interactions. Conversely, convergent reports on high levels of a protective factor are expected to predict lower levels of maladjustment when compared to divergent reports (De Los Reyes & Ohannessian, 2016). However, the question remains: under what circumstances are discrepant views of the parent-adolescent relationship adaptive versus maladaptive?

Support for the Adaptive Hypothesis

The adaptive hypothesis proposes that discrepant views of the parent-adolescent relationship are normative and reflect the process of adolescent individuation. The transition to adolescence is characterized by hormonal changes, a maturing sense of identity, advances in abstract reasoning, and changing societal expectations, which lead the adolescent to recognize their parents' fallibility and increasingly seek independence (Furman & Shaffer, 2003; Lerner, 2004). Because parents and adolescents often differ in their expectations for adolescent behavior, parent-child conflict is relatively normative during early adolescence. This period of heightened conflict provides the opportunity to renegotiate roles and eventually realign parent and

adolescent expectations in a mutually satisfactory way (Branje, 2018; Laursen & Collins, 2009; Lerner, 2004), such that parents can monitor and remain close to their child while also promoting his or her expanding autonomy (Sroufe et al., 2005).

Thus, the adaptive hypothesis proposes that a *lack* of parent-adolescent reporting discrepancies is problematic, indicating that the adolescent has not developed a mature sense of self and successfully sought autonomy within the parent-child relationship. For example, under the adaptive hypothesis, if a 14-year-old child (Diane) and her mother provide nearly identical reports of parental knowledge, their converging views may indicate that Diane is overly connected to her mother. She may be participating in few activities with peers or disclosing every detail of her whereabouts and daily activities, which prevents Diane from developing her own values, beliefs, and sense of identity. Though compelling, this hypothesis has received relatively little empirical support. Only one study conducted by Reidler and Swenson (2012) provides unqualified support for the hypothesis that discrepant parent-adolescent perceptions reflect healthy adaptation. They found that, within a sample of predominantly European American fifth, eighth, and eleventh grade students, greater parent-adolescent discrepancies on adolescent disclosure and negative relationship quality were related to lower mother- and adolescent-reported externalizing problems (Reidler & Swenson, 2012).

Support for the Maladaptive Hypothesis

The findings of Reidler and Swenson (2012) support the assertion that, in some cases, divergent parent-child reports may reflect adaptive family processes and contribute to positive developmental outcomes. However, a more extensive body of literature substantiates De Los Reyes et al.'s (2019) view that discrepant views of the parent-adolescent relationship reflect maladaptive family processes and play a role in the development of adolescent externalizing, internalizing, and problem behavior. I will first review the empirical evidence to support the

maladaptive hypothesis, followed by several theoretical perspectives as to (1) how discrepant views of the parent-adolescent relationship develop, and (2) why differing informant reports are related to adolescent aggression and problem behavior.

Empirical support for the maladaptive hypothesis. Researchers have used both person-centered and variable-centered approaches to assess the associations of discrepant parent-adolescent reports with adolescent substance use, delinquent behavior, and aggression. I begin by reviewing studies that use person-oriented methods. Though relatively underutilized within the field of parent-adolescent reporting discrepancies, person-centered methods identify subgroups of individuals that display particular combinations of behavior and may provide unique insight into the maladaptive hypothesis (Lippold et al., 2014). For example, Hou et al. (2018) calculated standardized difference scores for parent and adolescent reports across three constructs (parental warmth, parental monitoring, and inductive reasoning) and conducted latent profile analysis. They identified a three-profile solution for mother-adolescent dyads, such that adolescents and their mothers reported very similar scores, adolescents reported consistently lower scores than their mother, or adolescents reported consistently higher scores than their mother across constructs. Adolescents who reported lower scores than their mother exhibited higher levels of delinquent behavior, depressive symptoms, and anxiety, as well as lower levels of life meaning, resilience, school engagement, and sleep quality, when compared to the remaining two profiles. This pattern of results emphasizes that the direction of parent-adolescent reporting discrepancies (i.e., adolescents reporting lower levels of parental warmth and monitoring than their mother) is an important predictor of adolescent outcomes (Hou et al., 2018).

Rote and Smetana (2016) adopted a slightly different approach to examine patterns of discrepancies for beliefs about parents' right to know, maternal knowledge, and positive features of the mother-adolescent relationship. In this study, separate latent profile analyses were

conducted for each construct, using standardized difference scores as indicators. As with Hou et al. (2018), a three-profile solution was optimal, such that adolescents and mothers provided relatively similar reports, adolescents reported higher scores than mothers, or mothers reported higher scores than adolescents. The majority of dyads maintained consistent profile membership across two or three constructs. Further, adolescent problem behavior was associated with membership in profiles where adolescents reported lower maternal right to know and maternal knowledge relative to their mothers but was unrelated to profile membership for positive interactions (Rote & Smetana, 2016).

Finally, Maurizi et al. (2012) adopted a unique analytic approach to assess parent-adolescent perceptions of parental affection, control, and punitiveness based on disagreement between reporters at the item level. They calculated item-level difference scores by subtracting parent ratings from child ratings, then constructed an index of parent and adolescent perceptions by counting the number of times parents and adolescents provided discrepant reports and weighting by the value of the difference. Four patterns were identified based on a median split of the weighted scores: (1) a parent higher pattern, in which the parent provides consistently higher ratings than the adolescent, (2) an adolescent higher pattern, in which the adolescent provides consistently higher ratings than the parent, (3) a mutually discordant pattern, in which the dyad is characterized by a high level of disagreement and one reporter does not consistently provide higher ratings than the other, and (4) a concordant pattern, in which parents and adolescents provide similar ratings across items. They found that adolescents in dyads categorized as mutually discordant reported greater anxiety and conduct disorder symptoms than adolescents in dyads categorized as concordant. Discrepant perspectives on parental affection were more closely related to symptoms of anxiety, depression, and conduct disorder when compared to discrepant views of parental control and punitiveness (Maurizi et al., 2012).

The studies reviewed above suggest that adolescents typically exhibit a similar pattern of reporting relative to their mothers across constructs. When adolescents perceive lower levels of parental warmth and knowledge relative to their parent, they are at risk for a range of adverse outcomes, including delinquent and problem behavior (Hou et al., 2018; Rote & Smetana, 2016). Moreover, inconsistencies in how parent and adolescent reports relate to one another may be particularly problematic (Maurizi et al., 2012). I now turn to studies that have used variable-centered approaches to examine the relations between parent-adolescent reporting discrepancies and adolescent outcomes, which provide insight into how both the magnitude and direction of parent-adolescent reporting discrepancies relate to adolescent outcomes.

Prior studies indicate that discrepant views of parental knowledge are closely related to substance use, delinquent behavior, and aggression. For example, Kliewer et al. (2018) explored the associations of parent-adolescent reporting discrepancies on adolescent secrecy with deviant peer affiliations and substance use. Using polynomial regression, they demonstrated that, when adolescents reported high levels of secrecy and parents reported low levels, adolescents were likely to engage in higher levels of substance use. However, deviant peer affiliation did not mediate the association of parent-adolescent reporting discrepancies with substance use (Kliewer et al., 2018). Additional studies have similarly concluded that adolescents who report lower levels of parental monitoring relative to their mother exhibit more delinquent behaviors (De Los Reyes et al., 2010), and discrepant parent-adolescent views on parental monitoring at age 12 are prospectively associated with delinquent behaviors at age 15 (Ksinan & Vazsonyi, 2016).

A similar pattern emerges when examining discrepant reports of parent-adolescent interactions and relationship quality. Dimler et al. (2017) examined the associations of reporting discrepancies for parental negative reactions toward adolescent anger with adolescent-reported externalizing and aggressive behaviors. As adolescents perceived more negative reactions

relative to their parents, they also reported more externalizing and aggressive behaviors (Dimler et al., 2017). When evaluating effects of reporting discrepancies on substance use, Ohannessian (2012) similarly demonstrated that mothers' and adolescents' discrepant views of family satisfaction are significantly related to adolescent binge drinking, and discrepant reports for open communication predict adolescent alcohol use, binge drinking, and aggressive behavior (Ohannessian, 2012).

In a third study, Feinberg et al. (2000) examined the relations of discrepant views of parental warmth and negativity with adolescent antisocial behavior. They observed an unexpected pattern of results: though discrepant perspectives about maternal warmth and negativity were both significant predictors of antisocial behavior, greater disagreement about maternal warmth was associated with higher levels of antisocial behavior, and disagreement about maternal negativity was linked with lower levels of antisocial behavior. Thus, their results provide mixed support for the adaptive and maladaptive hypotheses, suggesting that the nature of the association between parent-adolescent reporting discrepancies and antisocial behavior depends on the feature of parenting under study (Feinberg et al., 2000).

Though there is evidence to support the notion that parent-adolescent reporting discrepancies reflect adaptive family processes (Feinberg et al., 2000; Reidler & Swenson, 2012), considerable empirical evidence also demonstrates that discrepant views of parental monitoring and positive features of the parent-child relationship are related to higher levels of substance use and delinquent, aggressive, or antisocial behavior (De Los Reyes et al., 2010; Dimler et al., 2017; Hou et al., 2018; Kliewer et al., 2018; Ksinan & Vazsonyi, 2016; Maurizi et al., 2012; Ohannessian, 2012; Rote & Smetana, 2016). Rote and Smetana (2016) reconcile these discrepant findings by suggesting that a certain amount of disagreement between parents and adolescents is normative, whereas greater discrepancies between parent and adolescent reports

are associated with internalizing and externalizing problems (Rote & Smetana, 2016). In the next sections, I incorporate several theoretical frameworks to further understand the processes through which substantial parent-adolescent reporting discrepancies arise and may contribute to negative developmental outcomes.

Discrepancies in Victimization Implicate Developmental Effects (DiVIDE) framework. Goodman et al. (2010) developed a conceptual framework, Discrepancies in Victimization Implicate Developmental Effects (DiVIDE), to describe discrepant reports of youth victimization between parents and adolescents. The DiVIDE framework suggests that factors related to high parent-adolescent relationship quality, including warmth and acceptance, are associated with higher adolescent disclosure, which in turn, promotes fewer discrepancies between parent and adolescent reports of victimization. Further, it is hypothesized that parent-adolescent reporting discrepancies contribute to youth maladjustment because, when parents are unaware of youths' victimization experiences, they cannot provide emotional support and socialize strategies to cope with violence (Goodman et al., 2010).

Though the DiVIDE framework was developed for use with parent and adolescent reports of youth victimization, several studies provide preliminary support to suggest that parent-adolescent relationship quality contributes to discrepant views of parental monitoring, as well. In one study, parents and adolescents in the sixth, seventh, or eighth grade reported on parental warmth, adolescent disclosure, and parental knowledge. Parent-reported warmth was associated with parent- and adolescent-reported disclosure, whereas adolescent-reported warmth was related to adolescent-reported disclosure only. Higher levels of adolescent-reported disclosure, in turn, predicted fewer parent-adolescent reporting discrepancies on parental knowledge (Dotterer & Day, 2019). Further, Ksinan and Vazsonyi (2016) demonstrated that close relationships between mothers and their adolescent children predicted fewer discrepancies in reports of parental

monitoring, which in turn, was associated with lower levels of adolescent delinquent behavior (Ksinan & Vazsonyi, 2016). Therefore, consistent with the DiVIDE framework and with the maladaptive hypothesis more generally, parent-adolescent reporting discrepancies may arise from low parent-child relationship quality and poor communication.

The DiVIDE framework is the only theory to explicitly address the role of parent-adolescent reporting discrepancies in adolescent maladjustment and provides important context for the study of how discrepant views on parental monitoring and positive parenting relate to adolescent substance use, delinquent behavior, and aggression. However, this framework was developed for youth who have experienced victimization (Goodman et al., 2010), whereas participants in the proposed study represent a subsample of middle school students who were identified as aggressive and socially influential by their teachers (Miller-Johnson et al., 2004). Therefore, in the next sections, I review coercion theory to describe the nature of family processes that may give rise to early adolescent aggressive behavior. In addition, I use premature adolescent autonomy to further understand how parent-adolescent reporting discrepancies and affiliation with deviant peers mutually influence one another and may contribute to maladjustment within a sample of aggressive but socially influential adolescents.

Coercion theory. Coercion refers to "a set of interpersonal tactics by which individuals or groups use aversive behavior to obtain rewards and access to desired activities, attain status, and avoid or escape aversive control or demands in social relationship contexts" (Dishion & Snyder, 2016). Coercion is an inherently social process, as aversive behaviors are evoked and maintained by the actions of others. Dishion and Snyder (2016) propose that increased coercion may result from one of three behavioral sequences: (1) an aversive behavior by Person 1 leads to a positive outcome, positively reinforcing the behavior; (2) an aversive behavior by Person 1 leads to a negative consequence for Person 2; or (3) an aversive behavior by Person 1 leads to an

aversive behavior by Person 2, which then reduces Person 1's aversive behavior. The third sequence, referred to as negative reinforcement or escape conditioning, is purportedly most relevant to the development of coercive family processes (Dishion & Snyder, 2016).

Commonly, the process of negative reinforcement begins with a reprimand or instruction by the parent, which leads the child to respond with escalating levels of aversive behavior, such as physical aggression or verbal threats, until the parent capitulates (Dishion & Snyder, 2016; Granic & Patterson, 2006). For example, while shopping at a department store, a parent may ask their child to return a toy to the shelf. The child responds by screaming and kicking the parent. Embarrassed by this public display of aggression, the parent agrees to buy the toy for the child. The child is likely to repeat the aggressive or antisocial behavior as long as it successfully terminates their parent's attempts at behavioral control (Reid et al., 2002), and continued negative reinforcement of the child's aversive behavior leads to chains of coercive parent-child interactions and escalation of child problem behavior (Dishion & Snyder, 2016).

Through continued negative reinforcement of aggressive behavior, the child builds a repertoire of defiant and aggressive social behaviors that are used to relate to peers (Snyder, 2002). The child may use aggressive behavior to obtain compliance from peers, demonstrate dominance, or gain social status. Yet, because peer relationships are elective, prosocial peers are likely to terminate a friendship characterized by frequent negative interactions and aversive behavior (Dishion & Snyder, 2016). Rejection by the normative peer group, in turn, leads to affiliation with deviant peers and escalation of antisocial behavior (Snyder, 2002).

The relation between coercive family processes and coercive exchanges with peers provides one mechanism by which peers contribute to the development of antisocial behavior (Snyder, 2002). Yet, given that adolescents in the proposed study were identified as both aggressive and influential among their peers, peer rejection appears to be an unlikely mechanism

through which parent-adolescent reporting discrepancies yield problem behavior. Coercion theory therefore provides insight into the nature of parent-child interactions that may give rise to aggressive behavior across early and middle childhood, but premature adolescent autonomy is perhaps more applicable to the mutual influence of parenting and deviant peer affiliations within a sample of socially influential adolescents who engage in higher levels of teacher-reported aggression.

Understanding the typology of popular, aggressive adolescents. Though aggression and social influence among peers are viewed as incompatible within the context of coercion theory, there is evidence to support heterogeneity in aggressive behavior among popular adolescents. Rodkin et al. (2000) were among the first to identify a subgroup of "popular, aggressive adolescents." Using cluster analysis, these researchers identified a group of "model boys," who exhibited above-average academic ability, popularity, affiliativeness, and physical competence and below-average internalizing and externalizing behavior. However, they also observed a group of "tough boys," who were above average on popularity, aggression, and physical competence. These tough boys were frequently nominated by their peers as both "cool" and antisocial (Rodkin et al., 2000). Subsequent studies have found that physically aggressive adolescents actually receive more friendship nominations than non-aggressive adolescents (Rulison et al., 2013), and physical and relational aggression are associated with lower likeability but greater perceived popularity among peers (Cillessen & Mayeux, 2004).

Importantly, the function of aggressive behavior appears to play a role in whether aggressive children receive support or are rejected by the normative peer group. Proactive aggression involves the strategic use of aggression to obtain a self-serving outcome (e.g., a child starts a false rumor in order to gain social status), whereas reactive aggression is typically motivated by anger or frustration in response to perceived provocation (e.g., a child is bumped

while in line for the water fountain and, in response, threatens to punch a nearby classmate) (Sijtsema et al., 2010). High levels of proactive aggression are associated with high popularity among peers, whereas high levels of reactive aggression are associated with low popularity and likeability (Prinstein & Cillessen, 2003). Further, adolescents who exhibit proactive aggression are subject to both selection similarity and influence in their peer relationships: they tend to select friends who demonstrate comparable levels of proactive aggression, and, as a result of affiliating with aggressive friends, they become more aggressive over time (Sijtsema et al., 2010).

Premature adolescent autonomy. When considering the development of substance use, delinquent behavior, and physical and relational aggression within a subgroup of popular, aggressive adolescents, premature adolescent autonomy presents a critical mechanism through which discrepant views of the parent-adolescent relationship may interact with peer deviancy to produce problem behavior. Premature adolescent autonomy, alternatively termed the "flight to peer" phenomenon, is a bidirectional process through which parents disengage, reflected by low levels of parental monitoring and positive parenting, and adolescents increasingly engage with peers (Dishion et al., 2004). Premature adolescent autonomy is thought to arise from frequent parent-child conflict. In early adolescence, conflict between parents and their children is relatively normative and provides the opportunity to revise expectations for parent and adolescent behavior (Laursen & Collins, 2009). However, if conflict remains unresolved and does not facilitate a balance between autonomy and support in the parent-adolescent relationship, this can initiate a bidirectional distancing process in which parents decrease their involvement and adolescents turn to peers for support (Dishion et al., 2004). Premature adolescent autonomy may be particularly prevalent among aggressive adolescents, as coercive parent-child relationship dynamics undermine parental warmth, support, and involvement (Dishion &

McMahon, 1998; Dishion & Snyder, 2016). Coercive parent-child dyads also develop rigid patterns of interaction (Dishion & McMahon, 1998; Dishion & Snyder, 2016), which are not amenable to the flexible interaction patterns needed to realign parent-child expectations and maintain closeness across the transition to adolescence (Branje, 2018; Lerner, 2004).

Dishion and McMahon (1998) suggest that adolescent parenting encompasses three interrelated dimensions: (1) motivation, which encompasses the parent's values and parenting goals, (2) parental monitoring, which involves active tracking of their child's whereabouts, and (3) behavioral management, which includes the parent's efforts to shape their child's behavior (Dishion & McMahon, 1998). However, effective parenting is not a unidirectional process from parent to child: the adolescent must be receptive to their parents' involvement (Dishion et al., 2004). For example, parental knowledge is derived from three sources: (1) child disclosure, in which the child spontaneously shares information with their parent; (2) parental solicitation, in which the parent asks their child for information; and (3) parental control, in which the parent imposes restrictions on their child's activities. Though all sources of information are relevant, child disclosure is the most important contributor to parental knowledge (Stattin & Kerr, 2000). Thus, effective parenting is an interpersonal process between the parent and adolescent. When the parent disengages, or the adolescent minimizes family interactions to engage with the peer group, parent-adolescent communication deteriorates. The parent has fewer opportunities to solicit information or provide guidance; the child is less likely to share information about their daily activities; and parents can no longer play a significant role in structuring and reducing deviant peer influences (Dishion et al., 2004).

Though Dishion et al.'s (2004) model of premature adolescent autonomy does not explicitly account for the existence of discrepant views of the parent-adolescent relationship, discrepancies in parent and adolescent reports of parental monitoring and positive parenting may

accurately reflect this bidirectional distancing process and deterioration of communication. Dishion et al. (2004) propose that the development of premature adolescent autonomy occurs largely outside of conscious awareness. Thus, because parents and adolescents do not consciously recognize that distancing has occurred, a difference in parent and adolescent reports of monitoring may more accurately reflect the process of mutual disengagement from the parent-adolescent relationship than would either report alone. Further, the process of premature adolescent autonomy involves a decline in parent-adolescent communication (Dishion et al., 2004), which precludes parents and adolescents from developing a shared perspective on parental monitoring and positive parenting behaviors and, within Goodman et al.'s (2010) theoretical model, is likely to produce discrepant views of the parent-adolescent relationship.

The development of premature adolescent autonomy, as reflected by discrepant views of the parent-child relationship, is likely to yield increased engagement with deviant peers and escalation of adolescent problem behavior. Popular, aggressive adolescents are likely to select friends who engage in similar levels of aggressive behavior and, through positive reinforcement of antisocial behavior, exhibit increases in aggression, delinquency, and substance use over time. Positive reinforcement for antisocial behavior occurs when peers directly or indirectly encourage deviant behavior, and actions or discussions that receive a positive response from peers are more likely to be repeated (Dishion & Snyder, 2016; Snyder, 2002; Snyder et al., 2008). For example, endorsement of deviant attitudes, norm-breaking behavior, and suggestions of deviant behavior within the peer group are associated with increases in delinquency, drug use, and violence (Dishion & Tipsord, 2011).

The Current Study

Dishion et al.'s (2004) model of premature adolescent autonomy suggests that parental disengagement is associated with increased opportunities to engage with deviant peers, which, in

turn, is associated with further deterioration in parent-adolescent communication and increased adolescent involvement in problem behavior. The present study drew from the propositions of premature adolescent autonomy to examine the process by which parent-adolescent reporting discrepancies and affiliations with deviant peers mutually influence one another to affect the development of substance use, delinquent behavior, and physical and relational aggression across middle school. The transition to middle school coincides with the transition to early adolescence and facilitates exposure to a larger number and wider range of peers with whom to affiliate, presenting a key period for the development of premature adolescent autonomy (Dishion et al., 2004; Snyder, 2002). Moreover, susceptibility to social influence peaks during adolescence (Dishion & Tipsord, 2011), highlighting the importance of (1) examining peer influences on antisocial behavior during this developmental period, and (2) understanding and intervening in the processes by which substance use, delinquent behavior, and aggression develop within a sample of aggressive, socially influential adolescents, who have the ability to exert substantial influence within their peer group. Two research aims were proposed:

Research Aim 1. Evaluate the bidirectional influences of parent-adolescent reporting discrepancies for parental monitoring and positive parenting with adolescent peer deviancy.

Hypothesis 1. Adolescents who report lower levels of parental monitoring and positive parenting relative to their parents will be more likely to affiliate with deviant peers. Higher levels of peer deviancy, in turn, will be related to greater discrepancies between parent and adolescent reports of parenting behaviors.

Research Aim 2. Understand the contributions of parent-adolescent reporting discrepancies and deviant peer affiliations to adolescent substance use, delinquent behavior, physical aggression, and relational aggression.

Hypothesis 2a. Adolescents who report lower levels of parental monitoring and positive parenting relative to their parents will exhibit higher levels of substance use, delinquency, physical aggression, and relational aggression.

Hypothesis 2b. Adolescents who affiliate with a more deviant peer group will exhibit higher levels of substance use, delinquency, physical aggression, and relational aggression.

Hypothesis 2c. In light of evidence that relational aggression is more susceptible to peer influences than physical aggression during adolescence (Sijtsema et al., 2010), deviant peer affiliations will be more strongly associated with relational aggression when compared to physical aggression.

Given that prior studies of parent-adolescent reporting discrepancies have not examined whether the magnitude of effects differ for substance use, delinquency, physical aggression, and relational aggression, no hypotheses were forwarded as to whether the effect of discrepant parent-adolescent views changes according to the outcome variable under study.

Method

Participants

Participants were from the Multisite Violence Prevention Project (MVPP), a longitudinal study designed to investigate reductions in school aggression when a violence prevention program is offered to all students and teachers within a grade level (universal intervention) and/or a program is offered to adolescents identified as at-risk for violence (targeted intervention) (Multisite Violence Prevention Project, 2004). Four universities participated in the project: Duke University, The University of Georgia, University of Illinois at Chicago, and Virginia Commonwealth University. Each university developed partnerships with nearby middle schools or elementary schools serving kindergarten through eighth grade (University of Chicago at Illinois only). The project was initiated during the 2001-2002 school year and was

implemented with two successive cohorts of sixth graders. For the first cohort, assessments were conducted at the beginning and end of sixth grade, the end of seventh grade, and the end of eighth grade. For the second cohort, assessments were conducted at the beginning and end of sixth grade, the beginning and end of seventh grade, and the end of eighth grade. Please see Multisite Violence Prevention Project (2004) and Miller-Johnson et al. (2004) for additional information on the project, including the characteristics of participating schools.

The MVPP involved a 2 (universal intervention, no universal intervention) x 2 (targeted intervention, no targeted intervention) research design. The intervention programs used were from the Guiding Responsibility and Expectations for Adolescents Today and Tomorrow (GREAT) Schools and Families Program. The universal intervention included two components: the GREAT Student Program, which aims to build social, cognitive, and emotional skills to manage conflict among sixth grade students (Meyer et al., 2004), and the GREAT Teacher Program, which focuses on strategies that teachers can use to prevent aggression (Orpinas et al., 2004). Students and their parents who participated in the targeted intervention were offered the GREAT Families Program, which includes six elements: (1) promoting home-school partnerships, (2) enhancing parental monitoring, (3) promoting discipline and rules, (4) increasing parent and child self-control; (5) developing effective communication and problem-solving, and (6) planning for the future (Smith et al., 2004).

For the present project, analyses were limited to students who were identified as at-risk for violence by their teachers and were therefore eligible to participate in the targeted intervention or targeted control condition. To determine eligibility, two sixth grade teachers were asked to nominate the most aggressive 25% of their students based on the following behaviors: encourages other students to fight, intimidates other students, gets angry easily, and gets into frequent physical fights. After identifying the most aggressive 25% of their students, teachers

were asked to rate these students on their influence among peers. The following items were used to indicate social influence: (1) “who are the students other students listen to about attitudes, how to behave, what’s good, important, or cool?,” (2) “who sets the trends among students?,” (3) “who seems respected by other students?,” (4) “these should be the students that other students try to be like.” Social influence ratings were on a scale of 1 (not very influential among peers) to 5 (very influential among peers). Students who received social influence ratings of 4 or 5 were selected for the targeted intervention or targeted control condition (Miller-Johnson et al., 2004).

Given that the current analyses focus on features of the parent-child relationship, analyses were limited to students who were in the targeted control condition or who received the universal intervention only (N = 535; 64% male); 273 adolescents were in the targeted control condition (i.e., did not receive the universal or targeted intervention), and 262 adolescents received the universal intervention only. Participants were distributed across sites, with 144 (27%) drawn from Duke University, 132 (25%) from Virginia Commonwealth University, 130 (24%) from University of Illinois at Chicago, and 129 (24%) from The University of Georgia. Adolescents self-identified as African American (69%), Hispanic (14%), White (9%), Multiracial (5%), or another race (3%). They lived in a variety of family structures: 20% lived in a two-parent household with both biological parents; 25% lived in a two-caregiver household, with one of the caregivers as a stepparent, significant other, or grandparent; 45% lived in a single-parent household; and 10% lived in another family structure (e.g., foster family, with another adult relative). On average, the number of individuals living in the household was 3.56 (SD = 1.59, range = 1-11).

For the current study, adolescent-reported variables were drawn from assessments at the beginning of sixth grade, the end of seventh grade, and the end of eighth grade. Adolescent reports were available for 471 individuals at the seventh-grade assessment (response rate = 89%)

and for 453 individuals at the eighth-grade assessment (response rate = 86%). Participation in follow-up assessments was unrelated to study condition (seventh-grade assessment: $\chi^2(1) = 0.05$, $p = .82$; eighth-grade assessment: $\chi^2(1) = 0.41$, $p = .52$) and sex (seventh-grade assessment: $\chi^2(1) = 1.39$, $p = .24$; eighth-grade assessment: $\chi^2(1) = 0.83$, $p = .36$). However, race/ethnicity was related to study retention (seventh-grade assessment: $\chi^2(1) = 6.37$, $p = .01$; eighth-grade assessment: $\chi^2(1) = 4.84$, $p = .03$), such that students who identified as African American were less likely to participate in follow-up assessments than students who identified as White, Hispanic, Multiracial, or another race.

Parent reports were collected from the primary caregiver, who self-identified as the child's biological mother (83%), biological father (6%), step-parent (1%), foster parent (1%), aunt (2%), or grandparent (8%). Caregivers indicated their highest level of education: 37% of caregivers completed high school, and 34% completed education beyond high school. In addition, caregivers were asked to report on their household income; 46% indicated an annual income below $20,000, 42% reported an annual income between $20,000 and $59,999, and 11% reported an annual income greater than $60,000. Approximately 40% of families earned a household income below the poverty threshold level established by the U.S. Census.

Parent-reported variables were drawn from assessments at the beginning of sixth grade and the end of seventh grade; 517 caregivers participated in the sixth-grade assessment, and 410 caregivers participated in the seventh-grade assessment (response rate = 79%). Parental education (high school or less versus more than high school), $\chi^2(1) = 0.47$, $p = .49$, and family structure (single-caregiver versus two-caregiver household), $\chi^2(1) = 0.27$, $p = .61$, were unrelated to participation in the seventh-grade follow-up assessment.

Measures

Parenting practices. Parents' behavior toward their children were reported by both adolescents and parents using the Parenting Practices Scale (Gorman-Smith et al., 1996). Items were drawn from the Pittsburgh Youth Study (Loeber et al., 1998) and were originally designed to measure positive parenting, discipline effectiveness, avoidance of discipline, and degree of monitoring and involvement in the child's life. Items related to discipline effectiveness and avoidance of discipline were administered to parents only. Abbreviated versions of the items administered to both parents and adolescents are shown in Table 1.

Peer deviancy. Peer deviancy was reported by adolescents using 10 items, which evaluated how many of the adolescent's friends had participated in a series of delinquent activities (e.g., skipping school without an excuse, attacking someone with a weapon, drinking alcohol) within the past three months (0 = *none of them*, 1 = *very few of them*, 2 = *some of them*, 3 = *most of them*, 4 = *all of them*). The scale was adapted from a similar measure used by the FastTrack project (Conduct Problems Prevention Research Group, 1998). Response options 3 and 4 were recoded to equal 2, and responses were averaged across items, such that a higher score reflected a greater degree of friend involvement in delinquent behavior. For the current study, the Cronbach's alpha was 0.88 [0.86, 0.89] at the sixth-grade assessment and 0.92 [0.91, 0.93] at the seventh-grade assessment.

Delinquent behavior. Delinquent behavior was assessed using the 8-item delinquency subscale from the Problem Behavior Frequency Scales (PBFS) (Farrell et al., 2000). Adolescents were asked to report how frequently they had engaged in a particular behavior in the past 30 days, such as stealing something from another student, skipping school, and damaging school or other property. Items were rated on a 6-point scale, ranging from "never" (1) to "20 or more times" (6). Responses were averaged across items (α = 0.80, 95% CI = 0.78, 0.83), such that a higher score indicated higher levels of delinquent behavior.

Substance use. Substance use was assessed using the 6-item drug use subscale from the PBFS (Farrell et al., 2000). Adolescents were asked to report how frequently they had drunk beer, wine, and liquor, been drunk, smoked cigarettes, and used marijuana within the past 30 days. Items were rated on a 6-point scale, ranging from "never" (1) to "20 or more times" (6). Responses were averaged across items (α = 0.91, 95% CI = 0.90, 0.92), such that a higher score indicated higher levels of substance use.

Physical aggression. Physical aggression was assessed using the 7-item physical aggression subscale from the PBFS (Farrell et al., 2000). Adolescents were asked to report how frequently a particular behavior had occurred in the past 30 days, such as pushing another child and threatening someone with a weapon. Items were rated on a 6-point scale, ranging from "never" (1) to "20 or more times" (6). Responses were averaged across items (α = 0.84, 95% CI = 0.83, 0.86), such that a higher score indicated a higher level of physical aggression.

Relational aggression. Relational aggression was assessed using the 6-item relational aggression subscale from the PBFS (Farrell et al., 2000). Adolescents were asked to report how frequently a particular behavior had occurred in the past 30 days, such as spreading a false rumor about someone or purposefully excluding another child. Items were rated on a 6-point scale, ranging from "never" (1) to "20 or more times" (6). Responses were averaged across items (α = 0.73, 95% CI = 0.69, 0.76), such that a higher score indicated a higher level of relational aggression.

Covariates. Study site (Duke University, The University of Georgia, University of Illinois at Chicago, Virginia Commonwealth University), condition (0 = control, 1 = universal intervention), cohort (0 = first cohort, 1 = second cohort), race (1 = African American), highest level of caregiver education (0 = high school or less, 1 = more than high school), number of people living in the household, and family structure (0 = single-parent or single-caregiver

household, 1 = two-parent or two-caregiver household) were included as covariates for all analyses.

Statistical Methods

Confirmatory factor analyses. To examine the underlying factor structure of the Parenting Practices Scale, confirmatory factor analyses (CFAs) were conducted using the "cfa" function in the R {lavaan} package with maximum likelihood estimation (Rosseel, 2012). CFAs tested a three-factor model, with latent factors for Monitoring-Related Communication, Involvement, and Positive Parenting. Table 1 shows the indicators for each factor. The Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Squared Residual (SRMR) were used to assess model fit (Hu & Bentler, 1999).

Data preparation and descriptive statistics. Prior to constructing autoregressive cross-lagged models for each dimension of parenting practices, study variables were created and checked to ensure the range of values for each variable was acceptable. Outliers were winsorized, such that scores for which the z-score was greater than three standard deviations below or above the mean were recoded to $z = \pm 3.00$. After winsorization of extreme values, the mean, standard deviation, minimum value, and maximum value were calculated for each study variable. Correlations among variables were also calculated and examined separately for male and female adolescents. Measures of parenting practices and peer deviance were mean-centered prior to constructing quadratic and interaction terms.

Table 1.

Summary of factor structure tested for the Parenting Practices Scale.

Item No.	Abbreviated Item	Factor Assignment
1	Last time you talked with a parent about what you were going to do	Communication
2	Frequency that a parent talks to you about what you are going to do	Communication
3	Last time you talked with a parent about what you had actually done	Communication
4	Frequency that a parent talked to you about what you had done	Communication
7	How often you help with family fun activities	Involvement
8	How often you like to get involved in family activities	Involvement
9	How often a parent has time to listen to you when you want to talk	Involvement
10	How often you and a parent do things together at home	Involvement
12	How often you have a friendly talk with a parent	Involvement
14	How often a parent talks with you about how you are doing in school	Involvement
15	How much time were you together with a parent on weekend days	Involvement
16	How much time you were doing something together on weekdays	Involvement
17	How much time were you doing something together on weekends	Involvement
28	How often one of your parents gives you a wink or a smile	Pos. Parenting
29	How often one of your parents says something nice	Pos. Parenting
30	How often one of your parents gives you a hug or kiss	Pos. Parenting
31	How often one of your parents gives you a reward	Pos. Parenting
32	How often one of your parents gives you some special privilege	Pos. Parenting
33	How often one of your parents does something special with you	Pos. Parenting

Abbreviations. Pos. Parenting = Positive Parenting. *Notes.* All items are presented from the adolescent's point of view. Items were structured similarly for parents but replaced the word "parent" with "you" and the word "you" with the child's name (e.g., the parent version of Item 33 would be, "how often you do something special for [your child]").

Autoregressive cross-lagged models. The focus of Aim 1 is to evaluate the bidirectional influences of parent-adolescent reporting discrepancies for parental monitoring and positive parenting with adolescent peer deviancy. Aim 2 assesses the contributions of parent-adolescent reporting discrepancies and deviant peer affiliations to adolescent substance use, delinquent behavior, physical aggression, and relational aggression. To address each research aim, separate autoregressive cross-lagged models were specified for each dimension of parenting.

The associations between parent-adolescent reporting discrepancies, peer deviance, and adolescent problem behaviors were tested using polynomial regression, as recommended by Laird and Weems (2011), Laird and LaFleur (2016), and Laird and De Los Reyes (2013). Though the majority of early research on parent-adolescent reporting discrepancies used standardized difference scores in the analyses, difference scores only provide information about the discrepancy between parent and adolescent reports and do not indicate where on the scale the reports fall (Reynolds et al., 2011). Further, associations between difference scores and adolescent outcomes can arise when parent and adolescent reports are differentially associated with the outcome of interest or from differences in the variances of the two informants' scores, complicating the interpretation of a significant association between a standardized difference score and adolescent outcome. By contrast, polynomial regression analyses incorporate an interaction term to examine whether parent-adolescent reporting discrepancies are predictive of adolescent outcomes above and beyond the effects of individual reports, thus addressing many of the limitations of standardized difference scores and permitting a clear interpretation of results (Laird & De Los Reyes, 2013).

Polynomial regression approaches can be modified to examine reporter discrepancies as predictor or outcome variables (De Los Reyes & Ohannessian, 2016). When using parent-adolescent reporting discrepancies as a predictor variable, Laird and De Los Reyes (2013)

specify the following equation: $Y = b_0 + b_1A + b_2P + b_3A^2 + b_4AP + b_5P^2$, where Y represents the outcome variable, A represents the adolescent report, and P represents the parent report. Thus, the polynomial regression model estimates the linear and quadratic effects of adolescent reports at mean levels of parent reports, the linear and quadratic effects of parent reports at mean levels of adolescent reports, and the interaction of parent and adolescent reports. In this model, the interaction term tests whether scores from one informant are more or less strongly associated with the outcome based on scores from the other informant (Laird & De Los Reyes, 2013).

When using parent-adolescent reporting discrepancies as an outcome variable, Laird and LaFleur (2016) specify the following equation: $A = b_0 + b_1P + b_2P^2 + b_3V + b_4V^2 + b_5PV$, where A represents the adolescent report, P represents the parent report, and V represents the predictor variable. In this model, the interaction term tests whether scores from one informant are more or less strongly associated with scores from the other informant based on levels of the predictor.

Premature adolescent autonomy proposes that the parent-adolescent relationship and peer relationships mutually influence one another during the transition to adolescence: deterioration of parent-adolescent communication arises from a combination of parental disengagement and adolescent affiliation with deviant peers and, in turn, leads to the development of adolescent problem behaviors (Dishion et al., 2004). Thus, measures of parenting practices and peer deviance were drawn from assessments at the beginning of sixth grade and the end of seventh grade. Measures of adolescent delinquent behavior, substance use, physical aggression, and relational aggression were drawn from the assessment at the end of eighth grade. A general form of the autoregressive cross-lagged model is shown in Figure 1. Separate models were constructed for each dimension of parenting using the R {lavaan} package (Rosseel, 2012). Multiple group analyses were conducted to explore the possibility of differential regression paths by adolescent sex. An unconstrained model, in which the path coefficients were permitted to vary across male

and female participants, was compared to a constrained model, in which the parameter coefficients were set to be equal. Change in model fit from the unconstrained model was assessed using the χ^2 difference test. For all models, full information maximum likelihood (FIML) was used to address missing data.

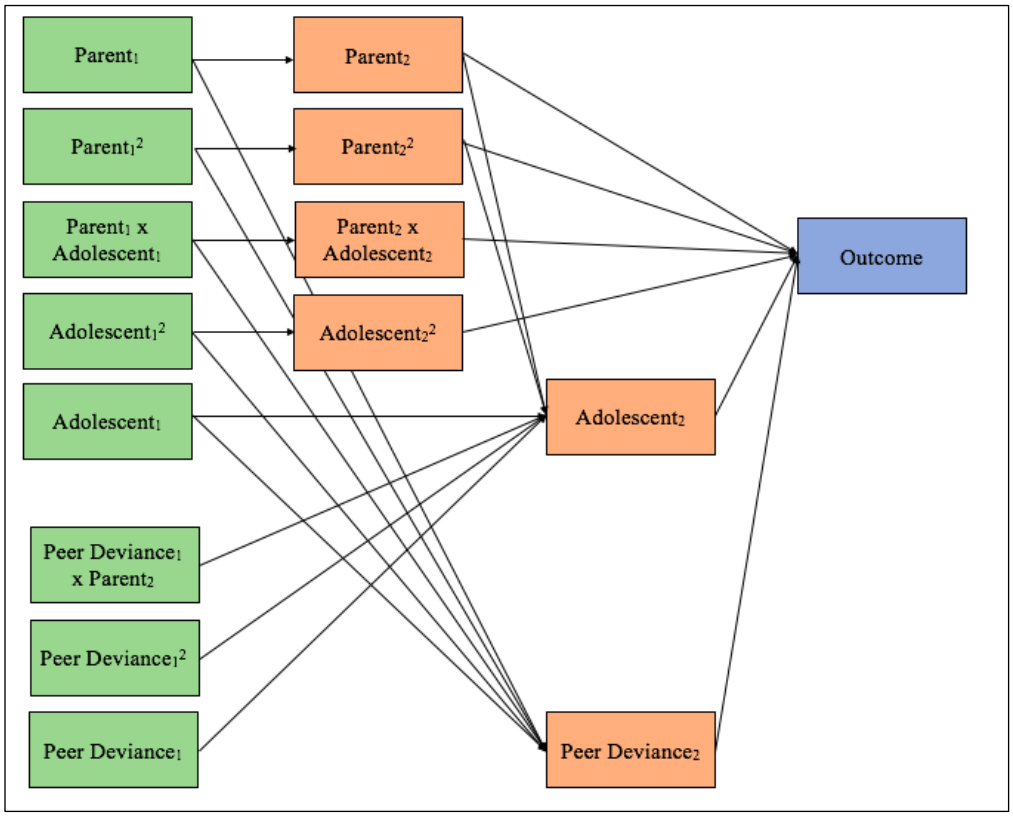

Figure 1. Cross-lagged model examining the contributions of parent-adolescent reporting discrepancies and peer deviance to adolescent problem behavior**.** Separate models were constructed for each dimension of parenting. Delinquent behavior, drug use, physical aggression, and relational aggression were included in the same model, though only one outcome is shown for simplicity. Subscripts represent the assessment time (1 = beginning of sixth grade, 2 = end of seventh grade). Variables are also color coded by time of assessment, with variables assessed at the beginning of sixth grade shown in green, variables assessed at the end of seventh grade shown in orange, and variables assessed at the end of eighth grade shown in blue.

Results

Confirmatory Factor Analyses

As an initial step, CFAs were conducted to assess a three-factor model for the Parenting Practices Scale, with latent factors for Monitoring-Related Communication, Involvement, and

Positive Parenting. Error variances were correlated for items with a similar response format within the Involvement factor (i.e., among items 7, 8, 9, 10, 12, and 14, and among items 15, 16, and 17). In addition, error variances were correlated for items with the same stem (i.e., "how often did one of them give you…;" Items 28, 30, 31, and 32) within the Positive Parenting factor. To inform the measures of parenting used for the autoregressive cross-lagged models, separate CFAs were conducted for parent and adolescent reports, as well as for assessments conducted at the beginning of sixth grade and the end of seventh grade. Model fit indices are shown in Table 2; the values for Cronbach's alpha are shown in Table 3; and inter-item correlations are shown in Tables 4, 5, and 6 for Monitoring-Related Communication, Involvement, and Positive Parenting, respectively. For the three-factor models, all values on the CFI were above 0.90, indicating sufficient model fit. Overall, the model fit indices and indicators of reliability provide evidence to suggest that three dimensions of parenting (Monitoring-Related Communication, Involvement, and Positive Parenting) provide an adequate fit to the data. Therefore, I constructed three separate mean scores for monitoring-related communication, involvement, and positive parenting and specified separate autoregressive cross-lagged models for each dimension of parenting.

Table 2.

Model fit indices for the three-factor model of parenting practices.

	Adolescent Report		Parent Report	
	Sixth Grade	Seventh Grade	Sixth Grade	Seventh Grade
CFI	0.968	0.970	0.907	0.900
RMSEA	0.040	0.054	0.061	0.065
SRMR	0.030	0.025	0.048	0.075

Abbreviations. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Squared Residual.

Table 3.

Cronbach's alpha for communication, involvement, and positive parenting subscales.

	Adolescent Report		Parent Report	
	Sixth Grade	Seventh Grade	Sixth Grade	Seventh Grade
Communication	0.75 [0.72, 0.77]	0.89 [0.88, 0.90]	0.76 [0.74, 0.79]	0.83 [0.82, 0.85]
Involvement	0.81 [0.79, 0.83]	0.90 [0.89, 0.91]	0.76 [0.74, 0.78]	0.78 [0.76, 0.80]
Positive Parenting	0.83 [0.81, 0.84]	0.91 [0.91, 0.92]	0.75 [0.73, 0.78]	0.83 [0.81, 0.84]

Table 4.

Inter-item correlations for monitoring-related communication.

Adolescent Report, Sixth Grade				
	Item 1	Item 2	Item 3	Item 4
Item 1	-			
Item 2	.516	-		
Item 3	.364	.370	-	
Item 4	.393	.401	.525	-
Adolescent Report, Seventh Grade				
	Item 1	Item 2	Item 3	Item 4
Item 1	-			
Item 2	.725	-		
Item 3	.631	.672	-	
Item 4	.612	.676	.780	-
Parent Report, Sixth Grade				
	Item 1	Item 2	Item 3	Item 4
Item 1	-			
Item 2	.571	-		
Item 3	.369	.404	-	
Item 4	.378	.464	.562	-
Parent Report, Seventh Grade				
	Item 1	Item 2	Item 3	Item 4
Item 1	-			
Item 2	.654	-		
Item 3	.524	.483	-	
Item 4	.502	.528	.662	-

Table 5.

Inter-item correlations for involvement.

Adolescent Report, Sixth Grade									
	Item 7	Item 8	Item 9	Item 10	Item 12	Item 14	Item 15	Item 16	Item 17
Item 7	-								
Item 8	.485	-							
Item 9	.224	.241	-						
Item 10	.383	.376	.438	-					
Item 12	.261	.274	.447	.444	-				
Item 14	.251	.256	.377	.372	.389	-			
Item 15	.229	.204	.244	.313	.276	.264	-		
Item 16	.270	.213	.284	.350	.314	.232	.468	-	
Item 17	.255	.232	.257	.321	.320	.216	.419	.682	-
Adolescent Report, Seventh Grade									
	Item 7	Item 8	Item 9	Item 10	Item 12	Item 14	Item 15	Item 16	Item 17
Item 7	-								
Item 8	.694	-							
Item 9	.483	.479	-						
Item 10	.564	.546	.643	-					
Item 12	.460	.470	.611	.661	-				
Item 14	.415	.447	.541	.559	.578	-			
Item 15	.339	.344	.441	.461	.448	.491	-		
Item 16	.404	.340	.404	.512	.472	.463	.528	-	
Item 17	.462	.386	.439	.518	.485	.475	.516	.771	-
Parent Report, Sixth Grade									
	Item 7	Item 8	Item 9	Item 10	Item 12	Item 14	Item 15	Item 16	Item 17

Table 5 continues

Table 5 continued									
Item 7	-								
Item 8	.554	-							
Item 9	.191	.183	-						
Item 10	.320	.317	.372	-					
Item 12	.228	.297	.347	.403	-				
Item 14	.185	.219	.204	.226	.318	-			
Item 15	.169	.182	.155	.234	.181	.094	-		
Item 16	.169	.146	.184	.285	.186	.105	.246	-	
Item 17	.250	.250	.220	.394	.276	.158	.373	.542	-
Parent Report, Seventh Grade									
	Item 7	Item 8	Item 9	Item 10	Item 12	Item 14	Item 15	Item 16	Item 17
Item 7	-								
Item 8	.660	-							
Item 9	.197	.160	-						
Item 10	.392	.359	.284	-					
Item 12	.275	.227	.405	.362	-				
Item 14	.208	.191	.250	.261	.335	-			
Item 15	.224	.213	.251	.238	.239	.277	-		
Item 16	.182	.166	.226	.280	.216	.187	.426	-	
Item 17	.245	.294	.235	.305	.264	.241	.527	.551	-

Table 6.

Inter-item correlations for positive parenting.

Adolescent Report, Sixth Grade						
	Item 28	Item 29	Item 30	Item 31	Item 32	Item 33
Item 28	-					
Item 29	.522	-				
Item 30	.516	.468	-			
Item 31	.438	.444	.423	-		
Item 32	.365	.352	.378	.497	-	
Item 33	.416	.363	.408	.559	.477	-
Adolescent Report, Seventh Grade						
	Item 28	Item 29	Item 30	Item 31	Item 32	Item 33
Item 28	-					
Item 29	.745	-				
Item 30	.675	.701	-			
Item 31	.609	.638	.629	-		
Item 32	.578	.622	.592	.676	-	
Item 33	.573	.615	.625	.710	.668	-
Parent Report, Sixth Grade						
	Item 28	Item 29	Item 30	Item 31	Item 32	Item 33
Item 28	-					
Item 29	.594	-				
Item 30	.459	.496	-			
Item 31	.258	.269	.232	-		
Item 32	.245	.261	.230	.516	-	
Item 33	.246	.247	.280	.424	.456	-
Parent Report Seventh Grade						
	Item 28	Item 29	Item 30	Item 31	Item 32	Item 33
Item 28	-					
Item 29	.655	-				
Item 30	.536	.620	-			
Item 31	.381	.367	.402	-		
Item 32	.321	.346	.348	.637	-	
Item 33	.309	.339	.376	.533	.584	-

Descriptive Statistics

Descriptive statistics, including means, standard deviations, and scale ranges, were calculated for measures of parenting practices, peer deviancy, and problem behavior (Table 7). On average, parents provided higher scores for measures of monitoring-related communication, involvement, and positive parenting when compared to adolescents.

Table 7.

Means, standard deviations, and scale ranges of study variables.

Variable	*n*	*M*	*SD*	*Scale Range*
AR Communication T1	512	3.64	1.18	1.00 - 5.00
AR Communication T2	462	3.60	1.40	1.00 - 5.00
PR Communication T1	516	4.61	0.57	2.77 - 5.00
PR Communication T2	410	4.57	0.58	2.67 - 5.00
AR Involvement T1	509	3.66	0.87	1.05 - 5.00
AR Involvement T2	461	3.44	1.09	1.00 - 5.00
PR Involvement T1	516	4.15	0.64	2.23 - 5.00
PR Involvement T2	407	4.07	0.66	2.06 - 5.00
AR Positive Parenting T1	511	3.91	0.96	1.03 - 5.00
AR Positive Parenting T2	463	3.70	1.17	1.00 - 5.00
PR Positive Parenting T1	517	4.12	0.70	2.00 - 5.00
PR Positive Parenting T2	410	4.08	0.80	1.64 - 5.00
Peer Deviance T1	503	0.36	0.44	0.00 - 1.71
Peer Deviance T2	466	0.42	0.54	0.00 - 2.00
Physical Aggression T3	453	1.84	0.91	1.00 - 4.61
Relational Aggression T3	453	1.58	0.69	1.00 - 3.78
Substance Use T3	452	1.44	0.88	1.00 - 4.34
Delinquency T3	452	1.44	0.61	1.00 - 3.43

Abbreviations. AR = adolescent-reported; PR = parent-reported; T1 = beginning of sixth grade; T2 = end of seventh grade; T3 = end of eighth grade.

In addition, correlations among study variables were calculated for the full sample (Table 8) and examined separately for male (Table 9) and female (Table 10) participants prior to constructing autoregressive cross-lagged models. The correlation between parent and adolescent reports of parenting practices ranged from 0.15 to 0.24 for the full sample, 0.15 to 0.26 among male participants, and 0.15 to 0.26 among female participants. Further, when examining the pattern of correlations among the study variables separately by sex, several notable differences were observed. First, substance use appeared to be more closely related to parenting practices for male participants than for female participants. Among adolescent boys, substance use was significantly correlated with adolescent- and parent-reported monitoring-related communication, involvement, and positive parenting. Among adolescent girls, substance use was related only to adolescent-reported positive parenting and parent-reported involvement. For female adolescents, both relational and physical aggression was significantly correlated with adolescent-reported involvement and positive parenting, but for male adolescents, physical aggression was related only to parent-reported involvement. Finally, peer deviancy at Time 1 was correlated with several concurrent measures of parenting practices, including adolescent-reported communication, parent-reported involvement, and adolescent-reported positive parenting, for female participants but was related to only adolescent-reported communication among male participants.

Table 8.

Correlations among study variables for the full sample.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. AR Communication T1	-																	
2. AR Communication T2	.43*	-																
3. PR Communication T1	.15*	.11*	-															
4. PR Communication T2	.14*	.18*	.36*	-														
5. AR Involvement T1	.51*	.30*	.18*	.18*	-													
6. AR Involvement T2	.35*	.62*	.13*	.17*	.40*	-												
7. PR Involvement T1	.17*	.13*	.42*	.33*	.24*	.16*	-											
8. PR Involvement T2	.12*	.15*	.21*	.44*	.21*	.22*	.45*	-										
9. AR Positive Parenting T1	.40*	.26*	.13*	.17*	.57*	.35*	.26*	.18*	-									
10. AR Positive Parenting T2	.23*	.39*	.08	.17*	.31*	.56*	.16*	.21*	.44*	-								
11. PR Positive Parenting T1	.14*	.06	.26*	.25*	.14*	.05	.49*	.33*	.16*	.08	-							
12. PR Positive Parenting T2	.06	.08	.17*	.30*	.12*	.12*	.35*	.47*	.13*	.20*	.43*	-						
13. Peer Deviancy T1	-.18*	-.07	-.06	-.13*	-.08	-.02	-.12*	-.10	-.07	-.08	.00	-.09	-					
14. Peer Deviancy T2	-.03	-.09	-.10*	-.12*	-.08	-.27*	-.15*	-.21*	-.09	-.20*	-.07	-.09	.26*	-				
15. Physical Aggression T3	.00	-.03	.04	-.10	.00	-.10*	-.08	-.17*	-.05	-.11*	.06	-.02	.23*	.36*	-			
16. Relational Aggression T3	.02	.00	.03	-.06	-.04	-.10*	-.06	-.06	-.07	-.13*	.08	-.03	.16*	.25*	.67*	-		
17. Substance Use T3	-.09	-.12*	-.07	-.09	-.05	-.18*	-.14*	-.18*	-.20*	-.17*	-.05	-.08	.25*	.35*	.48*	.35*	-	
18. Delinquency T3	-.07	-.11*	-.03	-.14*	-.04	-.18*	-.10*	-.22*	-.08	-.14*	.01	-.02	.19*	.33*	.66*	.63*	.65*	-

Abbreviations. AR = adolescent-reported; PR = parent-reported; T1 = beginning of sixth grade; T2 = end of seventh grade; T3 = end of eighth grade. *$p < .05$.

Table 9.

Correlations among study variables for male participants.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. AR Communication T1	-																	
2. AR Communication T2	.41*	-																
3. PR Communication T1	.15*	.17*	-															
4. PR Communication T2	.12	.18*	.29*	-														
5. AR Involvement T1	.48*	.30*	.18*	.20*	-													
6. AR Involvement T2	.38*	.62*	.21*	.17*	.39*	-												
7. PR Involvement T1	.12*	.10	.47*	.36*	.26*	.16*	-											
8. PR Involvement T2	.09	.15*	.22*	.44*	.27*	.21*	.49*	-										
9. AR Positive Parenting T1	.39*	.29*	.17*	.18*	.59*	.37*	.27*	.21*	-									
10. AR Positive Parenting T2	.23*	.33*	.13*	.13*	.34*	.50*	.18*	.18*	.46*	-								
11. PR Positive Parenting T1	.08	.07	.30*	.25*	.14*	.08	.46*	.37*	.13*	.08	-							
12. PR Positive Parenting T2	.02	.07	.20*	.27*	.16*	.12	.37*	.44*	.15*	.19*	.45*	-						
13. Peer Deviancy T1	-.16*	-.06	-.02	-.05	-.06	-.02	-.08	-.02	-.03	-.08	.01	-.03	-					
14. Peer Deviancy T2	-.04	-.08	-.12*	-.10	-.07	-.24*	-.15*	-.21*	-.10	-.20*	-.11	-.12	.27*	-				
15. Physical Aggression T3	.02	-.03	.07	-.11	.01	-.05	-.07	-.17*	.00	-.08	.07	-.01	.24*	.33*	-			
16. Relational Aggression T3	-.01	.02	.08	-.05	-.08	-.06	-.07	-.10	-.07	-.09	.07	-.06	.15*	.23*	.68*	-		
17. Substance Use T3	-.09	-.18*	-.12*	-.10	-.08	-.21*	-.15*	-.17*	-.17*	-.22*	-.08	-.15*	.24*	.40*	.48*	.34*	-	
18. Delinquency T3	.00	-.13*	-.01	-.10	-.01	-.15*	-.09	-.20*	-.03	-.13*	.03	.00	.14*	.32*	.69*	.62*	.65*	-

Abbreviations. AR = adolescent-reported; PR = parent-reported; T1 = beginning of sixth grade; T2 = end of seventh grade; T3 = end of eighth grade. *$p < .05$.

Table 10.

Correlations among study variables for female participants.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. AR Communication T1	-																	
2. AR Communication T2	.45*	-																
3. PR Communication T1	.15*	.02	-															
4. PR Communication T2	.19*	.21*	.48*	-														
5. AR Involvement T1	.55*	.31*	.16*	.15	-													
6. AR Involvement T2	.29*	.61*	-.01	.20*	.41*	-												
7. PR Involvement T1	.26*	.18*	.30*	.33*	.20*	.16*	-											
8. PR Involvement T2	.20*	.19*	.18*	.43*	.12	.26*	.40*	-										
9. AR Positive Parenting T1	.42*	.23*	.04	.16	.54*	.33*	.24*	.12	-									
10. AR Positive Parenting T2	.23*	.50*	-.02	.24*	.27*	.67*	.12	.26*	.42*	-								
11. PR Positive Parenting T1	.23*	.03	.18*	.27*	.15*	.00	.54*	.26*	.21*	.06	-							
12. PR Positive Parenting T2	.15	.09	.12	.34*	.06	.12	.33*	.51*	.09	.21*	.40*	-						
13. Peer Deviancy T1	-.20*	-.08	-.14	-.23*	-.12	-.03	-.20*	-.22*	-.16*	-.07	-.01	-.19*	-					
14. Peer Deviancy T2	.00	-.12	-.05	-.16	-.10	-.35*	-.12	-.24*	-.07	-.19*	.02	-.04	.24*	-				
15. Physical Aggression T3	-.04	-.04	.00	-.07	-.01	-.19*	-.10	-.15	-.14	-.16*	.04	-.03	.20*	.43*	-			
16. Relational Aggression T3	.05	-.04	-.03	-.07	.02	-.17*	-.05	.01	-.06	-.18*	.10	.01	.17*	.31*	.65*	-		
17. Substance Use T3	-.09	-.02	.01	-.09	.01	-.11	-.11	-.19*	-.24*	-.08	.00	.06	.27*	.27*	.49*	.38*	-	
18. Delinquency T3	-.18*	-.07	-.07	-.19*	-.09	-.24*	-.12	-.27*	-.16*	-.16*	-.02	-.06	.29*	.37*	.61*	.64*	.66*	-

Abbreviations. AR = adolescent-reported; PR = parent-reported; T1 = beginning of sixth grade; T2 = end of seventh grade; T3 = end of eighth grade. *$p < .05$.

Autoregressive Cross-Lagged Models

To address the primary research aims, autoregressive cross-lagged models were constructed to examine the bidirectional relations between parent-adolescent reporting discrepancies for parenting practices and peer deviance, as well as the associations of reporting discrepancies and peer deviance with adolescent physical aggression, relational aggression, substance use, and delinquency. Separate autoregressive cross-lagged models were specified for each dimension of parenting. First, I constructed models with parameters freely estimated across male and female adolescents. Next, I constrained all parameter estimates to be equal across males and females and used the χ^2 difference test to assess change in model fit.

Monitoring-related communication. For monitoring-related communication, a significant decrement in model fit was observed when parameter estimates were constrained to be equal for male and female adolescents, $\Delta\chi^2(130) = 159.03$, $p = .04$. Therefore, regression coefficients are presented separately by sex in Table 11, and path diagrams depicting statistically significant paths are shown in Figures 2 and 3 for males and females, respectively. For both male and female adolescents, the cross-lagged associations between peer deviance and discrepant parent-adolescent reports of communication were not significant, and parent-adolescent reporting discrepancies did not significantly predict adolescent problem behavior. However, peer deviance at the end of seventh grade was positively related to all four outcomes – physical aggression, relational aggression, substance use, and delinquency – at the end of eighth grade.

For male adolescents only, a significant, negative association was observed between the quadratic term for parent-reported monitoring-related communication and physical aggression, indicating that the magnitude of the association between parent-reported communication and physical aggression was lower at higher levels of parent-reported communication. Adolescent-reported communication was also negatively associated with substance use for male adolescents

(Figure 2). In total, the model accounted for 20.6% of the variance in physical aggression, 14.2% of the variance in relational aggression, 20.5% of the variance in substance use, and 17.0% of the variance in delinquent behavior among males. For female adolescents, the linear and quadratic effects of parent-reported communication on substance use were significant, such that (1) as parents reported higher levels of monitoring-related communication, adolescents reported lower levels of substance use, and (2) this association between parent-reported communication and substance use was lessened at higher levels of monitoring-related communication (Figure 3). In total, the model accounted for 18.3% of the variance in physical aggression, 11.0% of the variance in relational aggression, 17.6% of the variance in substance use, and 16.1% of the variance in delinquent behavior among females.

Table 11.

Regression coefficients for model of monitoring-related communication.

		β [95% CI]	
Outcome	Predictor	Males	Females
PR Communication T2	PR Communication T1	0.23 [0.12, 0.34] *	0.53 [0.34, 0.71] *
PR Communication^2 T2	PR Communication^2 T1	0.10 [-0.01, 0.22]	0.56 [0.35, 0.78] *
PR Communication T2 x AR Communication T2	PR Communication T1 x AR Communication T1	0.14 [0.00, 0.27] *	0.36 [0.18, 0.54] *
AR Communication^2 T2	AR Communication^2 T1	0.25 [0.15, 0.34] *	0.30 [0.17, 0.43] *
AR Communication T2	AR Communication T1	0.39 [0.28, 0.50] *	0.41 [0.27, 0.56] *
AR Communication T2	PR Communication T2	0.15 [-0.02, 0.32]	0.15 [-0.06, 0.36]
AR Communication T2	PR Communication^2 T2	0.00 [-0.09, 0.10]	0.02 [-0.08, 0.11]
AR Communication T2	Peer Deviance T1 x PR Communication T2	0.12 [-0.01, 0.25]	0.01 [-0.12, 0.13]
AR Communication T2	Peer Deviance^2 T1	0.06 [-0.03, 0.15]	0.05 [-0.10, 0.20]
AR Communication T2	Peer Deviance T1	-0.11 [-0.28, 0.06]	-0.04 [-0.28, 0.19]
Peer Deviance T2	Peer Deviance T1	0.28 [0.17, 0.40] *	0.26 [0.12, 0.41] *
Peer Deviance T2	PR Communication T1	-0.16 [-0.37, 0.05]	-0.01 [-0.26, 0.24]
Peer Deviance T2	PR Communication^2 T1	-0.02 [-0.13, 0.09]	0.03 [-0.09, 0.15]
Peer Deviance T2	PR Communication T1 x AR Communication T1	-0.06 [-0.20, 0.08]	-0.08 [-0.23, 0.06]
Peer Deviance T2	AR Communication^2 T1	-0.05 [-0.17, 0.07]	0.04 [-0.11, 0.18]
Peer Deviance T2	AR Communication T1	0.00 [-0.15, 0.15]	0.08 [-0.07, 0.24]
Physical Aggression T3	PR Communication T2	-0.04 [-0.23, 0.15]	0.03 [-0.16, 0.22]
Physical Aggression T3	PR Communication^2 T2	0.02 [-0.07, 0.12]	0.03 [-0.05, 0.11]
Physical Aggression T3	PR Communication T2 x AR Communication T2	-0.02 [-0.14, 0.10]	-0.02 [-0.15, 0.10]
Physical Aggression T3	AR Communication^2 T2	-0.18 [-0.31, -0.05] *	-0.01 [-0.18, 0.16]
Physical Aggression T3	AR Communication T2	-0.13 [-0.27, 0.01]	0.00 [-0.16, 0.16]
Physical Aggression T3	Peer Deviance T2	0.27 [0.17, 0.37] *	0.44 [0.30, 0.58] *
Relational Aggression T3	PR Communication T2	-0.02 [-0.15, 0.11]	0.03 [-0.14, 0.19]

Table 11 continues

Table 11 continued			
Relational Aggression T3	PR Communication^2 T2	0.02 [-0.05, 0.08]	0.04 [-0.03, 0.11]
Relational Aggression T3	PR Communication T2 x AR Communication T2	-0.06 [-0.14, 0.03]	-0.03 [-0.14, 0.08]
Relational Aggression T3	AR Communication^2 T2	-0.05 [-0.14, 0.05]	-0.06 [-0.21, 0.09]
Relational Aggression T3	AR Communication T2	0.00 [-0.10, 0.10]	-0.05 [-0.19, 0.10]
Relational Aggression T3	Peer Deviance T2	0.15 [0.08, 0.22] *	0.29 [0.16, 0.41] *
Substance Use T3	PR Communication T2	-0.01 [-0.20, 0.19]	-0.33 [-0.52, -0.14] *
Substance Use T3	PR Communication^2 T2	0.02 [-0.08, 0.12]	-0.12 [-0.20, -0.03] *
Substance Use T3	PR Communication T2 x AR Communication T2	0.04 [-0.08, 0.15]	0.10 [-0.03, 0.23]
Substance Use T3	AR Communication^2 T2	0.03 [-0.09, 0.15]	0.03 [-0.14, 0.21]
Substance Use T3	AR Communication T2	-0.14 [-0.27, -0.01] *	0.07 [-0.09, 0.24]
Substance Use T3	Peer Deviance T2	0.33 [0.24, 0.42] *	0.28 [0.14, 0.43] *
Delinquency T3	PR Communication T2	-0.03 [-0.17, 0.10]	-0.11 [-0.25, 0.03]
Delinquency T3	PR Communication^2 T2	0.02 [-0.05, 0.08]	0.00 [-0.06, 0.06]
Delinquency T3	PR Communication T2 x AR Communication T2	-0.06 [-0.14, 0.02]	-0.01 [-0.10, 0.09]
Delinquency T3	AR Communication^2 T2	0.01 [-0.08, 0.09]	0.05 [-0.07, 0.18]
Delinquency T3	AR Communication T2	-0.06 [-0.15, 0.04]	0.03 [-0.08, 0.15]
Delinquency T3	Peer Deviance T2	0.18 [0.11, 0.25] *	0.25 [0.15, 0.35] *

Abbreviations. AR = adolescent-reported; PR = parent-reported; T1 = beginning of sixth grade; T2 = end of seventh grade; T3 = end of eighth grade. * $p < .05$

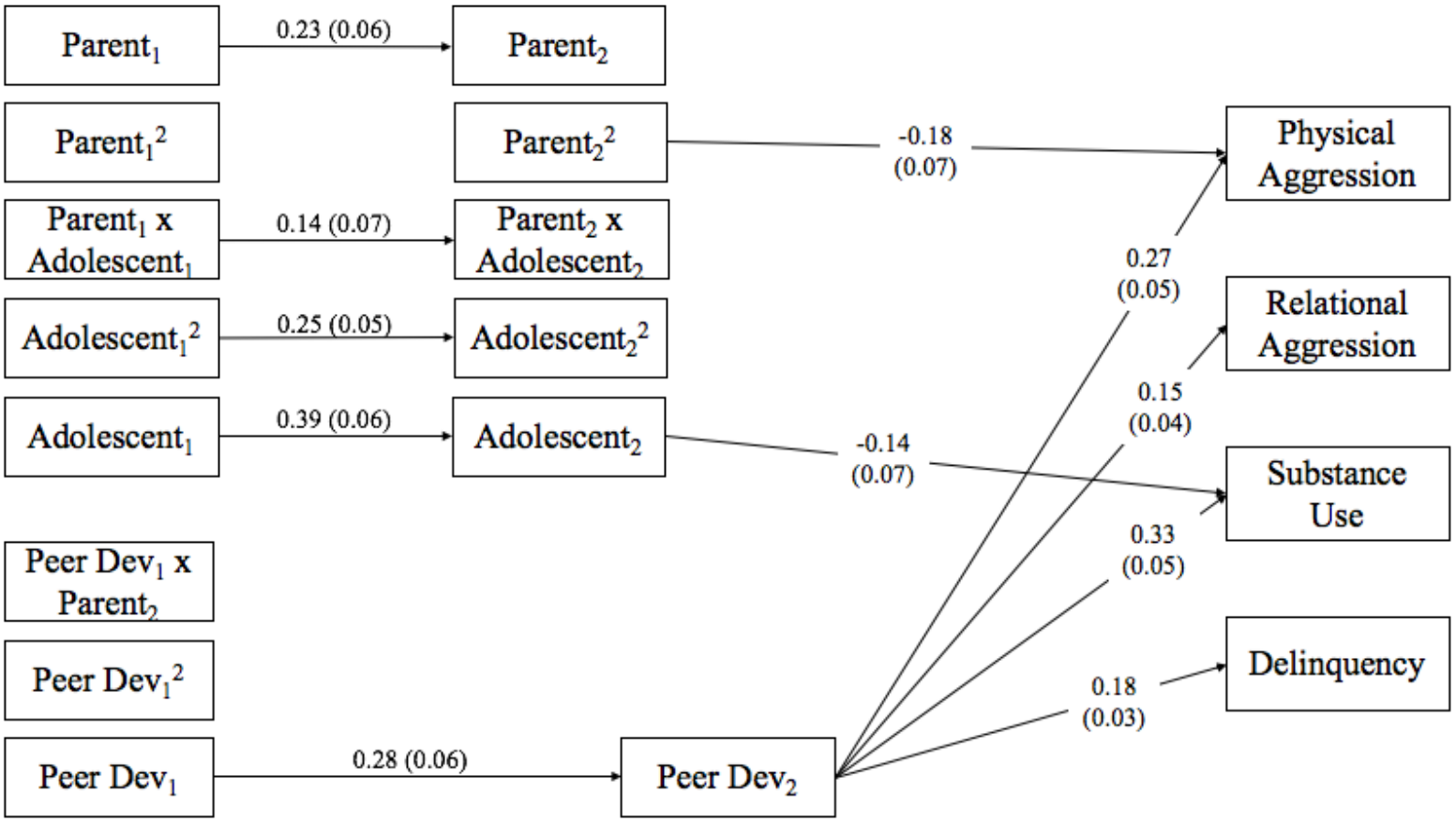

Figure 2. Cross-lagged model examining the contributions of parent-adolescent reporting discrepancies for monitoring-related communication and peer deviance to adolescent problem behavior among male adolescents. Subscripts represent the assessment time (1 = beginning of sixth grade, 2 = end of seventh grade). Standardized regression coefficients and standard errors are shown for each path. Only statistically significant paths ($p < .05$) are included.

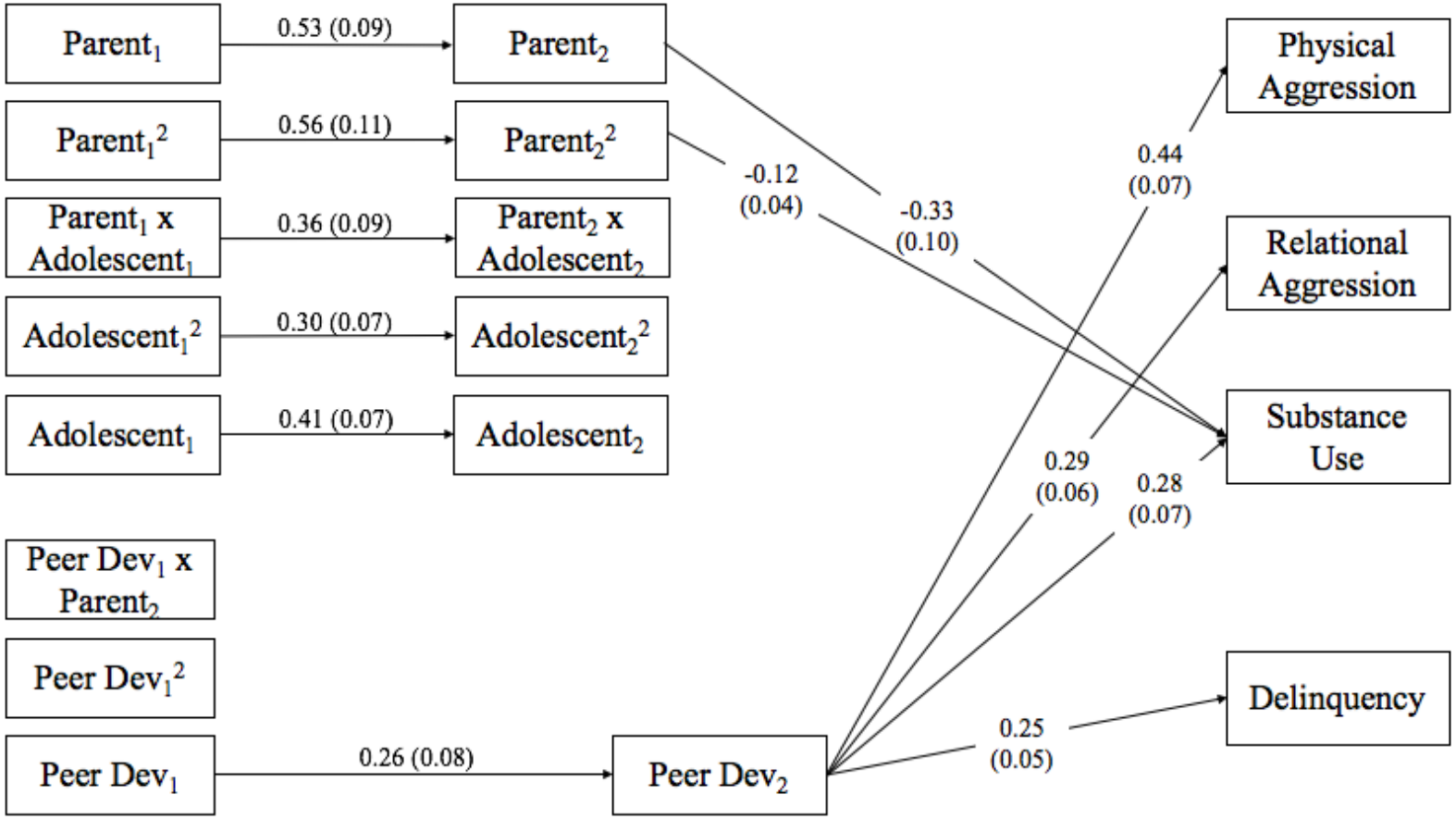

Figure 3. Cross-lagged model examining the contributions of parent-adolescent reporting discrepancies for monitoring-related communication and peer deviance to adolescent problem behavior among female adolescents. Subscripts represent the assessment time (1 = beginning of sixth grade, 2 = end of seventh grade). Standardized regression coefficients and standard errors are shown for each path. Only statistically significant paths ($p < .05$) are included.

Involvement. For parental involvement, there was not a significant change in model fit when regression coefficients were constrained to be equal across male and female adolescents, $\Delta\chi^2(130) = 148.47$, $p = .13$. The results for the fully constrained model are presented in Table 12 and Figure 4. For parental involvement, the cross-lagged associations between parent-adolescent reporting discrepancies and peer deviance were not significant. However, peer deviance was positively related to physical and relational aggression, substance use, and delinquency. Parent-reported involvement was negatively associated with substance use and delinquency, and the quadratic effect of parent-reported involvement on delinquency was significant, such that the relationship was strengthened at higher levels of involvement. The quadratic effects of parent-reported involvement on physical aggression and of adolescent-reported involvement on substance use and delinquency were significant but could not be interpreted in the absence of a linear effect.

In addition, the interaction between parent and adolescent reports of involvement was significantly associated with relational aggression. As shown in Figure 5, parent-reported involvement was positively related to relational aggression at low levels of adolescent-reported involvement, though the simple slope did not significantly differ from zero, $b = 0.07$, $t = 1.39$, $p = .16$. On the other hand, parent-reported involvement was negatively (but non-significantly) related to relational aggression at high levels of adolescent-reported involvement, $b = -0.18$, $t = -1.89$, $p = .06$. In total, the model accounted for 19.8% of the variance in physical aggression, 13.8% of the variance in relational aggression, 22.2% of the variance in substance use, and 18.5% of the variance in delinquency among males. Among females, the model accounted for 19.5% of the variance in physical aggression, 11.2% of the variance in relational aggression, 20.0% of the variance in substance use, and 19.2% of the variance in delinquency.

Table 12.

Regression coefficients for model of parental involvement.

Outcome	Predictor	β [95% CI]
PR Involvement T2	PR Involvement T1	0.47 [0.37, 0.56] *
PR Involvement^2 T2	PR Involvement^2 T1	0.35 [0.25, 0.44] *
PR Involvement T2 x AR Involvement T2	PR Involvement T1 x AR Involvement T1	0.34 [0.23, 0.45] *
AR Involvement^2 T2	AR Involvement^2 T1	0.09 [0.00, 0.18]
AR Involvement T2	AR Involvement T1	0.38 [0.29, 0.47] *
AR Involvement T2	PR Involvement T2	0.09 [-0.02, 0.20]
AR Involvement T2	PR Involvement^2 T2	-0.06 [-0.14, 0.01]
AR Involvement T2	Peer Deviance T1 x PR Involvement T2	-0.02 [-0.11, 0.08]
AR Involvement T2	Peer Deviance^2 T1	0.04 [-0.04, 0.12]
AR Involvement T2	Peer Deviance T1	-0.06 [-0.20, 0.07]
Peer Deviance T2	Peer Deviance T1	0.25 [0.17, 0.34] *
Peer Deviance T2	PR Involvement T1	-0.05 [-0.16, 0.07]
Peer Deviance T2	PR Involvement^2 T1	0.02 [-0.05, 0.10]
Peer Deviance T2	PR Involvement T1 x AR Involvement T1	0.00 [-0.10, 0.10]
Peer Deviance T2	AR Involvement^2 T1	-0.03 [-0.10, 0.05]
Peer Deviance T2	AR Involvement T1	-0.05 [-0.15, 0.05]
Physical Aggression T3	PR Involvement T2	-0.05 [-0.16, 0.05]
Physical Aggression T3	PR Involvement^2 T2	0.08 [0.00, 0.16] *
Physical Aggression T3	PR Involvement T2 x AR Involvement T2	-0.02 [-0.11, 0.07]
Physical Aggression T3	AR Involvement^2 T2	-0.02 [-0.09, 0.06]
Physical Aggression T3	AR Involvement T2	0.00 [-0.09, 0.09]
Physical Aggression T3	Peer Deviance T2	0.32 [0.24, 0.41] *
Relational Aggression T3	PR Involvement T2	0.00 [-0.08, 0.08]
Relational Aggression T3	PR Involvement^2 T2	0.05 [-0.01, 0.11]

Table 12 continues

Table 12 continued		
Relational Aggression T3	PR Involvement T2 x AR Involvement T2	-0.07 [-0.14, 0.00] *
Relational Aggression T3	AR Involvement^2 T2	-0.01 [-0.07, 0.05]
Relational Aggression T3	AR Involvement T2	-0.02 [-0.09, 0.05]
Relational Aggression T3	Peer Deviance T2	0.17 [0.11, 0.24] *
Substance Use T3	PR Involvement T2	-0.18 [-0.29, -0.07] *
Substance Use T3	PR Involvement^2 T2	-0.06 [-0.15, 0.03]
Substance Use T3	PR Involvement T2 x AR Involvement T2	0.01 [-0.08, 0.10]
Substance Use T3	AR Involvement^2 T2	0.11 [0.04, 0.18] *
Substance Use T3	AR Involvement T2	0.00 [-0.09, 0.09]
Substance Use T3	Peer Deviance T2	0.29 [0.21, 0.37] *
Delinquency T3	PR Involvement T2	-0.08 [-0.15, -0.01] *
Delinquency T3	PR Involvement^2 T2	0.06 [0.00, 0.11] *
Delinquency T3	PR Involvement T2 x AR Involvement T2	-0.04 [-0.10, 0.02]
Delinquency T3	AR Involvement^2 T2	0.05 [0.01, 0.10] *
Delinquency T3	AR Involvement T2	-0.01 [-0.07, 0.05]
Delinquency T3	Peer Deviance T2	0.18 [0.13, 0.24] *

Abbreviations. AR = adolescent-reported; PR = parent-reported; T1 = beginning of sixth grade; T2 = end of seventh grade; T3 = end of eighth grade. * $p < .05$

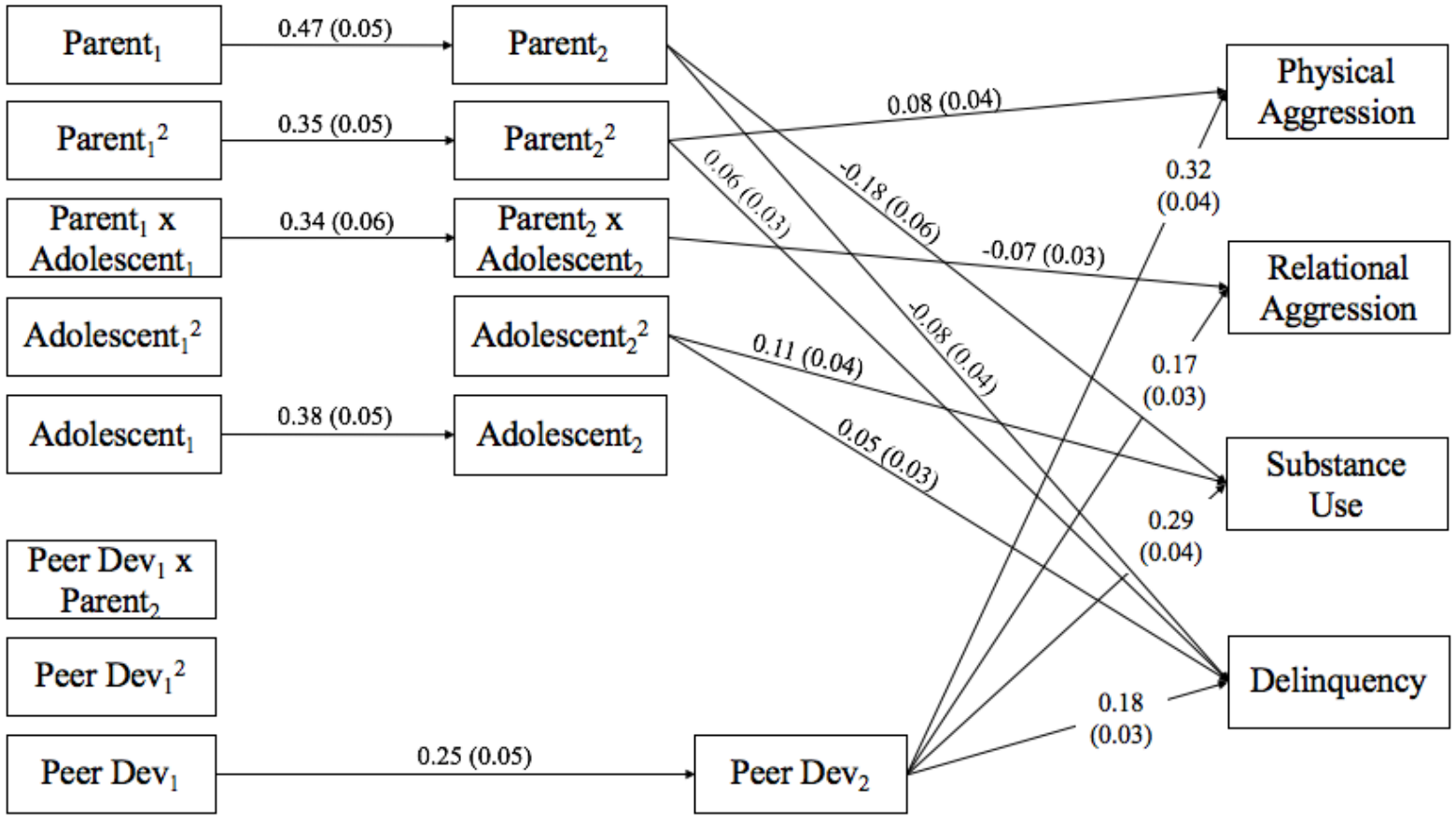

Figure 4. Cross-lagged model examining the contributions of parent-adolescent reporting discrepancies for parental involvement and peer deviance to adolescent problem behavior. Subscripts represent the assessment time (1 = beginning of sixth grade, 2 = end of seventh grade). Parameter estimates were constrained to be equal across male and female adolescents. Standardized regression coefficients and standard errors are shown for each path. Only statistically significant paths ($p < .05$) are included.

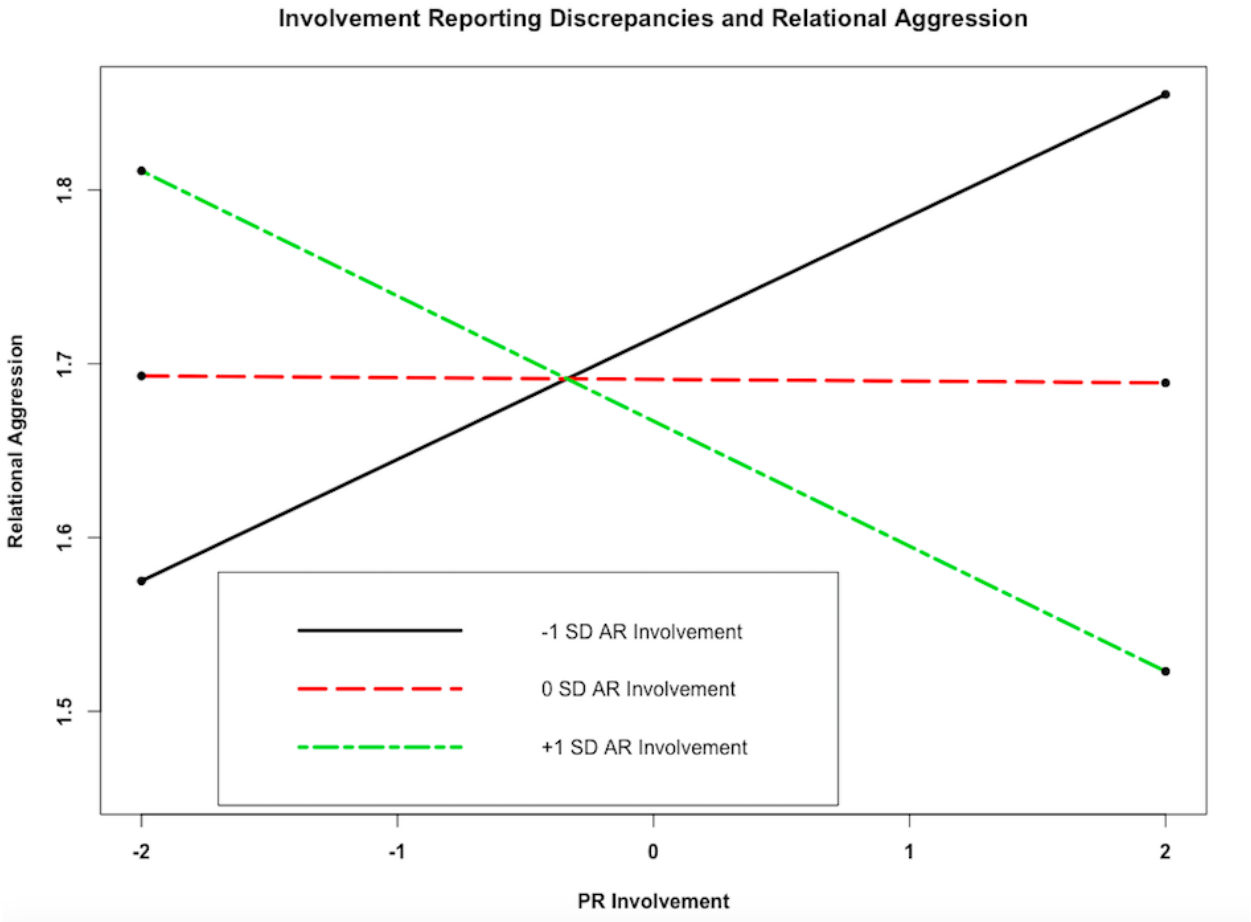

Figure 5. Interaction effect of parent- and adolescent-reported involvement on relational aggression. AR = adolescent-reported; PR = parent-reported; SD = standard deviation.

Positive parenting. For positive parenting, when regression coefficients were constrained to be equal across male and female participants, model fit did not significantly differ from the freely constrained model, $\Delta\chi^2(130) = 147.84$, $p = .14$. The results for the constrained model are shown in Table 13 and Figure 6. Peer deviance at the beginning of sixth grade was negatively associated with adolescent-reported positive parenting at the end of seventh grade but did not prospectively predict parent-adolescent reporting discrepancies, as indicated by the non-significant interaction effect of peer deviance and parent-reported positive parenting on adolescent-reported positive parenting. Consistent with the models of monitoring-related communication and involvement, adolescents who reported higher levels of peer deviance at the end of seventh grade also demonstrated higher levels of physical aggression, relational aggression, substance use, and delinquency at the end of eighth grade.

The quadratic term for parent-reported positive parenting was significantly associated with physical aggression, relational aggression, and delinquency, and the quadratic term for adolescent-reported positive parenting was related to adolescent substance use. However, there were no significant linear effects of parent- or adolescent-reported positive parenting, and parent-adolescent reporting discrepancies were not related to adolescent problem behavior. In total, the model accounted for 19.9% of the variance in physical aggression, 14.3% of the variance in relational aggression, 19.8% of the variance in substance use, and 18.5% of the variance in delinquency among male adolescents. Among female adolescents, the model accounted for 21.5% of the variance in physical aggression, 12.7% of the variance in relational aggression, 16.6% of the variance in substance use, and 21.4% of the variance in delinquency.

Table 13.

Regression coefficients for model of positive parenting.

Outcome	Predictor	β [95% CI]
PR Pos. Parenting T2	PR Pos. Parenting T1	0.45 [0.36, 0.54] *
PR Pos. Parenting^2 T2	PR Pos. Parenting^2 T1	0.10 [0.01, 0.19] *
PR Pos. Parenting T2 x AR Pos. Parenting T2	PR Pos. Parenting T1 x AR Pos. Parenting T1	0.15 [0.05, 0.24] *
AR Pos. Parenting^2 T2	AR Pos. Parenting^2 T1	0.20 [0.13, 0.27] *
AR Pos. Parenting T2	AR Pos. Parenting T1	0.43 [0.34, 0.51] *
AR Pos. Parenting T2	PR Pos. Parenting T2	0.10 [0.01, 0.20] *
AR Pos. Parenting T2	PR Pos. Parenting^2 T2	-0.06 [-0.15, 0.02]
AR Pos. Parenting T2	Peer Deviance T1 x PR Pos. Parenting T2	-0.02 [-0.11, 0.07]
AR Pos. Parenting T2	Peer Deviance^2 T1	0.10 [0.02, 0.17] *
AR Pos. Parenting T2	Peer Deviance T1	-0.17 [-0.31, -0.04] *
Peer Deviance T2	Peer Deviance T1	0.26 [0.18, 0.35] *
Peer Deviance T2	PR Pos. Parenting T1	-0.03 [-0.13, 0.07]
Peer Deviance T2	PR Pos. Parenting^2 T1	0.01 [-0.06, 0.09]
Peer Deviance T2	PR Pos. Parenting T1 x AR Pos. Parenting T1	-0.02 [-0.11, 0.08]
Peer Deviance T2	AR Pos. Parenting^2 T1	0.00 [-0.07, 0.08]
Peer Deviance T2	AR Pos. Parenting T1	-0.04 [-0.14, 0.07]
Physical Aggression T3	PR Pos. Parenting T2	0.04 [-0.06, 0.13]
Physical Aggression T3	PR Pos. Parenting^2 T2	0.12 [0.03, 0.20] *
Physical Aggression T3	PR Pos. Parenting T2 x AR Pos. Parenting T2	-0.01 [-0.10, 0.08]
Physical Aggression T3	AR Pos. Parenting^2 T2	0.03 [-0.05, 0.11]
Physical Aggression T3	AR Pos. Parenting T2	-0.02 [-0.11, 0.07]
Physical Aggression T3	Peer Deviance T2	0.34 [0.25, 0.42] *
Relational Aggression T3	PR Pos. Parenting T2	0.03 [-0.04, 0.10]
Relational Aggression T3	PR Pos. Parenting^2 T2	0.09 [0.02, 0.16] *

Table 13 continues

Table 13 continued		
Relational Aggression T3	PR Pos. Parenting T2 x AR Pos. Parenting T2	0.03 [-0.05, 0.10]
Relational Aggression T3	AR Pos. Parenting^2 T2	0.01 [-0.05, 0.07]
Relational Aggression T3	AR Pos. Parenting T2	-0.06 [-0.13, 0.01]
Relational Aggression T3	Peer Deviance T2	0.17 [0.11, 0.24] *
Substance Use T3	PR Pos. Parenting T2	-0.04 [-0.14, 0.05]
Substance Use T3	PR Pos. Parenting^2 T2	0.07 [-0.03, 0.17]
Substance Use T3	PR Pos. Parenting T2 x AR Pos. Parenting T2	-0.07 [-0.16, 0.03]
Substance Use T3	AR Pos. Parenting^2 T2	0.09 [0.01, 0.17] *
Substance Use T3	AR Pos. Parenting T2	-0.03 [-0.12, 0.06]
Substance Use T3	Peer Deviance T2	0.31 [0.23, 0.38] *
Delinquency T3	PR Pos. Parenting T2	0.05 [-0.02, 0.11]
Delinquency T3	PR Pos. Parenting^2 T2	0.10 [0.05, 0.16] *
Delinquency T3	PR Pos. Parenting T2 x AR Pos. Parenting T2	0.02 [-0.04, 0.09]
Delinquency T3	AR Pos. Parenting^2 T2	0.04 [-0.01, 0.10]
Delinquency T3	AR Pos. Parenting T2	-0.02 [-0.08, 0.04]
Delinquency T3	Peer Deviance T2	0.20 [0.15, 0.26] *

Abbreviations. AR = adolescent-reported; PR = parent-reported; Pos. = positive; T1 = beginning of sixth grade; T2 = end of seventh grade; T3 = end of eighth grade. * $p < .05$

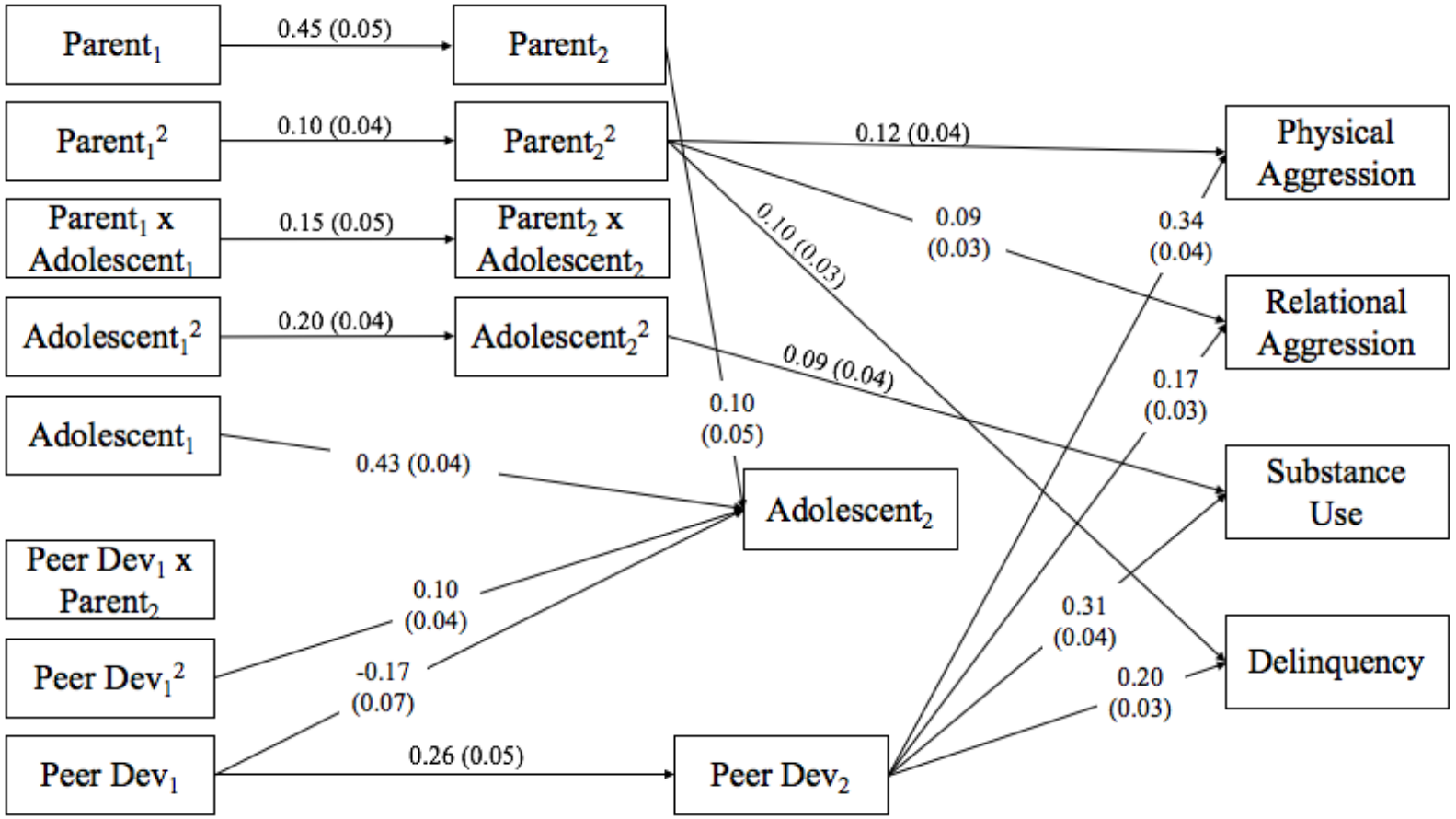

Figure 6. Cross-lagged model examining the contributions of parent-adolescent reporting discrepancies for positive parenting and peer deviance to adolescent problem behavior. Subscripts represent the assessment time (1 = beginning of sixth grade, 2 = end of seventh grade). Parameter estimates were constrained to be equal across male and female adolescents. Standardized regression coefficients and standard errors are shown for each path. Only statistically significant paths ($p < .05$) are included.

Discussion

The purpose of the present study was to examine the process by which discrepant parent-adolescent reports of parenting practices and affiliations with deviant peers mutually influence one another and impact the development of physical aggression, relational aggression, substance use, and delinquent behavior across middle school. Contrary to expectations, no significant cross-lagged associations were observed between peer deviance and parent-adolescent reporting discrepancies for monitoring-related communication, involvement, and positive parenting, and discrepant parent-adolescent reports were not related to adolescent physical aggression, delinquency, or substance use. However, parent-adolescent reporting discrepancies for involvement were associated with relational aggression at the end of eighth grade, such that adolescents who reported lower levels of involvement than their parent demonstrated higher levels of relational aggression. Further, adolescents who affiliated with a more deviant peer group exhibited higher levels of physical aggression, relational aggression, substance use, and delinquent behavior across all models tested.

The present study contributes to the literature on parent-adolescent reporting discrepancies and adolescent psychosocial functioning in several ways. First, the analyses focused on adolescents who were identified as both prone to aggression and socially influential by their teachers at the beginning of sixth grade. These popular, aggressive students are considered at-risk for violence and have the ability to exert substantial influence within an aggressive peer group, emphasizing the importance of understanding and preventing the development of problem behavior within this population. Second, though discrepant parent-adolescent reports of parental warmth (Feinberg et al., 2000; Hou et al., 2018; Maurizi et al., 2012) and monitoring (De Los Reyes et al., 2010; Hou et al., 2018; Ksinan & Vazsonyi, 2016; Rote & Smetana, 2016) have been examined in prior work, the influence of parent-adolescent

reporting discrepancies for involvement has not been tested. Lastly, the present study incorporates polynomial regression approaches for testing associations with parent-adolescent reporting discrepancies (Laird & De Los Reyes, 2013; Laird & LaFleur, 2016) within an autoregressive cross-lagged model, which provides unique insights into the processes by which discrepant reports of parenting practices and peer deviance influence one another over time.

Relations between Parent and Adolescent Reports of Parenting Practices

Consistent with the robust literature on discrepancies between parent and child reports of parental behavior (De Los Reyes & Ohannessian, 2016), parent and adolescent reports of monitoring-related communication, involvement, and positive parenting were only modestly correlated, with correlation coefficients ranging from 0.15 to 0.24. Parents' average scores for levels of communication, involvement, and positive parenting were higher when compared to their adolescent children. These systematic generational discrepancies provide support for the developmental stake hypothesis (Bengtson & Kuypers, 1971; Korelitz & Garber, 2016), which proposes that the developmental stakes of parents and their adolescent children are at odds with one another and produce higher parent reports of relationship quality relative to adolescent reports. Yet, parent-adolescent dyads did vary in the extent to which they provided discrepant reports of parenting practices in the present study, and these within-dyad reporting discrepancies may provide meaningful information about features of the parent-adolescent relationship.

In addition to evaluating parent-adolescent reporting discrepancies within the full sample, correlations among parent- and adolescent-reported parenting practices, peer deviance, and adolescent problem behavior were examined separately for male and female participants to explore potential gender differences and inform the primary research findings. The range of the correlations between parent and adolescent reports of monitoring-related communication, involvement, and positive parenting were strikingly similar across adolescent boys and girls,

spanning 0.15 to 0.26 within each group. However, different patterns of associations were observed between parenting practices and adolescent problem behavior by adolescent sex. For adolescent boys, substance use was significantly correlated with all three dimensions of parenting (monitoring-related communication, involvement, and positive parenting). For adolescent girls, substance use was correlated with positive parenting and involvement only. This is consistent with previous work demonstrating that substance use among female adolescents is primarily influenced by warm and affectionate parenting practices (Cutrín et al., 2017).

In addition, adolescent-reported involvement and positive parenting were significantly correlated with physical aggression among adolescent girls, whereas, for adolescent boys, physical aggression was related to parent-reported involvement only. This pattern of correlations raises the possibility that girls' perceptions of parenting are more closely related to their self-reported aggressive behavior, whereas parents' perceived involvement is particularly important for reducing physical aggression among boys. Further, for female participants, parenting practices were similarly related to relational and physical aggression, such that adolescent-reported involvement and positive parenting were negatively related to relationally aggressive behaviors. On the other hand, relational aggression was unrelated to parenting practices for male participants. Relational aggression may be more prevalent among girls, particularly in the late elementary school years (Kistner et al., 2010), and psychologically controlling parenting is more closely related to relational aggression for girls than for boys (Kawabata et al., 2011). Though a meta-analytic review of the relationship between parenting practices and relational aggression concluded that parental warmth and involvement were similarly associated with relational aggression across boys and girls, studies examined relational aggression from early childhood through late adolescence (Kawabata et al., 2011). The current analyses were limited to early

adolescence, which may explain the non-significant correlations among communication, involvement, positive parenting, and relational aggression observed for adolescent boys.

Finally, a comparison of differential regression paths by adolescent sex supported an unconstrained model where path coefficients varied across male and female participants for monitoring-related communication. Thus, separate models were reported for boys and girls with two important differences noted. First, parent-reported monitoring-related communication and parent-adolescent reporting discrepancies appeared to be more stable for adolescent girls when compared to adolescent boys, as evidenced by larger autoregressive path coefficients. Second, substance use was related to parent perceptions of monitoring-related communication for girls but was related to adolescent perceptions of monitoring-related communication for boys. This finding suggests that adolescent boys are particularly influenced by their perception of parental monitoring, whereas active parental efforts to monitor may be particularly relevant for adolescent girls. The interaction between reporter identity, perceived levels of monitoring, adolescent sex, and levels of substance use remains relatively unexplored in the literature and may be an avenue for further study.

Cross-Lagged Associations Between Reporting Discrepancies and Peer Deviance

It was hypothesized that adolescents who reported lower levels of monitoring, involvement, and positive parenting relative to their parents would affiliate with a more deviant peer group, and, in turn, affiliation with deviant peers would be related to greater discrepancies between parent and adolescent reports. Contrary to expectations, no significant cross-lagged associations were observed between parent-adolescent reporting discrepancies and peer deviance. A robust body of literature demonstrates that familial and peer contexts influence one another: parent-child interactions provide a foundation for the ways in which adolescents approach peer interactions, either promoting or inhibiting their social competence (Dishion &

Snyder, 2016; Minnesota Symposium on Child Psychology et al., 1999; Sroufe et al., 2000). Conversely, negative peer interactions and peer delinquency are related to lower levels of parental knowledge and more negative parent-child interactions (Reich & Vandell, 2014). Bidirectional relations between parenting practices and peer interactions are also explicitly addressed within Dishion et al.'s (2004) conceptualization of premature adolescent autonomy: this framework suggests that, among adolescents who are prone to aggressive behavior, frequent parent-child conflict may give rise to a bidirectional distancing process comprised of parental disengagement and adolescents' increased engagement with the peer group.

There are several potential explanations for the non-significant relationship between discrepant parent-adolescent reports of parenting practices and peer deviance in the present study. First, non-significant cross-lagged associations may be attributable to assessment timing, as measures of parenting practices and peer deviance were drawn from assessments conducted at the beginning of sixth grade and the end of seventh grade. To address the possibility that the substantial interval of time between Time 1 and Time 2 assessments contributed to the pattern of results, I conducted two sets of post-hoc analyses. First, I included the assessment conducted at the end of sixth grade as Time 1, and the assessment at the end of seventh grade remained as Time 2. Second, I included the assessment conducted at the beginning of sixth grade as Time 1 and the assessment at the end of sixth grade as Time 2. A consistent pattern of non-significant cross-lagged associations was observed in these analyses, indicating that the pattern of associations between discrepant parent-adolescent reports of and peer deviance do not appear to be attributable to assessment timing.

A second possible explanation is that parent-adolescent reporting discrepancies of monitoring-related communication, involvement, and positive parenting do not accurately reflect the development of premature adolescent autonomy and subsequent deterioration of parent-

adolescent communication. The assumption that parent-adolescent reporting discrepancies represent bidirectional distancing between parents and their adolescent children was grounded in the DiVIDE framework, which proposes that positive features of the parent-child relationship promote parent-adolescent communication and, in turn, yield fewer reporting discrepancies (Goodman et al., 2010). The DiVIDE framework has received empirical support (Dotterer & Day, 2019; Ksinan & Vazsonyi, 2016) and appeared to be reasonable justification for the assumption that parent-adolescent reporting discrepancies reflect the development of premature adolescent autonomy, particularly within a sample of adolescents who have been identified as having aggressive tendencies. Yet, it is conceivable that this assumption was violated.

Third, premature adolescent autonomy identifies increased **engagement** with peers as one component of the bidirectional distancing process but does not necessarily require affiliation with **deviant** peers. Dishion and Snyder (2016) and Snyder et al. (2008) propose that, particularly for adolescents who are both aggressive and influential among their peers, premature adolescent autonomy facilitates the opportunity to selectively affiliate with a deviant peer group and engage in positive reinforcement of antisocial behavior. However, it is plausible that a stronger relationship would have been observed between discrepant reports of parenting practices and engagement with peers versus between discrepant reports of parenting practices and peer deviancy, which was the focus of the present analyses.

Another possibility is that teacher nominations of social influence did not entirely align with peer perceptions of social status, and some participants were not considered “popular” by their peers. Consistent with this view, adolescents in the present study experienced more frequent peer victimization than anticipated for a sample of socially influential students. On average, participants had experienced one or two instances of overt victimization within the past month (M = 2.07, SD = 1.08) and had also experienced relational victimization one or two times within

the past month (M = 1.88, SD = 1.00). Overt (r = 0.24, $t(501) = 5.60$, $p < .001$) and relational victimization (r = 0.18, $t(501) = 4.17$, $p < .001$) were also significantly correlated with peer deviancy. Though it was presumed that adolescents in the present study were socially influential and may choose to affiliate with deviant peers, a significant correlation between peer deviance and peer victimization suggests that, for some adolescents in the sample, affiliation with deviant peers resulted from rejection by the normative peer group.

Yet, levels of peer deviancy were low in the current study, raising the intriguing possibility that adolescents who demonstrate high levels of aggression and social influence do not commonly affiliate with a deviant peer group. At the beginning of sixth grade, only 64 adolescents, or 12.7% of the sample, indicated that at least "very few" of their friends had engaged in delinquent activities within the past few months. By the end of seventh grade, this figure increased to 84 adolescents, or 18% of those who participated in the follow-up assessment. Notably, the measure of peer deviance used in the present study primarily focused on antisocial behavior (e.g., stealing, truancy), and items related to aggression were characterized by a high level of severity (e.g., attacking someone with a weapon, participating in a gang fight). Prior studies of popular, aggressive adolescents indicate that adolescents tend to affiliate with peers with a similar level of aggression (Sijtsema et al., 2010). Thus, adolescents who are both aggressive and socially influential may affiliate with peers who demonstrate high levels of aggressive behavior but not necessarily high levels of antisocial behavior. It will be important for future studies to examine the relations between discrepant parent-adolescent reports of parenting practices and affiliation with a physically and/or relationally aggressive peer group.

A final potential explanation for the non-significant cross-lagged associations between parent-adolescent reporting discrepancies and peer deviance observed in the present study is that parenting practices and deviant peer affiliations are related to one another, but they are part of a

system of correlated risks that is relatively stable across middle school. Farmer and Farmer (2001) posit that developmental factors, including parenting strategies, relationships with peers, community-level factors, and features of the school context, tend to become a system of correlated constraints that promote stability in behavior (Farmer & Farmer, 2001). Stability in correlated constraints – in this case, the relations between parenting and peer affiliations – across middle school is inconsistent with the view of early adolescence as a period of increasing autonomy, heightened peer influence, and changing societal expectations that require flexibility in parent-child interactions (Branje, 2018; Furman & Shaffer, 2003; Lerner, 2004). Yet, measures of parenting and peer deviance were significantly correlated within time points and were relatively stable over time, as indicated by sizeable autoregressive path coefficients across models of monitoring-related communication, involvement, and positive parenting. Thus, it is possible that the relations between parenting practices and peer deviance were stabilized before the transition to middle school and, within a sample of adolescents with aggressive tendencies, simply acted to promote stability in behavior.

Reporting Discrepancies, Physical Aggression, Substance Use, and Delinquency

In addition to evaluating the bidirectional associations between discrepant parent-adolescent reports of parenting practices and peer deviance, a second aim of the present study was to test the contributions of parent-adolescent reporting discrepancies and peer deviance to physical aggression, relational aggression, substance use, and delinquency. In contrast with the study hypotheses, discrepant parent-adolescent reports of monitoring-related communication, involvement, and positive parenting were unrelated to physical aggression, substance use, and delinquency. Prior studies have shown that adolescents who report lower maternal right to know and maternal knowledge relative to their mothers exhibit higher levels of problem behavior (Rote & Smetana, 2016); discrepant reports of parental reactions toward adolescent anger are related to

aggression (Dimler et al., 2017); adolescents who report higher levels of secrecy and lower levels of communication relative to their parents engage in higher levels of substance use (Kliewer et al., 2018; Ohannessian, 2012); and parent-adolescent reporting discrepancies for parental monitoring are prospectively associated with delinquent behavior (De Los Reyes et al., 2010; Ksinan & Vazsonyi, 2016). Thus, a pattern of non-significant relations between discrepant parent-adolescent views of parenting practices and physical aggression, substance use, and delinquency was unexpected and contrasts with a robust body of literature on the associations between parent-adolescent reporting discrepancies and adolescent psychosocial functioning.

Several features of the present study are distinctive from prior work and may contribute to the dissimilar patterns of results. Participants in the present study were selected according to very specific eligibility criteria and represent a narrow sub-population of adolescents: those who demonstrate aggressive tendencies and are also influential among their peers. Thus, discrepant parent-adolescent perspectives on their relationship may operate differently among popular, aggressive adolescents when compared to adolescents more broadly. In addition, measures of parenting practices administered in the present study contrast with those used in prior work. Importantly, the magnitude of reporting discrepancies varies according to the objectivity of the question, the extent to which response options are socially (un)desirable, the referent of the question, and the extent to which behaviors occur in a shared versus non-shared context between parents and children (Jessop, 1982). Measures of parenting practices in the present study focused on the frequency of particular behaviors, which is relatively objective and may induce fewer socially desirable responses. Further, all items referred to specific interactions between parents and children that occurred entirely in a shared context. Questions related to monitoring-related communication asked how often parents and adolescents engaged in conversation; questions related to involvement referred to how often parents and their adolescent participated in shared

activities; and questions related to positive parenting asked how often the parent engaged in affectionate behaviors, such as smiling or giving their child a reward.

By contrast, prior studies have assessed potentially more subjective features of parent-child interactions. For example, Rote and Smetana (2016) assessed maternal knowledge by asking "how much" mothers know about specific activities, including which websites the adolescent visits, and positive parenting was measured using items such as "how much does your mother like or love you?" Such assessments of maternal knowledge or parental monitoring encompass behaviors that occur in a shared context (e.g., adolescent disclosure) and behaviors that occur in a non-shared context (e.g., parental efforts to gather information on their child's whereabouts from other adults). Further, social desirability may be more salient when reporting on how much a mother loves her child versus on the frequency of specific displays of affection. As a result, non-significant associations of parent-adolescent reporting discrepancies with physical aggression, substance use, and delinquency may have been attributable to the nature of the questions assessing parenting practices in the present study versus in previous work.

Parent-Adolescent Reporting Discrepancies and Relational Aggression

On the other hand, discrepant parent-adolescent views of involvement were significantly related to relational aggression in the present study, providing partial support for the study hypotheses. Specifically, when adolescents reported lower levels of involvement relative to their parent, adolescents exhibited higher levels of relational aggression. When adolescents and their parents both reported high levels of involvement, adolescents showed particularly low levels of relational aggression. This finding is consistent with prior work demonstrating that parental involvement is associated with lower levels of relational aggression for both adolescent boys and girls (Kawabata et al., 2011). Further, the nature of the relationship between discrepant views of involvement and relational aggression provides support for the maladaptive hypothesis, which

proposes that discrepant parent-adolescent perspectives on their relationship stem from low relationship quality, high conflict, or poor communication and contribute to the development of adolescent problem behavior (De Los Reyes & Ohannessian, 2016).

Prior studies have not examined discrepant parent-adolescent perspectives for involvement nor assessed relational aggression as an outcome variable. Thus, it was unanticipated that parent-adolescent reporting discrepancies for involvement would emerge as the only significant predictor of adolescent problem behavior in the present study. Parent and adolescent reports of involvement differed from monitoring-related communication and positive parenting in that parent and adolescent reports were more highly correlated, fewer discrepancies between reporters were observed, and reporting discrepancies were more stable over time. Items related to involvement were also more concrete, referring to how much time the parent and adolescent spend on specific activities. Therefore, discrepant parent-adolescent views of involvement may be considered less normative than discrepant views of monitoring-related communication and positive parenting, contributing to the significant association between parent-adolescent reporting discrepancies for involvement and relational aggression.

Yet, because the items related to involvement are relatively concrete, the meaning of discrepant parent-adolescent perspectives and the interpretation of their association with problem behavior are important to consider. One possibility is that discrepant parent-adolescent views of involvement stem from differing perceptions on what constitutes a "shared activity." Adolescents who are prone to relational aggression may interpret conversations or interactions with parents as insignificant, leading to underreporting of involvement. Another possibility is, given that adolescents who demonstrate high levels of relational aggression also tend to be socially savvy and achieve high social centrality (Hoff et al., 2009), adolescents who engage in relational aggression can successfully decrease their familial involvement while escaping the parent's

notice. However, these interpretations are speculative and must be examined empirically before any conclusions can be drawn.

Peer Deviance and Adolescent Problem Behavior

Finally, in agreement with the study hypotheses, peer deviance was positively associated with physical aggression, relational aggression, substance use, and delinquency across all models tested. Affiliation with deviant peers has been identified as a robust predictor of aggression, substance use, and delinquent behavior within the literature (Dishion & Snyder, 2016; Merrin et al., 2019; Van Ryzin et al., 2012). Among adolescents who are prone to aggression, the relationship between peer deviance and escalation of problem behavior may be attributable to deviancy training, in which deviant peers positively reinforce antisocial behavior by giving attention, laughing, or praising deviant talk and activities (Dishion & Snyder, 2016). A deviant peer group often provides a context in which aggression, substance use, and delinquency are valued, thereby promoting higher levels of problem behavior.

Limitations

The present study had a number of strengths, including the use of a polynomial regression approach (Laird & De Los Reyes, 2013; Laird & LaFleur, 2016) and assessment of a range of adolescent problem behaviors. However, the results should be considered in light of several limitations. First, adolescents were selected for participation in the current study if they were identified as both highly aggressive and socially influential by their teachers. Teachers have a different perspective on leadership and social prominence than peers, and teacher perceptions of social influence may not fully align with likeability or popularity. Thus, it may be important for future work to incorporate peer nominations of aggressive behavior and popularity to ensure that the sample accurately represents the typology of popular, aggressive adolescents.

Second, the prevalence of peer deviance was particularly low in the present study, potentially due to the severity of deviant behaviors that were assessed (e.g., attacking someone with a weapon, stealing a car). In addition, items related to peer deviance examined the number of deviant peers but did not assess the adolescent's engagement or perceived closeness with that peer group. Measures of both the nature of peer group affiliations and level of engagement with peers may have more accurately represented the propositions of premature adolescent autonomy.

A third limitation is that the measure of monitoring-related communication did not distinguish between parental solicitation and child disclosure of their activities. Two items asked about the "last time you talked to a parent," implying that the adolescent initiated the conversation, and two items asked about "how often a parent talks to you," indicating that the parent initiated the conversation. Adolescent disclosure appears to be the primary source of parental knowledge (Racz & McMahon, 2011; Stattin & Kerr, 2000); further, discrepant parent-adolescent reports of adolescent disclosure may be particularly relevant for adolescent problem behavior, as a parent who overestimates their child's level of disclosure may be less likely to actively monitor their child's activities. Thus, the combined assessment of parental solicitation and child disclosure in the present study may complicate the interpretation of results and contribute to the non-significant associations observed between discrepant reports of monitoring-related communication and adolescent outcomes.

Fourth, participants in the present study represent a subset of adolescents who demonstrate high levels of aggression and are influential among peers. It is important to understand the development of problem behavior within this population of adolescents, particularly given their social status and potential influence within an aggressive peer group. However, the unique nature of the sample may also limit the generalizability of the results.

Finally, the present analyses were limited in their account of the interrelated nature of parenting practices and would be strengthened by an increased focus on cultural and contextual influences on parenting. The robust literature on parenting styles (Baumrind, 1991) highlights the importance of examining the balance between parental demandingness and responsiveness to their child's needs. Though person-based analyses have generally concluded that parents and their adolescent children tend to demonstrate a similar pattern of reporting discrepancies across parenting constructs (Hou et al., 2018; Rote & Smetana, 2016), it remains plausible that distinct combinations of reporting discrepancies for parenting practices are differentially related to adolescent psychosocial functioning. Moreover, the prevalence and implications of parenting behaviors often differ across racial/ethnic groups, with qualitatively different combinations of demandingness and responsiveness leading to more beneficial adolescent outcomes based on cultural and contextual considerations (e.g., Clark et al., 2015). Community- and neighborhood-level factors also impact parenting behavior, with, for instance, parents who live in high-burden neighborhoods engaging in higher levels of control with their adolescent children as a protective mechanism (Zuberi, 2013). Thus, it will be important for future studies to assess whether cultural and contextual factors contribute to the development of parent-adolescent reporting discrepancies, as well as how these factors may moderate the association between discrepant parent-adolescent reports of parenting practices and adolescent problem behavior.

Summary, Implications, and Future Directions

In summary, the present study tested the associations between discrepant parent-adolescent views of monitoring-related communication, involvement, and positive parenting; peer deviancy; and adolescent physical aggression, relational aggression, substance use, and delinquency. Consistent with the existing literature on parent and adolescent views of their relationship (De Los Reyes & Ohannessian, 2016; Korelitz & Garber, 2016), only modest

correspondence was observed between parent and adolescent reports, and parents, on average, reported a more positive view of parenting practices than their adolescent children. Further, adolescents who perceived lower levels of involvement relative to their parent exhibited higher levels of relational aggression, which provides support for the hypothesis that parent-adolescent reporting discrepancies reflect maladaptive family processes and contribute to adolescent problem behavior (De Los Reyes & Ohannessian, 2016). However, given that discrepant reports of involvement and associations of parent-adolescent reporting discrepancies with relational aggression have not been previously examined, further work is needed to replicate these findings and explore the mechanism by which parents and adolescents develop discrepant views of their shared activities and level of involvement in the family.

In contrast with the study hypotheses and with prior work on parent-adolescent reporting discrepancies (Dimler et al., 2017; Hou et al., 2018; Kliewer et al., 2018; Ksinan & Vazsonyi, 2016; Ohannessian, 2012; Rote & Smetana, 2016), parent-adolescent reporting discrepancies for monitoring-related communication, involvement, and positive parenting were not related to adolescent physical aggression, substance use, or delinquency. Divergence between the existing literature and the findings of the present study may be attributable to the unique nature of the sample or to differences in the measurement of parenting practices. Items in the present study referred to the frequency of behaviors that occur in a shared context between parents and children, whereas prior studies have examined more subjective features of the parent-child relationship or assessed behaviors that occur in both a shared and non-shared context (Ksinan & Vazsonyi, 2016; Rote & Smetana, 2016). Further work on the relationship between discrepant views of parenting practices and adolescent problem behavior among popular, aggressive adolescents is needed to distinguish whether the meaning of parent-adolescent reporting

discrepancies differs within this sub-population, or whether methodological considerations contributed to the non-significant associations observed in the present study.

Relatedly, given that discrepant parent-adolescent reports of involvement have not been examined in previous work, it will be important for future studies to evaluate how the methods of assessing involvement may impact the meaning and consequences of parent-adolescent reporting discrepancies. A study conducted by Trost et al. (2007) highlights one important dimension of parental involvement that should be further explored within the reporting discrepancy literature. In this study, researchers conducted a cluster analysis of adolescents' desires for parental involvement in their free time activities and how much adolescents perceived that their parents wanted to be involved. They identified one cluster in which adolescents desired a low level of involvement but perceived their parents as desiring high levels of involvement; these youths were at particular risk for problem behavior and reported greater family problems (Trost et al., 2007). Thus, discrepant parent and adolescent *expectations* for involvement may be more relevant to adolescent problem behavior than parent-adolescent reporting discrepancies for *frequency* of involvement; this potential distinction should be addressed in future work.

Finally, peer deviance was positively associated with physical aggression, relational aggression, substance use, and delinquency, highlighting peer deviance as a target for intervention efforts to reduce violent and problem behavior. However, it is important to note that parenting practices and parent-adolescent reporting discrepancies may remain relevant for intervention efforts. One intriguing possibility that emerged from the present study is that relations between parenting practices and peer deviance are relatively stable across the middle school transition and may form a system of correlated constraints that promote stability in problem behavior among adolescents who are both popular and demonstrate high levels of aggression. Yet, correlated constraints do not just encompass parenting and peer relations but

also include individual attributes, features of the family system, school characteristics, and community-level factors. To provide further insight into intervention efforts, it is imperative to gain a comprehensive understanding of how these developmental factors relate to one another among adolescents who are both prone to aggression and socially influential. By doing so, researchers may distinguish whether peer deviancy is operating primarily as a risk factor for adolescent problem behavior within the context of a system that is centered around positive factors, or whether peer deviance is part of a system of correlated risks.

As discussed by Farmer and Farmer (2001), if peer deviance is operating as a risk factor within a system of positive constraints, an intervention that aims to diminish the influence of deviant peers may prove relatively effective in reducing adolescent problem behavior. Alternatively, if peer deviancy and parenting practices are part of a system of correlated risks that is relatively stable across middle school, interventions should be directed toward preschool- or elementary-aged children and address the interrelations between parenting practices, discrepant views of the parent-adolescent relationship, and peer deviance (Farmer et al., 2007; Farmer & Farmer, 2001). Though the present study does not provide clear insight into the nature and extent of intervention efforts needed to reduce adolescent problem behavior, the findings do emphasize the need to examine the interrelations of parent-adolescent reporting discrepancies, parenting behavior, and peer deviancy across childhood and adolescence to understand the development of problem behavior and to guide the timing and nature of intervention efforts among children who are both prone to aggression and socially influential.

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