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To the Graduate Council:

I am submitting herewith a thesis written by Alden Elizabeth Gaertner entitled "Moderating effect of intimate exchange on the reciprocal relation between best friend delinquency and child externalizing behavior." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

Paula J. Fite, Major Professor

We have read this thesis and recommend its acceptance:

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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We have read this thesis
and recommend its acceptance:

Jenny Macfie

Deborah Welsh

Accepted for the Council:

Carolyn R. Hodges
Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

MODERATING EFFECT OF INTIMATE EXCHANGE ON THE RECIPROCAL RELATION
BETWEEN BEST FRIEND DELINQUENCY AND CHILD EXTERNALIZING BEHAVIOR

A Thesis
Presented for the
Master of Arts
Degree
University of Tennessee, Knoxville

Alden Elizabeth Gaertner
December 2008

Abstract

Research indicates both peer selection (choosing behaviorally similar individuals as friends) and peer socialization (mutual regulation of behavior) processes impact the development of problem behavior in childhood and adolescence. Differential association theory explains these processes by suggesting children and adolescents elect to participate in peer groups that conform to a commonly accepted set of group norms. Moreover, deviant peer groups ascribe to unconventional norms characterized by a higher proportion of pro-deviance messages learned in the context of intimate personal groups. Consistent with differential association theory, the current study examined the moderating effect of intimate exchange, or relational closeness, on the reciprocal relation between externalizing behavior (aggressive and rule breaking behavior) and best friend delinquency (rule breaking behavior). Participants included 65 children (67% male), ranging from 10-13 years of age at baseline ($M = 11.95$ years, $SD = 1.30$), and their primary caregivers. Contrary to hypotheses, peer delinquency did not predict increases in child externalizing behavior over time and intimate exchange did not moderate this effect. Moreover, intimate exchange moderated the relation between child externalizing behavior and best friend delinquency, but not in the expected direction. At high levels of intimate exchange, best friend delinquency predicted decreases in child externalizing behavior whereas at low levels of intimate exchange, best friend delinquency predicted increases in child externalizing behavior. Implications and future directions of these findings are discussed.

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I. Literature Review

Introduction

Previous research indicates an association between antisocial behavior (e.g., aggressive and delinquent behavior; (Deptula & Cohen, 2004)) and affiliation with delinquent peers (De Kemp, Scholte, Overbeek, & Engels, 2006; Deptula & Cohen, 2004; Granic & Dishion, 2003; Laird, Pettit, Dodge, & Bates, 1999, 2005; Poulin, Dishion, & Haas, 1999). Antisocial children and adolescents are likely to be rejected by their prosocial peers and subsequently elect to form friendship associations with other delinquent peers who are behaviorally similar (J. Snyder, Dishion, & Patterson, 1986). Moreover, affiliating with delinquent peers has been linked to increases in externalizing behavior over time, above and beyond prior levels of externalizing behavior (Dishion, Nelson, Winter, & Bullock, 2004; Fergusson & Horwood, 1996; Fergusson, Swain-Campbell, & Horwood, 2002; Fergusson, Vitaro, Wanner, & Brendgen, 2007). This pattern of findings suggests both selection and socialization processes impact the relation between peer delinquency and externalizing behavior, with selection describing the process by which children and adolescents choose behaviorally similar peers as friends (Kandel, 1978b) and socialization describing the process by which children and adolescents become more behaviorally similar over time (Hartup, 1995). Differential association theory attempts to explain selection and socialization effects by suggesting that children and adolescents elect to participate in peer groups that conform to a commonly accepted set of group norms. Deviant peer groups ascribe to an unconventional set of group norms that are marked by a higher proportion of pro-deviance messages, which are a product of the deviant peer group's shared interest in participating in antisocial behavior (Matsueda, 1982; Sutherland & Cressey, 1955).

Intimate Exchange, Best Friend Delinquency, and Externalizing Behavior 2

Differential association theory further suggests that learning these unconventional norms takes place in the context of intimate personal groups (Deptula et al., 2002). Friendships marked by higher levels of intimacy, or relational closeness (Sullivan, 1953), tend to have more similar interests based on their tendency to select similar individuals as friends. Furthermore, intimate friends tend to spend more time engaging in common activities with one another, allowing increased opportunity for delinquent socialization to occur (Berndt, 1996). Moreover, some research suggests that delinquent dyads, as compared to their prosocial peers, may report higher levels of intimate self-disclosure, suggesting intimate exchange may play an important role in the development of problem behavior (Giordano, Cernkovich, & Pugh, 1986; Houtzager & Baerveldt, 1999; Pleydon & Schnier, 2001). To date, however, no research has examined the moderating effect of intimate exchange on the relation between child externalizing behavior and peer delinquency. Accordingly, the current study examined the reciprocal influence of child externalizing behavior and best friend delinquency and whether best friendship intimacy moderated this relation. More specifically, this study examined whether best friend delinquency predicted increases in child externalizing behavior and whether child externalizing behavior predicted increases in best friend delinquency. Additionally, the moderating effect of best friend intimate exchange was examined.

Developmental Contributions of Friendship Quality in Childhood and Adolescence

As children age into adolescence, the role of peers becomes increasingly important (Gauze, Bukowski, Aquan-Assee, & Sippola, 1996; Hartup, 1995, 1996; Mathur & Berndt, 2006; Newcomb & Bagwell, 1998). Because of the growing importance of peers, researchers are interested in the role of peers in developmental processes. From a historical perspective, the

majority of literature regarding the role of friendships in childhood and adolescence has focused on the positive features of friendships, namely the positive contributions friends make to adjustment outcomes (Berndt, 1996, 2002, 2004, 1998; Gauze et al., 1996; Hartup, 1995, 1996; Ladd, Kochenderfer, & Coleman, 1996; Nangle, Erdley, Newman, Mason, & Carpenter, 2003). The earliest friendship theorists, Piaget and Sullivan, for example, focused almost exclusively on the positive contributions friendships make towards child and adolescent development.

Piaget's developmental theory (1965) posits that friendships are the primary source of autonomous moral development in childhood. He suggested that moral development is built through peer interactions because friendships, unlike the parent-child relationship which is characterized by dominance and submission, are the first developmental opportunity children have to participate in egalitarian social relationships. Furthermore, Piaget identified three main components of social interactions in childhood, cooperation, mutual respect, and norm reciprocity, which he believed worked together to generate an egalitarian and reciprocal view of social interaction. Through mutual respect, children learn to cooperate and effectively interact with one another. This, in turn, leads to reciprocity norms, or rules that children accept as legitimate components of social interaction. The quality of friendship in childhood, therefore, is determined by adherence to these key features of equality, which in turn result in healthy adjustment through promoting autonomy and moral development.

Sullivan (1953), like Piaget, maintained that friendships are essential in the developmental transition from childhood to early adolescence. Specifically, Sullivan ascertained that intimacy, or relational closeness, is the defining feature of friendship in childhood and early adolescence. Friendships high in intimacy and collaboration (the adjustment of behavior to meet

one another's needs) and conversely low in competition are high in quality and are instrumental in positive developmental outcomes. More specifically, Sullivan posited that positive friendship attributes contribute to the enhancement of self-esteem. Piaget and Sullivan's early work on friendship theory has extended into empirical research today, which focuses not only on the benefits of having friends in childhood and adolescence, but also the quality of these friendship relationships.

To date, friendship quality is defined in terms of a continuum of positive and negative features (Berndt, 2002, 2004, 1998). Friendships high in positive features and low in negative features are considered high in quality. Conversely, friendships low in positive features and high in negative features are considered low in quality (Berndt, 1998). Positive features of friendship include intimacy, companionship, loyalty, and pro-social behavior while negative features of friendship include conflict and competition (Berndt, 1998; Newcomb & Bagwell, 1998). In concordance with Sullivan and Piaget's theories of friendship, current research on child and adolescent friendships indicates an association between social development and the quality of friendships experienced (Berndt, 2004, 1998; Hartup, 1995; Newcomb & Bagwell, 1998). Way and Greene (2006), for example, maintain that perceptions of friendship quality continue to improve from middle to late adolescence for both males and females. Furthermore, findings suggest as peers continue to increase in social importance, adolescents exhibit a growing need for social intimacy and interpersonal collaboration. Not only are peers and friendship quality important for social interaction in childhood and adolescence, but they also contribute to adjustment outcomes as well.

A plethora of research indicates high friendship quality not only contributes to positive developmental outcomes for children and adolescents of both gender, but also may act as a potential buffer for maladaptive or potentially negative influences. Nangle et al. (2003) found that popular children who experienced high friendship quality were less likely to experience feelings of social dissatisfaction and loneliness. Popularity alone did not attenuate these feelings; rather popularity and friendship quality together appear to be important, indicating the significant contribution friendship quality makes towards positive social outcomes. Furthermore, research indicates that involvement in high quality friendships is associated with fewer internalizing symptoms such as feelings of loneliness (Parker & Asher, 1993) and trait anxiety (Fordham & Stevenson-Hinde, 1999). Moreover, children and adolescents with high quality friendships report higher self esteem (Keefe & Berndt, 1996; Thomas & Daubman, 2001), and more favorable feelings of global self worth than those with low quality friendships (Fordham & Stevenson-Hinde, 1999). Additionally, high friendship quality is associated with positive academic and social outcomes (Berndt, 1996; Berndt & Keefe, 1995; Fordham & Stevenson-Hinde, 1999; Hodges, Boivin, Vitaro, & Bukowski, 1999). For example, individuals involved in high quality friendships are more likely to be popular, socially competent, achievement motivated, involved in school, and receive higher grades (Hartup, 1995). Conversely, low friendship quality is associated with more negative behavioral and emotional outcomes such as depression, psychological and school related difficulties, low self esteem, low perceptions of academic, athletic and social competence (Hartup, 1995), feelings of loneliness (Parker & Asher, 1993), and difficult school adjustments (Ladd et al., 1996).

In sum, research indicates peer relationships, and in particular the quality of these relationships, may serve an important role in child and adolescent development. While there appears to be clear developmental benefits to being involved in high quality friendships, simply having high quality friendships may not fully account for these benefits. Research further suggests that other characteristics of friendships and the peers one chooses to identify as friends may also impact developmental outcomes in childhood and adolescence (Berndt, 2002, 2004; Berndt & Keefe, 1995; Hartup, 1995, 1996, 2005; Newcomb & Bagwell, 1998).

Delinquent Friendship: The Role of Selection and Socialization Processes

Because peers become increasingly influential for both males and females as children transition into adolescence, it is important to understand the characteristics and qualities of peers who identify one another as friends (Hartup, 1996, 2005; Newcomb & Bagwell, 1998). The majority of research on friendships in childhood and adolescence indicates that individuals who consider one another friends are more likely to be similar than those who are not friends (Aboud & Mendelson, 1998; Hartup, 1995, 1996; Hartup, French, Laursen, Johnston, & et al., 1993; Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998). For example, Aboud and Mendelson (1998) reported that friends of both gender tended to be similar demographically (i.e., age, gender, race and socioeconomic status), had similar levels of school achievement and academic ability, enjoy participating in similar activities, and resemble one another in self esteem and self perception. Additionally, Hartup (1993) noted that adolescents are likely to be similar in two main social domains; school related attitudes, goals, and achievement, and attitudes and behaviors relevant to teenage culture (i.e., substance use and dating). Furthermore, Haselager et al. (1998) found that while children tended to be similar across a variety of different

domains including sociometric status, shyness, and prosocial behavior, they were most similar in regards to participation in antisocial behavior. Antisocial behavior refers to both aggressive and delinquent behavior, with aggression referring to behavior intended to harm others and delinquency referring to criminal or rule breaking behavior (Deptula & Cohen, 2004). These findings have been replicated in a number of additional studies which indicate that children and adolescents, both males and females alike, who engage in deviant and antisocial behavior tend to have friends who also engage in deviant in antisocial behavior (Bauman & Ennett, 1994; Curran, Stice, & Chassin, 1997; Deptula & Cohen, 2004; Fergusson et al., 2007; Hanish, Martin, Fabes, Leonard, & Herzog, 2005; Haynie, 2002; Haynie & Osgood, 2005; Heinze, Toro, & Urberg, 2004; Jackson, 1997). Moreover, friends tend to become more similar over time, such that levels of delinquent and antisocial behavior tend to increase correspondingly amongst peers (Aboud & Mendelson, 1998; Adams, Bukowski, & Bagwell, 2005; Cairns, Cairns, Neckerman, Gest, & Garipey, 1988; Deptula & Cohen, 2004; M. Gifford-Smith, Dodge, Dishion, & McCord, 2005; Hanish et al., 2005; Hartup, 2005; Kandel, 1978a, 1978b; Mrug, Hoza, & Bukowski, 2004; Newcomb & Bagwell, 1998). The similarity between friend characteristics and the tendency for friends to increase in similarity over time is likely due to two social processes referred to as selection and socialization.

Peer selection is the process by which children and adolescents elect to participate in friendships with individuals who are behaviorally similar to themselves. That is, individuals tend to coordinate their choices of friends with their behavior (Kandel, 1978b), choosing to be friends with those whose behavior most resembles their own. Therefore, adolescents are attracted to individuals who engage in similar behaviors and subsequently select those

individuals as friends. The process of selecting friends, however, is mostly likely not rational. Rather, Hartup (1996) suggests that adolescents establish relationships with individuals that provide the most rewarding and enjoyable experiences. Not surprisingly, it is more rewarding and enjoyable to engage in activities with those who commonly hold the same interests (Aboud & Mendelson, 1998; Hartup, 1993). Furthermore, selecting similar individuals as friends provides consensual validation and support for commonly held attitudes and beliefs (Aboud & Mendelson, 1998; Hartup, 1993, 1996). Children are liked by those similar in social status and behavior and disliked by those dissimilar in social status and behavior, such that antisocial children are most liked by their antisocial classmates (Nangle, Erdley, & Gold, 1996).

Likewise, children who engage in antisocial behaviors often experience rejection by their prosocial peers (Coie, Terry, Zakriski, & Lochman, 1995; Deptula & Cohen, 2004; Fergusson, Woodward, & Horwood, 1999; Nangle et al., 1996; J. Snyder et al., 1986), receiving a high proportion of least liked and a low proportion of most liked sociometric ratings. Rejection by prosocial peers may be one reason why antisocial children and adolescents tend to select friendships with other antisocial peers (Coie et al., 1995; Pepler, Craig, & Roberts, 1995). Snyder et al., (1986) suggest that antisocial children interact socially in an unskilled manner. For example, antisocial children are more likely to be aggressive, lie, cheat, brag, and seek attention than are their prosocial peers. Subsequently they tend to be rejected by their more socially skilled, or prosocial peers, resulting in the selection of other unskilled, aggressive peers as friends, who likewise have been excluded from the prosocial peer group (Patterson, Capaldi, & Bank, 1991). Furthermore, this rejected group of peers likely share a common interest in engaging in antisocial and delinquent behavior, further increasing the likelihood of friendship

attraction and formation due to a similar interest in engaging in antisocial behavior. Therefore, in addition to being more liked by their antisocial peers, antisocial children tend to select other aggressive peers as friends (Mrug et al., 2004). For example, Hanish et al. (2005) found that aggressive children are more likely seek interactions with aggressive peers. Moreover, aggressive children and adolescents tend to have friendships networks where aggressive behavior is considered a shared commonality amongst group members (Cairns et al., 1988).

If selection processes alone were responsible for adolescent delinquent behavior, then having delinquent peers as friends would not be predictive of delinquency above and beyond prior levels of delinquent behavior. Prior literature suggests, however, that this is not the case, indicating rather that antisocial behavior is not a stable friendship characteristic. In a study designed to investigate the contribution peer relationships make to delinquent behavior, Haynie (2005) found evidence to suggest that for both males and females, selecting delinquent peers as friends significantly contributed to delinquency in adolescence. Furthermore, support was also found for peer influence, as having delinquent friends was associated with increases in delinquent behavior, above and beyond prior levels of delinquent behavior. These findings suggest socialization processes, in addition to selection processes, make a meaningful contribution to delinquent behavior outcomes. This finding is further supported by literature which suggests forming friendships with deviant peers results in the escalation of problem behavior (Dishion, McCord, & Poulin, 1999). Therefore, selection processes alone cannot fully explain friendship similarities. Socialization, or the process by which peers influence one another through modeling and subsequently reinforcing certain types of behavior valued by that peer group, may also play a role in the similarities noted in child and adolescent friendships.

Kandel (1978a, 1978b) was one of the first friendship researchers to recognize the socializing influences of peers in adolescence, particularly in the antisocial domain of early drug use. Adolescents who engaged in illegal drug use were likely to be friends with other adolescent substance users and subsequently more likely to modify their drug use to match that of their friends. More recently, Kandel's observations regarding peer socialization and antisocial behavior have been further substantiated. There is evidence to suggest that friends mutually regulate one another's behavior in order to maintain similarities, modeling behavior for one another and subsequently reinforcing behavior that is aligned with friendship norms particular to that group of friends (Adams et al., 2005; Boxer, Guerra, Huesmann, & Morales, 2005; Cairns et al., 1988; Deptula & Cohen, 2004; Hanish et al., 2005; Hartup, 1995; Haynie & Osgood, 2005). Hartup (2005) maintains that socialization in friendships is a mutual, dyadic process, and that individual differences in levels of a given behavior effect the degree to which friends influence one another. Individuals modify their level of a given behavior to resemble the mean level of their friends. Subsequently, those who are further from the mean are more strongly influenced by their friends' behavior. Furthermore, Hanish et al. (2005) found that the more time children report spending with antisocial peers the higher their levels of aggression. Additionally, Mrug, Hoza and Bukowski (2004) found that both male and female children who identify themselves as having more aggressive and disruptive peers were more likely to experience externalizing behavior problems at the end of a two year period. Similarly, Fite, Colder, and O'Conner (2006) found evidence suggesting delinquent peer involvement is associated with increases in externalizing behavior over time above and beyond prior levels of externalizing behavior, regardless of gender. Consistently, Curran et al. (1997) found evidence to suggest bidirectional

processes of peer influence and adolescent substance use, such that adolescents who had friends that used substances were more likely to demonstrate increased substance use over time above and beyond prior levels of substance use. Likewise, friend substance use increased over time.

Thus, there is evidence to suggest both peer selection and socialization processes play a role in peer similarity, particularly in the development and exacerbation of problem behavior in childhood and adolescence. Antisocial friends provide reinforcement and validation for antisocial behaviors and attitudes and offer little opportunity for prosocial growth (J. Snyder et al., 1986). In a longitudinal study of child and adolescent problem behavior, Fergusson and Horwood (1996) found continuity in delinquent behavior for males and females from childhood to adolescence. Moreover, continuities found in delinquent behavior were attributed both to prior levels of delinquency, and affiliation with deviant peers. Additionally, after controlling for prior levels of delinquent behavior, Fergusson, Swain-Campbell, and Horwood (2002) found that affiliating with delinquent peers was associated with increases in delinquent behavior, including both criminal acts and substance use. In sum, there is strong evidence to suggest that delinquency and other externalizing behavior tends to occur and further develop in the context of deviant friendships. Little is known, however, about the specific role of friendship quality and characteristics in this bidirectional relationship.

Friendship Quality and Delinquency

The literature regarding the nature of delinquent friendships presents two conflicting theoretical viewpoints regarding the ability of delinquent children and adolescents to experience high quality friendships. The implication regarding friendship quality is that the higher the friendship quality, the better the benefits or effects of that friendship (Berndt, 1998). As

previously stated, however, having friends who engage in and endorse deviant, delinquent, or antisocial behavior can have a negative or maladaptive effect, such that levels of delinquent behavior tend to increase. This has led some researchers to posit antisocial, deviant children and adolescents are incapable of forming high quality, intimate relationships with their peers due to an inability to form social bonds. The theory most commonly driving these hypotheses is social control theory, first proposed by Hirschi (1971). Social control theory posits that all individuals feel pressure to commit delinquent acts. Delinquent behavior is controlled, however, by ties or bonds to conventional institutions (e.g., the family or education system). By definition, high quality friendships require that individuals maintain a strong, mutual social bond. Subsequently, social control theory predicts the friendship quality of delinquent children and adolescents to be poor, because having strong social bonds with others is not consistent with committing delinquent acts. Antisocial children are rejected in childhood because they are incapable of forming social bonds as a result of their impaired social abilities. They identify other antisocial children as friends because they have no other choice. According to social control theory, identifying delinquent peers as friends is secondary to producing antisocial behavior, not part of the process. This supposition of social control theory is in direct opposition to differential association theory, sometimes referred to as cultural deviance theory, first proposed by Sutherland and Cressey (1955).

Differential association theory proposes that antisocial children and adolescents are no different from their prosocial peers in terms of their ability to form high quality friendships. They do differ, however, in terms of how they define their group's cultural norms. Antisocial children and adolescents elect to affiliate with delinquent peer groups based on their common

interest in engaging in antisocial activities. According to differential association theory, delinquent peer groups provide a higher proportion of favorable definitions for delinquent behavior. Rooted in social learning theory, learning these pro-deviance definitions takes place in intimate personal groups, where imitation and modeling for delinquent behavior occurs. Additionally, punishment is provided for behavior contrary to group norms, and reinforcement is provided for behavior congruent with group norms. Therefore close, intimate friendships are necessary for pro-deviant messages to be conveyed and learned, suggesting high quality, intimate friendships are an integral part of peer socialization processes (Matsueda, 1982; Sutherland & Cressey, 1955). Therefore, high friendship quality, particularly intimate exchange, should amplify peer influence, and result in increases in child and adolescent antisocial behavior.

Empirical investigation of these two contradictory theories has yielded mixed results. In support of social control theory, in 1969, Hirschi (2002) found that the more attached adolescents were to their friends, the less likely they were to commit delinquent acts. More recent literature suggests friendship quality can attenuate risk factors associated with negative developmental outcomes. Bollmer (2005) found that high friendship quality attenuated the relationship between externalizing difficulties and bullying. That is aggressive and disruptive children were less likely to bully others if they experienced high quality friendships. Furthermore, Dishion, Andrews and Crosby (1995), found that the friendships of antisocial boys tended to be low in quality, short in duration, and only marginally satisfying. Likewise, Poulin, Dishion, and Haas (1999), found that antisocial boys tended to have lower quality friendships and that high levels of delinquent behavior and low quality friendships were associated with escalations in delinquent behavior over a two year period. Furthermore, Brownfield and Thompson (1991) found that while peer

delinquency was strongly associated with self reported delinquency, attachment to delinquent peers was not. Moreover, those with delinquent friends were less likely to report trust and respect as characteristics of their friendships. Findings by Junger-Tas (1992) offer further substantiation for social control theory, suggesting an inverse association between frequency of criminal offending and levels of social integration. Likewise, Erikson, Crosno, and Dornbusch (2000), indicate stronger social bonds are associated with decreased susceptibility to negative peer influence.

In contrast, however, Gardner and Shoemaker (1989) found that delinquent adolescents do in fact form attachments or bonds with their delinquent friends and that attachment to delinquent peers was positively associated with delinquent behavior. Additionally, levels of closeness with friends across both males and females was not associated with decreased delinquency according to findings by Houtzager and Baerveldt (1999). Similarly, Gillmore, Hawkins, Day, and Catalano (1992) found that delinquent individuals were no less attached to their friends than their non-delinquent peers. Moreover, deviant children and adolescents were found to be capable of participating in high quality, intimate social relationships. Pleydon and Schnier (2001) found no differences between delinquent and non-delinquent adolescent friendships in regards to levels of attachment, help, security, closeness, loyalty, trust and intimacy. In addition, Claes and Simard (1992) concluded that delinquent adolescents are capable of forming intimate, high quality friendships based on the finding that both male and female delinquent adolescents indicate comparable levels of intimacy and attachment to their close friends. Furthermore, there is literature to suggest that when compared to the friendships of their prosocial peers, delinquent friendships are actually characterized by higher levels of

intimacy. For example, Giordano et al. (1986) found that delinquent adolescents engaged in more self disclosure with their friends than non-offenders, and did not differ from non-offenders in regards to reported levels of trust and caring in their friendships. Likewise, Houtzager and Baerveldt (1999) found friendship intimacy, regardless of gender differences, was positively associated with frequency of criminal offenses.

Consistent with differential association theory, in order for learning of pro-deviance definitions to take place, children and adolescents must be invested in the relationships conveying these messages. Moreover, as the amount of autonomy children have from their parents increases during the developmental transition from childhood to adolescence, dependence on peer relationships increases in developmental salience (Buhrmester, 1998; Furman & Buhrmester, 1985). Additionally, adolescent friendships, when compared to friendships in childhood, are characterized by an increased reliance on friendship relationships as a source of intimate exchange and social support (Buhrmester, 1990, 1998; Buhrmester & Furman, 1987; Furman & Buhrmester, 1992). Literature regarding friendship quality suggests that the higher the quality of friendship the more amplified the peer influence (M. E. Gifford-Smith & Brownell, 2003). Thus, as intimate exchange emerges as a hallmark characteristic of adolescent friendships, and is also a friendship feature associated with high friendship quality, antisocial friendships characterized by higher levels of intimacy may exhibit increased levels of delinquent behavior over time based on the socializing influence of a high investment in delinquent friendship associations. Accordingly, the current study examined the moderating effect of intimate exchange on the relation between externalizing behavior and best friend delinquency.

The Current Study

Despite research indicating the importance of peer influence occurring in the context of intimate friendship relationships, no research has specifically examined the moderating effect of intimate exchange on the reciprocal relation between child externalizing behavior and best friend delinquency. The current study contributed to the existing literature by examining the moderating effect of intimate exchange on the relation between externalizing behavior and best friend delinquency over the period of one year (Figure A-1).

Specifically, the current study addressed three research questions. Based on a large body of existing literature which suggests electing to participate in friendships with similar delinquent peers is linked to increases in externalizing behavior through both selection and socialization processes (Dishion et al., 2004; Fergusson & Horwood, 1996; Fergusson et al., 2002; Fergusson et al., 1999), the first question of interest was whether best friend delinquency predicted increases in child externalizing behavior over time. Peer delinquency was expected to predict increases in child externalizing behavior over time, above and beyond prior levels of externalizing behavior. The second question of interest was whether child externalizing behavior predicted increases in best friend delinquency over time. Consistent with previous research, child-externalizing behavior was expected to predict increases in best friend delinquency over time. Finally, the third question of interest was whether intimate exchange moderated the relation between child externalizing behavior and best friend delinquency. Consistent with differential association theory, which suggests learning pro-deviance messages takes place in intimate friendship relationships, and previous research indicating intimate exchange may play an important role in the development of problem behavior (Giordano et al., 1986; Pleydon &

Schner, 2001), intimate exchange was expected to moderate these relations, such that relations between child externalizing behavior and best friend delinquency would be stronger at high levels of intimate exchange when compared to low levels of intimate exchange.

II. Method

Participants

The current sample was derived from a larger longitudinal study designed to examine the development of problem behavior. Participants were recruited through the use of newspapers, radio, and flyer advertisements distributed throughout the community. The age range of 10 to 13 years was chosen for the purpose of this study because research indicates that as children transition from late childhood to early adolescence, the ability to establish close, intimate relationships becomes an increasingly important component of friendships (Buhrmester, 1990). The community recruited sample included an over-sampling of children with externalizing behavior problems in order to investigate developmental trajectories of problem behavior in childhood and adolescence.

A phone screening process determined if the child qualified for participation based on age and to ensure the inclusion of children with externalizing behavior problems. Exclusionary criteria included learning disabilities (e.g., severe learning or developmental delay, autism), taking medication that would interfere with psychological processes (e.g., anticonvulsant or antipsychotic medication), and non-English speaking families. The current study included 65 children (67% male), ranging from 10-13 years of age at baseline ($M = 11.95$ years, $SD = 1.30$), and their primary caregivers. The majority of primary caregiver respondents were mothers (91%), while 8% were fathers, and 1% consisted of “other relatives.” The ethnic/racial composition of the sample was 72.5% Caucasian, 11.6% African American, and 15.9% “other” ethnic/racial group. The average family income was \$50,225.91 (range = \$6,000.00 – \$155,000.00).

In order to detect group differences between participants who completed both assessment points and those who did not participate in the follow-up interview ($n = 21$), t-tests and chi-square tests were estimated. Participants did not differ on gender ($\chi^2 = 2.91, p > .05$), internalizing behavior problems, age, intimate exchange, or best friend delinquency ($t_s = -.53$ to $1.43, p_s > .05$). A significant difference was found for externalizing behavior problems ($t = -2.21, p = .03$) such that externalizing behavior was slightly higher for those who did not complete the follow up assessment ($M = 1.53$ vs. $M = 1.40, d = .50$, medium effect).

Procedures

At baseline and one year following, children and their primary caregiver participated in an hour long interview. Children and their primary caregivers were asked to provide consent/assent for their participation. Caregiver and child interviews were conducted separately. Both caregivers and children answered questions regarding the child's behavior, including questions about externalizing behavior and substance use, temperament, and the behavior of the child's best friend. Caregivers received \$30 for their time and study participation and children received a small prize.

Measures

Child Externalizing Behavior. Parent reports of child externalizing behavior were assessed at Time 1 (baseline) and Time 2 (one year following) using the externalizing subscale of the Child Behavior Checklist (CBCL/6-18; Achenbach, 1991). The CBCL/6-18 is a 113-item, caregiver-report measure of emotional and behavioral problems in children ranging from 6 to 18 years of age. The externalizing subscale consists of 33 items comprised of Rule-Breaking (e.g., *Breaks rules at home, school or elsewhere*) and Aggressive (e.g., *Physically attacks people*)

behaviors. Caregivers rate their children on a 3-point frequency scale ($0 = \textit{not true}$, $1 = \textit{somewhat/sometimes true}$, $2 = \textit{very/often true}$) regarding how consistent each item is with the behavior of their child in the past six months. The CBCL/6-18 has been found to be a valid and reliable measure of child behavior, demonstrating test-retest reliability and discriminate validity between clinically referred and non-referred samples (Achenbach, 1991). Mean scores were computed to form scale scores at both time points and used for analysis. Raw scores were used because, according to Achenbach (1991), raw scores provide a broader range of scores than t-scores when using the CBCL/6-18 for research purposes. Caregiver report of child externalizing behavior was included because previous literature suggests caregivers are accurate reporters of child externalizing behavior on the CBCL/6-18 (Rey, Schrader, & Morris-Yates, 1992; Sandor, Julia, & Natasa, 1999). Internal consistencies for this measure of externalizing behavior in the current sample were high (baseline $\alpha = .91$, follow-up $\alpha = .90$).

Best Friend Delinquency. Both parent and child reports of best friend delinquency were assessed at baseline and again at Time 2 using the Peer Affiliation Scale (Fergusson et al., 1999). Children were asked to identify their best friend, and affirmation from the caregiver was obtained to insure they knew the individual. While mutually nominated best friends have been found to be the most accurate reporters of one another's behavior, there is literature to suggest that in the case of unilateral best friendship nominations, the child who provides the nomination is knowledgeable about the identified best friend's behavior (Ladd & Emerson, 1984). Therefore, children can be assumed to be reasonably accurate reporters of their best friend's behavior. Additionally, data regarding best friend delinquency was included because previous research indicates best friend delinquency predicts increases in deviant behavior (e.g., Vitaro,

Brendgen, & Tremblay, 2000). Furthermore, both caregiver and child reports of best friend delinquency were included because children may attribute some of their own behavior to their best friend, and thus combining caregiver and child reports is believed to provide a more accurate assessment of peer behavior (Bauman & Ennett, 1994). Children and caregivers were asked to provide their best estimate (responding “yes” or “no”) as to whether the child’s best friend engaged in a 14-item list of delinquent behaviors (e.g., *Purposefully set fire to a building, a car, or other property, or tried to do so?*). Caregiver and child reports of best friend delinquency were summed to create a best friend delinquency score for baseline and one year following and used in analyses.

Intimate Exchange. Child reports of intimate exchange with their best friend, as assessed at baseline, using the intimate exchange subscale of the Friendship Quality Questionnaire (FQQ) (Parker & Asher, 1993) was used to assess intimate exchange. The FQQ is a 40-item questionnaire in which the respondents rate qualitative aspects of the best friendship using a 5-point scale (*0 = not at all true, 1 = a little true, 2 = somewhat true, 3 = pretty true, 4 = really true*). The intimate exchange subscale, consisting of 6 items, is designed to measure the child’s perception of the amount of disclosure of personal information and feelings that take place in their relationship with their best friend (e.g., *My best friend and I tell each other secrets*). The FQQ has been found to be a valid and reliable measure of friendship quality, in which the six friendship quality subscales represent distinct aspects of overall friendship quality (Parker & Asher, 1993). Mean scores were computed and used for analysis. The internal consistency for the intimate exchange subscale in the current sample was adequate ($\alpha = .79$).

III. Data Analytic Strategy

Multiple regression analyses were conducted using SAS statistical software to examine the relation between child externalizing behavior and best friend delinquency over time. In order to examine selection effects, follow-up best friend delinquency was regressed on baseline best friend delinquency, baseline child externalizing behavior, and intimate exchange. In order to examine socialization effects, follow-up child externalizing behavior was regressed on baseline best friend delinquency, baseline child externalizing behavior, and intimate exchange. Baseline internalizing behavior, age, and gender were included as covariates in both the selection and socialization models, as previous literature suggests associations between these variables and externalizing behavior as well as peer delinquency (Erickson et al., 2000; Fite et al., 2006; Giordano et al., 1986; Pedersen, Vitaro, Barker, & Borge, 2007; Poulin, Dishion, & Burraston, 2001). In order to aid in the interpretation of interaction effects, all variables were standardized. In order to reduce the number of parameters estimated in a single model as a result of the current study's relatively small sample size, interactions were examined in separate regression models. Significant interactions were conditioned at high (+1 SD) and low (-1 SD) levels of intimate exchange in order to determine the nature of the interaction (Aiken & West, 1991).

Descriptive Statistics

For correlations, means, and standard deviations of observed study variables, see Table A-1. The correlation between baseline and follow-up child externalizing behavior suggested high stability in externalizing behavior. Likewise, the correlation between baseline best friend delinquency and follow-up best friend delinquency suggested moderate stability in delinquent behavior across one year. Additionally, the correlation between baseline child externalizing

behavior and baseline best friend delinquency suggested some behavioral similarity in antisocial behavior between children and their best friends at the time of initial assessment. Internalizing behavior was positively associated with externalizing behavior as well as across time. Age was positively correlated with follow-up child externalizing behavior and positively correlated with follow-up best friend delinquency, suggesting antisocial behavior was more prevalent as age increased. Gender was marginally positively correlated with baseline child externalizing behavior, suggesting females were more likely to exhibit baseline externalizing behavior than males, and negatively correlated with intimate exchange, suggesting males were more likely than females to report intimate exchange at baseline.

Regression Analyses

Internalizing behavior was initially included as a covariate in the first order selection and socialization models. Internalizing behavior was not a significant predictor of child externalizing behavior or best friend delinquency ($ps > .47$). Therefore, internalizing behavior was not considered further in order to reduce the number of parameters estimated in the model.

Selection. The first order effects model for selection processes indicated baseline best friend delinquency was associated with best friend delinquency over time ($\beta = .23, p = .03$), suggesting the stability of best friend delinquency across one year. Additionally, age was associated with best friend delinquency one year following ($\beta = .26, p = .01$), such that older children's best friends engaged in more delinquent behavior than younger children. However, gender, baseline child externalizing behavior, and intimate exchange were not significantly associated with change in best friend delinquency over one year ($\beta s = -.08$ to $.10, ps > .34$).

In order to examine the moderating effect of intimate exchange on the relation between child externalizing behavior and best friend delinquency, the interaction between baseline child externalizing behavior and intimate exchange was added to the model. Results indicated intimate exchange did not moderate the relation between baseline child externalizing behavior and follow-up best friend delinquency ($\beta = -.03, p = .78$).

Socialization. The first order effects model for socialization processes indicated that baseline child externalizing behavior was the only significant predictor of child externalizing behavior one year following ($\beta = .79, p = .00$), suggesting the stability of child externalizing behavior over time. Age, gender, baseline best friend delinquency, and intimate exchange were not significant predictors of increases in child externalizing behavior over time (β s = $-.09$ to $.02, p$ s $> .23$).

However, when the interaction between baseline best friend delinquency and intimate exchange was added to the model, intimate exchange was found to moderate the relation between best friend delinquency and child externalizing behavior over time ($\beta = -.25, p = .01$). At low levels of intimate exchange, best friend delinquency predicted increases in child externalizing behavior over time ($\beta = .27, p = .02$). At high levels of intimate exchange, however, best friend delinquency and child externalizing behavior were inversely related ($\beta = -.22, p = .04$) (See Figure A-2).¹

¹ In order to detect if relations varied across gender, the selection and socialization models were run again separately for both males and females. Results indicated a similar pattern for both males and females. Additionally, in order to detect if relations varied at high and low levels of income, income was divided into high and low groups based on the median annual household income of \$40,000. Direction of effects matched for both high and low levels of income. At the low level of income, however, intimate exchange significantly predicted decreases in externalizing behavior over time ($\beta = -.37, p = .04$), when this relation was not significant at the high level of income.

IV. Discussion

The purpose of the current research was to investigate selection and socialization effects in best friendships as children transition from childhood to early adolescence by examining the reciprocal relation between best friend delinquency and child externalizing behavior over the period of one year. Additionally, the moderating effect of intimate exchange on these relations was examined. Although not in the hypothesized direction, intimate exchange was found to moderate the relation between best friend delinquency and child externalizing behavior, suggesting intimate exchange may be an important mechanism of peer socialization. Implications and future directions of these findings are discussed below.

The first order effect models for selection and socialization indicated the stability of best friend delinquency and child externalizing behavior over the period of one year. These findings are consistent with previous literature which suggests that externalizing and delinquent behaviors are relatively stable characteristics across childhood and adolescence (Patterson et al., 1991; Rubin & Mills, 1991). Additionally, research indicates that antisocial children often behave in a socially unskilled manner, and thus are likely to be rejected by their prosocial peers (J. Snyder et al., 1986). This process may contribute to the stability of antisocial behaviors because antisocial children are not afforded the opportunity to learn more socially appropriate behaviors from their prosocial peers as they are likely to be excluded from their peer group. Participant age was also associated with best friend delinquency. This finding is consistent with literature which suggests that delinquency and rule-breaking behavior often increase with age (Patterson et al., 1991). Although no specific hypotheses were drawn in regards to the first order effects of intimate exchange, it is also interesting to note that intimate exchange was not related to child

externalizing behavior or best friend delinquency, suggesting delinquent adolescents did not differ from non-delinquent adolescents on their levels of intimate exchange. This finding is somewhat inconsistent with social control theory which posits that delinquent youth are incapable of forming conventional social bonds, such as high quality, intimate friendships (Hirschi, 1971).

While both selection and socialization processes were anticipated, there was no evidence of selection processes. It may be that the age range utilized in the current sample was not broad enough to detect selection effects. Consistent with this interpretation of the current findings is literature which suggests that peer selection based on behavioral similarity occurs as early as preschool and elementary school. For example, Snyder, Horsch and Childs (1997) found that aggressive and non-aggressive preschool aged children established strong, mutual relationships with behaviorally similar peers. Likewise, Hanish et al. (2005) found preschool aged girls who tended to exhibit externalizing behavior preferred to engage in play with girls who likewise exhibited externalizing behavior. Moreover, Hektner, August, and Realmuto (2000) found that at the beginning of a summer program, 7 and 8 year old children mutually selected one another as friends based on level of aggressive behavioral similarity. Furthermore, Cairns et al. (1988) found that aggressive elementary school aged children tended to form affiliations with other aggressive children. Thus, selection may have occurred prior to the ages represented in the present study.

In contrast, intimate exchange was found to moderate the relation between best friend delinquency and child externalizing behavior over the period of one year, suggesting peer socialization processes impact the development of problem behavior as children transition from

late childhood to early adolescence, and intimate exchange plays an important role. Contrary to study hypotheses, however, was the direction in which intimate exchange moderated the relation between best friend delinquency and child externalizing behavior. Sutherland and Cressey's (1955) differential association theory proposes that deviant peer groups ascribe to an unconventional set of group norms that promote deviant behavior by communicating a high proportion of pro-deviance messages in the context of intimate, interpersonal relationships. Based on this theory, it was expected that higher levels of friendship intimacy would contribute to deviant socialization by strengthening the relation between best friend delinquency and child externalizing behavior. Results indicated, however, that at high levels of intimate exchange, best friend delinquency and child externalizing behavior were negatively related, and at low levels of intimate exchange, best friend delinquency and child externalizing behavior were positively related. Findings suggest, therefore, that intimate friendships impact the socialization process by protecting against the exacerbation of problem behavior.

Contrary to differential association theory, social control theory suggests children and adolescents with strong social bonds, such as high quality friendship relationships, are less likely to engage in antisocial behavior. Intimate exchange is defined as relational closeness (Piaget, 1965) or the child's perception of the amount of disclosure of personal information and feelings that take place in their relationship (Parker & Asher, 1993). Therefore, the implication is that intimate exchange is an emotionally laden friendship experience, in which children and adolescents share their emotional experiences with one another. While intimate best friends may convey and reinforce pro-deviance messages (e.g., Dishion et al., 1995; Dishion, Spracklen, Andrews, & Patterson, 1996), as is suggested by differential association theory, they may

simultaneously be sharing with their best friends the deeper emotions and negative consequences associated with their high levels of delinquent behavior. If children and adolescents have more awareness of the negative consequences their best friends are experiencing as a result of their delinquent behavior, they may be less likely to subsequently engage in antisocial behavior themselves. Thus, intimate exchange with a delinquent best friend may provide a protective function against the exacerbation of problem behavior as children transition from late childhood to early adolescence because it represents an emotional bond between best friends. Thus, the current study offers partial support for social control theory because children with delinquent best friendships characterized by high levels of intimate exchange were found to exhibit decreases in externalizing behavior over time.

These findings may be particularly relevant in the development of intervention and prevention strategies for children and adolescents who are experiencing difficulties with problem behavior. As children age into adolescence and begin seeking autonomy from their parents, friendship relationships become an increasingly important source of companionship and intimacy (Buhrmester & Furman, 1987; Diaz & Berndt, 1982; Furman & Buhrmester, 1985). The emergence of intimacy in friendship relationships requires that children develop the social competencies necessary to appropriately disclose personal information while simultaneously providing emotional support to their peers (Buhrmester, 1998). This research, in combination with the current study findings, may indicate the importance of encouraging intimate exchange in child and adolescent friendship relationships. Social skills training designed to facilitate the development of the social competencies necessary to effectively engage in intimate exchange in friendship relationships may aid in the reduction of externalizing behavior problems in

adolescence. This implication is consistent with the majority of friendship quality literature which suggests that high quality friendship relationships can serve a protective function against aversive life circumstances (Bollmer et al., 2005; Lansford, Criss, Pettit, Dodge, & Bates, 2003), and that children and adolescents who experience high friendship quality are more likely to have better adjustment outcomes (Berndt, 1996; Berndt & Keefe, 1995; Fordham & Stevenson-Hinde, 1999)

Limitations and Future Directions

There are several limitations associated with the current literature that should be noted. First, the sample utilized for the purpose of the current study included a community recruited sample with an over-sampling of children with behavior problems. While the inclusion of such a sample is useful when investigating the developmental significance of antisocial and delinquent behaviors, the generalizability of the study results to more normative samples may be narrowed. Moreover, as previously indicated, the age range utilized in the current research may not have been broad enough to adequately detect selection effects. Finally, friendships, by definition, involve two or more people, who may or may not disagree about the quality and features of their friendship relationship (Berndt, 1998). Therefore, there are limitations associated with the current study's inclusion of unidirectional best friendship nominations.

Despite these known limitations, the current study highlights the importance of considering intimate exchange in the development of externalizing behavior problems in late childhood and early adolescence. Facilitating and encouraging intimate exchange, particularly the negative experience and consequences of externalizing behavior, in friendship relationships through social skills training for children and adolescents experiencing behavior problems may

aid in the reduction of subsequent externalizing symptoms. Additionally, this period of developmental transition may be a target for such interventions as friendship intimacy increases in developmental salience.

Future research would benefit from investigating the moderating effect of intimate exchange on the reciprocal relation between best friend delinquency and child externalizing behavior though the inclusion of both members of a mutually nominated best friendship dyad. Moreover, observing friendship interactions between delinquent best friendship dyads would be instrumental in evaluating the content of what is shared amongst deviant peers. Specifically, whether or not deviant adolescents are sharing the negative consequences associated with their high levels of delinquent behavior with their best friends needs to be examined. Furthermore, these relations need to be examined in shorter term, longitudinal research, as previous literature indicates that the best friendships of delinquent children and adolescents are relatively short in duration (e.g., Dishion et al., 1995). Additionally, in order address the possibility of selection effects occurring at an earlier age, future research should include data commencing at an earlier age point. Cross-sectional or longitudinal investigation spanning the elementary, middle, and early high school age ranges examining the development and age-related importance of intimate exchange in delinquent best friendship relationships would also be informative for the conceptualization of intervention and prevention strategies.

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Appendix

Table A-1.

Correlations, Means, and Standard Deviations of Observed Study Variables

	1	2	3	4	5	6	7	8	9
1. T1 Int									
2. T2 Int	.64*								
3. T1 Ext	.41*	.22†							
4. T2 Ext	.37*	.39*	.82*						
5. T1 BfDel	-.07	-.13	.36*	.32*					
6. T2 BfDel	.12	-.10	.11	.07	.30*				
7. IntExch	-.10	-.20	-.19†	-.17	-.02	-.03			
8. Age	.12	.06	.17	.25*	.13	.32*	-.08		
9. Gender	-.03	-.01	.18†	.11	.12	.15	-.30*	.08	
<i>M</i>	1.29	1.29	1.43	1.39	.81	1.80	3.10	11.95	-
<i>SD</i>	.22	.21	.27	.25	1.39	2.68	.93	1.28	-

Note. T1 Int = baseline measure of internalizing behavior (Achenbach, 1991); T2 Int = follow-up measure of internalizing behavior (Achenbach, 1991); T1 Ext = baseline measure of externalizing behavior (Achenbach, 1991); T2 Ext = follow-up measure of externalizing behavior (Achenbach, 1991); T1 BfDel = baseline caregiver and child reported best friend delinquency (Fergusson et al., 1999); T2 BfDel = follow-up caregiver and child reported best friend delinquency (Fergusson et al., 1999); IntExch = intimate exchange (Parker & Asher, 1993)

* $p < .05$. † $p < .10$.

Figure A- 1a. Influence of child externalizing behavior on change in best friend delinquency (selection) and the moderating role of intimate exchange

Figure A-1b. Influence of best friend delinquency on change in child externalizing behavior (socialization) and the moderating role of intimate exchange

Figure A-1a.

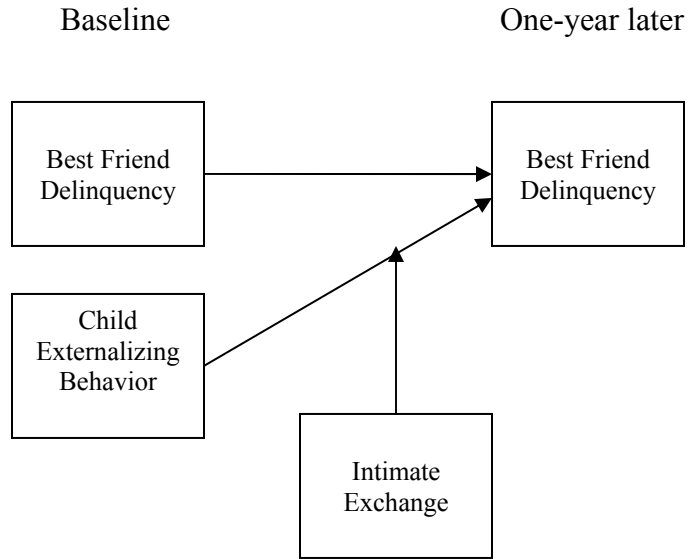


Figure A-1b.

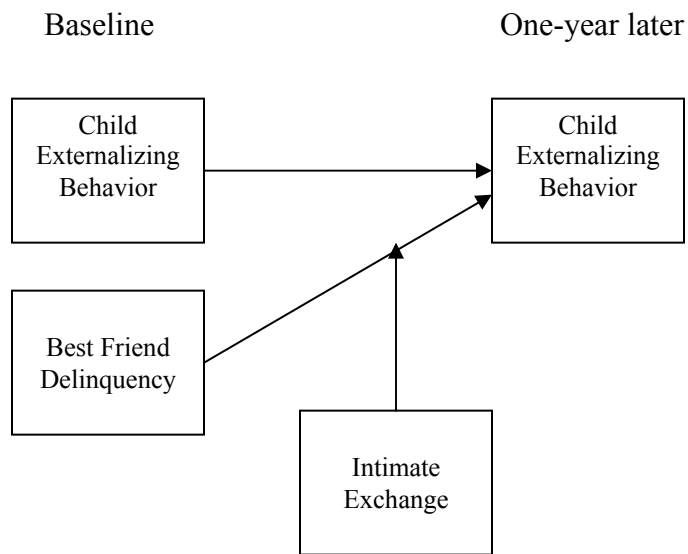


Figure A-2.

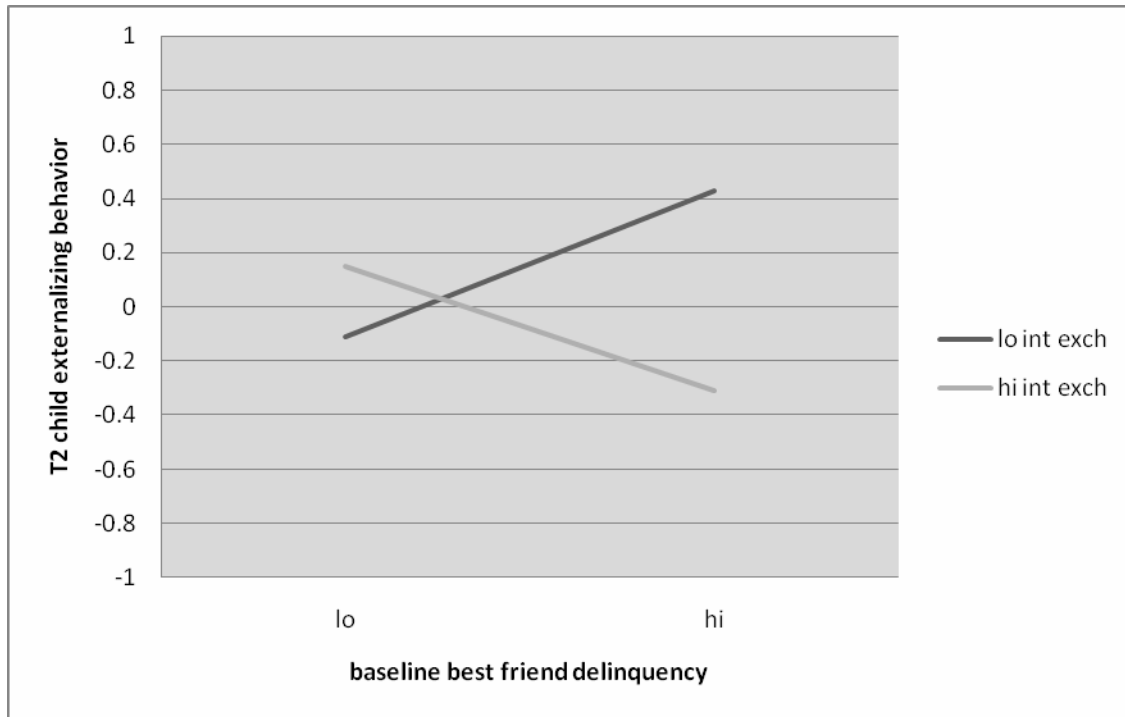


Figure A- 2. Moderating effect of intimate exchange on the relation between best friend delinquency and child externalizing behavior over one year

Vita

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