

PEER RELATIONS: EFFECTS OF PEER DELINQUENCY
AND ATTACHMENT ON DELINQUENT
BEHAVIOR IN ADOLESCENCE

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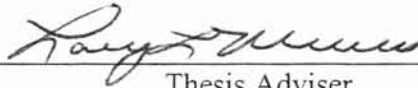
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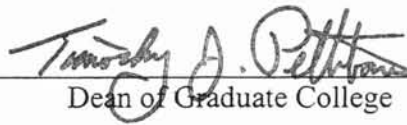
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CHAPTER I

INTRODUCTION

One only has to turn on the news or open the daily paper to be reminded of the crime problem our society faces. From 1989 to 1998, the total number of arrests in the U.S. increased 7% (FBI, 2000). Furthermore, violent crimes, such as murder, forcible rape, robbery, and aggravated assault increased 4% from 1989 to 1998 (FBI, 2000). In 1998, 14.5 million criminal arrests were recorded (FBI, 2000). Although 78% of all persons arrested in 1998 were male, female arrests have been increasing at an alarming rate (FBI, 2000). From 1989 to 1998, there has been a 28% increase in overall female arrests and a 53% increase in violent crime arrests among females (FBI, 2000). These statistics not only illustrate the overall increase in crime, but also identify crime among women as an area of concern.

More disturbing still is the increasing number and seriousness of delinquent acts which are carried out by adolescents. Forty five percent of all arrests in 1998 occurred for individuals under 25 years of age (FBI, 2000). Adolescents between the ages of 16 and 24 comprised 36% of all individuals arrested for 1998 (FBI, 2000). When specific crime categories are examined, youth under 25 years of age comprised over fifty percent of all arrests for robbery (63%), burglary (64%), larceny-theft (56%), motor vehicle theft (67%), stolen property (58%), vandalism (68%), weapons (58%), liquor laws (77%), and

disorderly conduct (56%) (FBI, 2000). Overall, these statistics indicate that adolescents comprise the majority of arrests for a wide variety of offenses.

Another means of ascertaining the seriousness of adolescent arrests is to examine the court disposition of juvenile offenders taken into custody. From 1995 to 1998, the number of juveniles referred to juvenile court increased only slightly (66% to 69%), but the number of juveniles referred to criminal or adult court rose from 3% to 9% (FBI, 2000). These data suggest that the seriousness of adolescent crimes is increasing.

Examining the number of juveniles incarcerated is an additional indicator of the seriousness of adolescent delinquent behavior. The Census of Juveniles in Residential Placement conducts a census of public and private residential facilities holding youth under 21 years of age. The total number of juveniles incarcerated on any one day has increased from 91,646 in 1987 to 125,805 in 1997 (Office of Juvenile Justice and Delinquency Prevention, 1999). Notably, only 6.5% of adolescents were incarcerated for status offenses, (i.e., crimes illegal for juveniles but not for adults). Again, such data offers further evidence of the increase in number and seriousness of delinquent acts committed by adolescents. Of those juveniles incarcerated, the ethnicity was quite varied, with 40% being African American, 37.5% Caucasian, 18.5% Hispanic, 1.8% Asian, 1.5% American Indian, and 0.3% Pacific Islander (Office of Juvenile Justice and Delinquency Prevention, 1999). Such variability in ethnicity suggests that research examining adolescent delinquency should target populations with multiple ethnic groups.

Clearly, adolescent delinquency represents a problem to our society and is an area that warrants scientific investigation. For years, research has focused on a variety of variables associated with the etiology and maintenance of adolescent delinquency. Thus,

numerous theoretical models have been developed to try to explain adolescent delinquency. Most of these theoretical models point to peer influence as a major causal factor. Cross-sectional studies indicate a high correlation between adolescent delinquency and peer delinquency (Agnew, 1991; Ary, Duncan, Duncan, & Hops, 1999; & Warr, 1993). Researchers investigating adolescent delinquent behavior longitudinally have found results that indicate that peer delinquency may be causally related to delinquent behavior (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Elliot, Huizinga, & Ageton, 1985; Elliot & Menard, 1996; Patterson & Dishion, 1985; Synder, Dishion, & Patterson, 1986). Therefore, peer delinquency is a common factor consistently associated with adolescent delinquency.

One theory in particular proposes that the specific nature of adolescents' interpersonal relationships may influence deviant behavior. Social Control Theory has fostered the development of a number of models, which focus in part on the nature of relationships among peers in an attempt to explain how deviant peers influence delinquent behavior. Given that peer delinquency is a common factor associated with adolescent delinquency, one would suspect that it is important to understand the nature of the relationships among deviant peers as this may help us understand how deviant peer influence operates.

In order to understand the status of research on peer influences on deviant behavior, it is necessary to examine three specific models which address this phenomenon. These models are as follows.

Primary Socialization Theory

Primary socialization theory (PST) proposes to explain the cause of deviant behavior and drug use in adolescence (Oetting & Donnermyer, 1998). This theory is an offshoot of Oetting and Beauvias's (1986) Peer Cluster Theory. A fundamental basis for PST is that all human social behaviors are learned or have components that are learned. Socialization is described as the process by which social norms and behaviors are learned through interactions between the youth and certain socialization sources. During adolescence, the family, school, and peer clusters are considered to be the main sources for socialization (Oetting & Donnermyer, 1998).

Based on this theoretical model, adolescent deviant behavior would have at its center the youth, with connections to three primary socialization sources: school, family, and peers. Such connections between the adolescent and the primary socialization sources hypothetically serve as channels for the communication of norms and behavior. A second element of PST involves mediation. Specifically, all other factors or secondary socialization sources which influence the adolescent's behavior, do so through the three primary socialization sources. That is, secondary sources only affect the adolescent because they influence the primary source or the process of primary socialization (Oetting & Donnermyer, 1998).

Based on Oetting and Donnermyer's theory, school, family, and peer clusters can transmit either prosocial or deviant norms; however, family and school are typically the primary sources for prosocial norms. PST proposes that when family/child and school/child socialization "connections" are strong youth will develop prosocial norms.

The term “connection” is used to refer to the bond between the adolescent and his/her socialization sources (Oetting & Donnermyer, 1998, p. 999). The strength of the bond between the adolescent and one source will affect the strength of the bond between the adolescent and other sources. Thus, when family and school socialization connections are weak, adolescents are more likely to choose deviant peers. Therefore, PST states that it is these peer clusters that serve as the primary socialization source, thus having a direct and immediate influence on deviance and drug use.

Empirical support for PST is considerable (Oetting & Donnermyer, 1998) with studies demonstrating a relationship between family and school bonding and deviant peers (Elliot & Voss, 1974; Kandel, 1978). Additionally, several researchers have investigated the relationship between different areas of family functioning, academic success, peer delinquency, and adolescent delinquent behavior (Ary et al., 1999; Dishion et al., 1991; Synder & Dishion, 1986; Patterson & Dishion, 1985). These studies have provided evidence which supports a mediational model of delinquency, such as primary socialization theory. In general, these longitudinal studies have found peer delinquency to be a consistent proximal factor associated with delinquency, with family factors and school factors frequently affecting delinquency indirectly by affecting association with delinquent peers. Thus, PST can be viewed as a theory, which points to the significance of peers and illustrates how other variables affect delinquent behavior through peer clusters.

Peer clusters are presumed to consist of best friend dyads, small groups of close friends, or couples. PST states that the formation and communication of deviant norms occurs in peer clusters. Therefore, these peer clusters are smaller subsets of the youth’s

larger peer group. Oetting and Donnermyer (1998) propose that peer clusters are small, cohesive, and are strongly bonded to each other. The transformation of norms occurs through discussion and shared experiences, as well as through the direct monitoring and reinforcing of attitudes and behavior of the members.

To date, research has demonstrated that these influential peer clusters are not necessarily as cohesive and strongly bonded as primary socialization theory has proposed. Dishion (1996) found that antisocial youth were able to form peer clusters, but had trouble maintaining friendships. Although these peer clusters were not found to be as closely bonded as primary socialization theory suggests, they were associated with longitudinal increases in substance use and major delinquent offenses. Therefore, having delinquent peers who were not strongly bonded to each other was associated with increases in future delinquent behavior.

Although PST concludes that peer clusters are the strongest proximal predictors of adolescent delinquency, it fails to provide theoretical or empirical support for its assumption regarding the nature of the interpersonal relationships between adolescents and peer clusters. PST proposes that these peer clusters are cohesive and strongly bonded, but research in this area has resulted in an unclear picture of the interpersonal relationships between adolescents and delinquent peers. One theory that makes specific assumptions about the nature of the interpersonal peer relations and adolescent delinquent behavior is Social Control Theory.

Social Control Theory

Social Control Theory (Hirschi, 1969) is one of the most influential theories of adolescent delinquent behavior. Hirschi's classic sociological theory hinges on the assumption that all people have deviant impulses and that these impulses are held in check by bonds to conventional society. When adolescents have weak conventional bonds, it is assumed that there is a lack of control over these impulses, which results in the adolescent not wanting or needing to adhere to conventional standards of behavior. When weak bonds exist, the adolescent is then free to engage in deviant behavior.

Based on social control theory, bonds to conventional society are thought to exist through the adolescents' relationship with family members, schools, and religion. The term "bond" has been used to refer to four constructs: attachment, commitment, involvement, and beliefs. Attachment is proposed to represent the affection and respect that the adolescent holds toward significant individuals, such as parents and teachers. The construct of commitment is proposed to represent the adolescent's actual or anticipated investment in conventional activities. Adolescent involvement represents the amount of time spent engaged in conventional activities. Lastly, beliefs are stated to represent the adolescent's commitment to the central value system of the society.

Social Control theory does not specifically include the influence of delinquent peers in its model of delinquency (Friedman & Rosenbaum, 1988). Instead, this model of delinquent behavior focuses on the relation between a lack of bonding and delinquent behavior. Furthermore, Hirschi does not differentiate between bonding to delinquent and non-delinquent peers. One "bonding" construct that represents interpersonal relations is

that of attachment. Hirschi proposed that attachment to anyone, (e. g., teachers, parents, or peers) would serve as a strong bond and foster conformity. In his study of adolescent delinquency, he directly examined the relationship between the self-reported peer attachment and the self-reported delinquent behavior of over 4,000 high school boys. In this study, the construct of peer attachment was operationally defined as the adolescents' sensitivity to the opinion of others (Hirschi, 1969). Hirschi found a moderately strong inverse association between attachment to friends and delinquency. Delinquent youth were less likely to identify with their friends and were less likely to respect the opinions of their friends than non-delinquent youth. This finding indicated that those youth with weaker peer attachments were more likely to commit delinquent acts (Hirschi, 1969).

Based on Hirschi's findings, social control theorists have thus described peer relationships of delinquent youth as following the social disability model (Gordon, 1967). These delinquent peer relationships are proposed to be superficial and lacking affectionate bonds. Delinquent youth are thought to lack the social skills necessary to form close and personal friendships with other peers. Thus, the social disability model hypothesizes that peer relationships among delinquent youth are transient and intrinsically unrewarding. This model is in contrast to the social ability model adopted by social learning theorists (Hansell & Wiatrowski, 1981). The social ability model states that delinquent and non-delinquent youth possess the same social skills and have similar peer relationships. Based on this model, delinquent youth are proposed to have or be capable of having stable and rewarding peer relations.

The nature of the relationship between adolescents and delinquent peers has remained an area of much debate and controversy. Despite Hirschi's findings and the

theoretical assumption made by control theorists regarding attachment to delinquent peers, several studies have found a positive correlation between attachment to peers and delinquent behavior (Erickson & Empey, 1965; Linden & Hackler, 1973; Hindelang, 1973; Elliot & Voss, 1974; Massey & Krohn, 1986). Specifically, greater peer attachment was associated with greater delinquent behavior. In addition, Giordano, Cernkovich, and Pugh (1986) found similar patterns of peer relationships and friendship between delinquent and non-delinquent peers. However, the findings of Giordano and colleagues have been criticized because the items employed in measuring friendship overlapped with items measuring peers' involvement in delinquent acts (Brownfield & Thompson, 1991). Additionally, a higher rate of self-disclosure about problems associated with sex and feelings of guilt about past behaviors was found among delinquent peers. This finding was interpreted to suggest that delinquent youth have closer relationships because of a higher rate of self-disclosure. This interpretation has been further criticized because the nature of the self-disclosure was related to disclosure about delinquent acts that the youth had committed.

Utilizing data from the Seattle Youth Study (Hindelang, Hirschi, & Weis, 1991), Brownfield and Thompson (1991) investigated the relationship between adolescents' self-reported delinquency and the nature of his/her relationships with his/her best friend and friends in general. Since the aims of Brownfield and Thompson closely resemble the aims of the current project, a detailed review of their methodology was warranted. Data were reported on 847 white males, stratified to obtain a sufficient sample of youth with police records and youth court records. Based on Hirschi's social control theory, the construct of attachment was the primary source for examining the nature of peer relations.

Unlike some studies investigating the relationship between delinquency and peer relations, adolescents' measure of attachment to peers was matched to their report of peer delinquency. This matching ensured that the adolescent used the same peer reference group for measures of peer attachment and peer delinquency. Attachment was assessed through the use of four questions. Two questions assessed attachment to best friend: 1) Would you like to be the kind of person your best friend is; 2) Do you share your thoughts and feelings with your best friend? Additionally, two questions addressed attachment to friends in general: 1) My friends can be trusted to tell the truth; 2) I have lots of respect for my friends.

Brownfield and Thompson found that having delinquent best friends and/or having delinquent friends were positively correlated with adolescent self-reported delinquency. In regard to the relationship between attachment to peers and self-reported delinquent behavior, no significant relationship was found for either of the questions pertaining to attachment to best friends. However, there was a significant relationship found between attachments to friends in general and self-reported delinquent behavior. Those that agreed to "My friend can be trusted to tell the truth" (72%) were less likely to self-report two or more delinquent acts than those who expressed disagreement (82%). Eighty five percent of those that disagreed with "I have lots of respect for my friends" reported two or more delinquent acts compared to 76% of those adolescents that agreed. When involvement with delinquent peers was controlled, attachment to friends was not significantly associated with self-reported delinquency. Adolescents' involvement with delinquent peers was found to be the strongest factor associated with self-reported delinquency. These results suggest that adolescents with delinquent friends are less likely

to trust their friends or to respect their friends. Such findings, in support of control theory, suggested that attachment had a modest inhibitory effect on delinquent behavior.

Pabon, Rodriguez, and Gurin (1992) have suggested that peer relationships among delinquent peers provide a sense of group belongingness, but do not contain attributes that have been directly linked to supportive friendships. They based their hypothesis on Furman and Robbins (1985) theory of social provisions, which posits that close friendships provide affection, intimacy, and reliable alliance. Furthermore, both close friendships and general peer relations provide such attributes as companionship, nurturance, and enhancement of worth. This distinction suggests that close friendships provide the adolescent with certain attributes not contained in general peer relations. Pabon et al. provided tentative support for this argument, noting that 75% of adjudicated juveniles commit offenses with other juveniles, but that only 30% of those juveniles indicated that they were involved with a group of friends who were involved in committing criminal acts, National Institute of Justice (cited in *Juvenile Justice Bulletin*, 1990). These data suggest that the majority of adolescents who commit delinquent acts with peers do not consider their deviant partners to be close friends.

Pabon et al. (1992) further explored the nature of peer relationships with delinquent peers based on Furman and Robbins' (1985) distinction between close friendships and general peer relations. Since the aims of Pabon et al. closely resemble the aims of the current project, a detailed review of their methodology was warranted. The authors utilized a two-wave panel dataset containing a sample of 1,077 Puerto Rican adolescent males residing in the South Bronx. Through individual interviews, the amount of time adolescents spent with their friends was assessed. Five questions were

constructed to directly assess whether the interpersonal relationships among delinquent peers were based on close intimate friendships or greater group belongingness: 1) "I feel close to my friends;" 2) "My friends do not take much interest in my problems;" 3) "Sometimes I feel lonely when I am with my friends;" 4) "I don't feel that I fit in very well with my friends;" and 5) "My friends are willing to listen if I have a problem." The adolescents' delinquent behavior, based on 27 offenses, was measured for the past year. Peer delinquency was measured with 14 questions addressing friends' delinquent behavior in the past year, with responses ranging from "all of them" "to none of them."

Pabon et al. (1992) found no significant relationship between associating with delinquent peers and the items assessing closeness to friends, friends caring about the adolescent's problems, or feeling that they do not fit in well with peers. Associating with delinquent peers was associated with loneliness, estrangement, and spending evenings together with peers. Two factors, emotional distance and time association, emerged from a factor analysis of the peer relation variables. Using regression analysis, emotional distance between peers and time associating with peers were found to be significantly associated with adolescents' involvement with delinquent peers. The results of the regression analysis suggest that delinquent youth spend much time with delinquent peers, but that their interactions with delinquent peers lack emotional intimacy or bonding.

Thus far, research involving peer attachment and delinquency has been equivocal, with some studies finding a positive relationship between peer attachment and delinquency and some studies finding a negative relationship (Colvin & Pauly, 1983; Conger, 1976; Elliot et al., 1985; Elliot & Voss, 1974; Erickson & Empey, 1965; Hindelang, 1973; Johnson, 1979; Linden & Hackler, 1973; Massey & Krohn, 1986).

Researchers have hypothesized that these contradictory findings are the result of an interactive effect between peer attachment and peer delinquency (Conger, 1976; Johnson, 1979; Linden & Hackler, 1973). Additionally, Agnew (1991) stated that research on delinquent peers has been too simplistic, with researchers only examining the number of delinquent friends or the frequency with which friends commit delinquent acts.

Based on these inconsistent findings, Agnew suggested that an interactive effect between peer attachment and peer delinquency may indeed exist. Agnew proposed three factors that might interact with peer delinquency: attachment with peers, amount of contact with peers, and peers' approval of delinquent behavior. Specifically, he hypothesized that delinquent peers are more likely to be positively associated with adolescent delinquency when attachment between peers is high, when there is greater contact, and when peers approved of delinquent patterns of behaviors.

Since the aims of Agnew closely resemble the aims of the current project, a detailed review of his methodology was warranted. The first wave of the National Youth Survey data was used to examine these potential interactive effects. The first wave data contained a sample of both males and females between the ages of 11 and 17. Attachment to peers was measured with five items: 1) "Don't fit in well with friends;" 2) "Friends don't take an interest in my problems;" 3) "Feel close to my friends;" 4) "Friends listen to my problems;" and 5) "Feel lonely with my friends." Delinquent peer behavior was separated into two categories, minor and serious. Minor delinquent behaviors included property destruction, stealing something worth less than \$5, and hitting or threatening to hit someone. Serious delinquent behaviors included selling hard

drugs, stealing something worth more than \$50, and breaking into a vehicle or building to steal something.

The results from this investigation illustrated that there was great variability across the peer dimensions. Forty percent of adolescents who indicated that “some” or “many” of their friends committed delinquent acts categorized as serious offenses were weakly attached to their friends, 51% moderately attached, and 9% strongly attached. Variation was also found in the amount of reported time spent with their friends. Additionally, 11% of adolescents reported that their friends would strongly disapprove of their delinquency, 22% would disapprove, as well as 49% would neither disapprove nor approve, and 18% endorsed that their friends would approve of their delinquency. Such variability in peer dimensions demonstrates the complexity of the relationships among delinquent peers, and contradicts simplistic assumptions that peer relations among delinquent youth are uniform. Multiple regression analyses found significant interactive effects for the investigated peer variables. When adolescents’ peer attachment, contact, and approval were at their respective mean or lower, the association with peers who engaged in serious delinquent behaviors was not related to delinquency. When adolescents’ levels of peer attachment, contact, and approval were above their respective means, the presence of delinquent peers (serious) was positively associated with delinquency. No interactive effects were found when the presence of friends that committed minor delinquent acts was examined. These results illustrate that strong peer attachment interacts with peer delinquency. Specifically, strong peer attachment increases the association with peer delinquency for serious offenses on delinquent behavior. These results contradict those proposed by social control theorists such as

Hirschi, who contend that attachment to peers, even if deviant, should dampen the effect of delinquent peers.

Later work by Wong (1998) challenged Agnew's conclusion that peer attachment intensified the criminogenic effect of delinquent peers on adolescent delinquent behavior. Agnew's argument stemmed from the assumption that if an adolescent had strong attachment to peers and had delinquent friends, the adolescent must have had strong attachments to delinquent friends. However, Agnew did not directly link his measure of attachment with peer delinquency. Since it is not known if the same reference group was used for both assessments of peer attachment and peer delinquency, Agnew's conclusions are disputable. Based on social control theory, Wong proposed that deviant peer association would be associated with deviance because of a low level of attachment among peers. He hypothesized that attachment to peers would reduce the criminogenic effect of delinquent friends. Specifically, delinquent peers would have less of an effect on delinquent behavior when there is strong attachment to peers.

Wong utilized a sample of 315 male and adolescent females, between the ages of 10 to 20, of Chinese descent, living in a Western Canadian metropolis. Peer delinquency was measured as the proportion of friends involved in 11 delinquent activities ranging from running away from home to assault and vandalism. Peer attachment was measured with four items addressing adolescents' sensitivity to peer opinions, support from peers, and identification with peers: 1) "They say nice things about me;" 2) "I would like to be the kind of person my friends are;" 3) "My friends encourage me to do well in school;" and 4) "I care a lot about what my friends think of me." Delinquent behavior was measured by 19 items assessing the number of times the adolescent had committed

delinquent acts, ranging from skipping class to robbery in the last twelve months.

Notably, although Wong criticized Agnew's conclusions concerning the interactive effect of delinquent peers and peer attachment, he did not ensure that adolescents in his study used the same peer reference group when completing the peer delinquency and peer attachment measure.

Regression analyses revealed significant main effects for the association with delinquent peers and attachment to peers, with the association with delinquent peers being the strongest factor associated with delinquency. Those youth with more delinquent friends were more involved in delinquent behaviors. Attachment to peers was negatively associated with delinquency, such that adolescents with stronger peer attachment were involved in fewer delinquent behaviors. Additionally, a significant negative interactive effect between peer delinquency and peer attachment was found. Specifically, this negative interactive effect was interpreted to mean that peer delinquency has less of an impact on delinquent behavior when adolescents have strong peer attachment. Although the generalizability of these results may be limited because of the culture of the sample, the findings directly contradict Agnew's findings of a positive interactive effect between peer delinquency and peer attachment.

Agnew and Wong have both made suggestions for reducing the effects of peer delinquency based on their findings. Agnew proposed that interventions targeted at reducing the emotional closeness to delinquent peers might reduce the effect of delinquent peers. Wong suggested that since peer attachment serves as a restraining factor, affective ties to conventional peers should be strengthened and ties to delinquent peers should be reduced or severed. However, both researchers failed to insure that the

same peer reference group was used for peer delinquency and peer attachment, therefore negating the ability to draw conclusions about the nature of the relationship between peer attachment and peer delinquency. Taken together, research on the interpersonal relationships between delinquent adolescents has yielded unclear results as to the nature and quality of these interpersonal relationships.

Attachment Theory

In control theory, the construct of attachment has been cited as a central component. Surprisingly, a definition and/or elaboration of the parameters this construct entails has not been provided in relation to control theory. Furthermore, in studies examining control theory, the measurement of attachment has typically ranged from one item to five items. In regard to control theory, this practice has resulted in utilization of an ambiguous construct of attachment that lacks empirical validity. In order for a model to be empirically tested, its' constructs need to be based on theory and empirically validated. By drawing upon theoretical and empirical research specifically focusing on attachment theory, Hirschi's model can be further strengthened. Additionally, attachment theory provides parameters that can be empirically measured.

Attachment theory can be viewed as the sum of the theoretical and empirical work of John Bowlby and Mary Salter Ainsworth, which centered on childrens need for a close and continuous care giving relationship. Bowlby's contribution evolved from his interest in the effects of maternal loss and deprivation and personality development. Ainsworth's contribution stemmed from her interest in security theory (Bretherton, 1992).

The initial theoretical and empirical work regarding attachment focused on the relationship between an infant and mother (Bowlby, 1969). Thus, Bowlby described attachment as an affectional bond between an infant and caregiver, usually the mother. This bond is enduring and independent of situational circumstances or environmental contingencies. Additionally, the attachment relationship has been proposed to function as a base from which the external environment can be explored (Bowlby, 1969; Mahler, Pine, & Bergman, 1975). Based on Bowlby and Ainsworth's attachment theory, a child with secure attachment has an unconscious assurance of access to help from others and positive sense of worth. This child will develop a sense of self-reliance, and yet be willing to seek out help when needed (Bowlby, 1973).

Attachment security is based on the child's perception of availability of the attachment figure. A secure attachment relationship exists when the child perceives open lines of communication with the attachment figure, physical accessibility to the attachment figure, and that the attachment figure will respond if needed for help (Ainsworth, 1990). As the child's cognitive abilities develop there is less reliance on actual physical accessibility, and there is an internalizing of the attachment figure. The internal representation of the attachment figure overlaps with the self and has a subsequent influence on everyday behavior and life (Cohen, 1974). This internalizing of the attachment figure results in an internal working model, which helps guide the emotional and cognitive development of the child, as well as his/her involvement in other relationships during his/her life (Bowlby, 1969).

The concept of an internal working model has been described as serving as a context for organizing emotional experiences and affect regulation (Koback & Sceery,

1988). Main and colleagues (Main, Kaplan, & Cassidy, 1985) stated that working models provide “rules and rule systems for the direction of behavior and the felt appraisal of experience” (p. 77). These rules are thought to function as strategies for regulating distress in the absence of the attachment figure. Research examining attachment security in adults has found an association between attachment security and the ability to regulate emotions (Block, 1982; Kobak & Sceery, 1988). In lieu of these findings, researchers such as Kobak have proposed attachment theory as a theory of affect regulation.

Although the majority of the theoretical and empirical work in the realm of attachment theory has focused on the relationship between child and mother, attachment relationships are not restricted to just the mother figure or primary caregiver (Ainsworth, 1969; 1972; and 1989). Bowlby (1969) proposed that having confidence in the accessibility and responsiveness of trusted others is important for individuals at all ages. Thus, individuals have a behavioral predisposition to seek proximity to and /or contact with particular others under conditions of vulnerability. Because of these views, the concept of attachment across the life span has become increasingly popular. For example, research examining attachment to peers in adulthood found that peer attachment was associated with seeking out of peers when under stress, feeling anxiety when peers were not accessible, and experiencing comfort while in their company (Weiss, 1982).

More recently, attention has turned towards examining peer attachment during adolescence. Based on Bowlby’s and Ainsworth’s conceptualization of attachment Greenberg, Siegal, & Leitch (1984) developed the Inventory of Adolescent Attachment (IAA) to measure parental and peer attachment during adolescence. Greenberg and colleagues constructed the IAA according to Parkes and Stevenson-Hinde’s (Parkes &

Stevenson-Hinde, 1982) proposed multidimensional nature of attachment theory. Parkes and Stevenson-Hinde stated that attachment has both a behavioral and affective/cognitive component. Furthermore, proximity and support seeking are viewed as behavioral components and the internal working model as an affective/cognitive component. Therefore, the IAA was constructed to measure aspects of proximity and support-seeking and the adolescents' internal working model. The IAA was later modified and revised, resulting in the Inventory of Parental and Peer Attachment (IPPA) (Armsden & Greenberg, 1987).

The focus of research examining peer attachment in adolescence has revolved primarily on global constructs such as psychological well-being and life satisfaction. For example, the relationship between adolescents' attachment security to peers and adolescents' self-esteem and life satisfaction has been investigated (Greenberg et al., 1984). Greenberg and colleagues found peer attachment to be positively correlated with self-esteem and life satisfaction. Thus, adolescents with greater attachment security to their peers reported greater self-esteem and life satisfaction. This finding was interpreted as support of attachment theorists' assumption that attachment relationships are significant to psychological well-being. Additionally, this relationship between peer attachment, psychological well-being and life satisfaction has been replicated across a number of studies (Armsden & Greenberg, 1987; Raja, McGeé, & Stanton, 1992)

To date, only one study has examined the relationship between antisocial or delinquent behavior and peer attachment with an empirically constructed, validated, and published measure of attachment. Marcus and Betzer (1996) hypothesized that parental and peer attachment would be negatively associated with adolescent antisocial behavior,

such that those adolescents with greater attachment security would report fewer antisocial acts. Additionally, it was hypothesized that parental and peer attachment would be positively correlated. Both parental and “Best Friend” attachment were measured with the IPPA. Antisocial behavior during the past year was assessed with a 23-item delinquency report. The sample used in this study consisted of 72 males and 91 females from private middle schools with a mean age of 12.7. Ninety six percent of adolescents reported living with their birth mothers and 78% reported living with their birth fathers. Eighty percent of the sample was Caucasian, 88% reported living in a two-parent household, and 78% of the parents were college graduates.

Marcus and Betzer found that attachment to mother, father, and best friend were negatively correlated with antisocial behavior. Greater security in all three attachment relationships was associated with less antisocial behavior. When these relationships were examined separately for males and females, attachment to best friend was not significantly related to antisocial behavior. Utilizing multiple regression analysis, grade, gender, paternal attachment, maternal attachment, and attachment to best friend were entered into a model. The model accounted for 32% of the variance in antisocial behavior. Grade and gender, as well as paternal and maternal attachment, contributed significantly to the amount of explained variance, but attachment to best friend did not contribute significantly to explained variance. To test for entry effects, attachment to best friend was entered before paternal and maternal attachment and contributed 1.8%, versus 17% of the variance for paternal and maternal attachment. When separate regression analyses were performed for each gender, attachment to best friend did not significantly contribute to the explained variance beyond the contribution of paternal and maternal

attachment. These results indicate an inverse relationship between attachment and antisocial behavior, which supports control theory. Additionally, the amount of variance in antisocial behavior that best friends attachment accounted for was substantially less than paternal and maternal attachment.

Limitations of Existing Work

Peer delinquency has been identified as the most consistent factor associated with adolescent delinquent behavior in both cross-sectional and longitudinal investigations. For the purpose of developing intervention strategies, it would be expected that the interpersonal relationships between adolescents and their delinquent peers would be an area of considerable exploration. Unfortunately, this area has not been adequately investigated. Although many theoretical assumptions have been made concerning the interpersonal relations of adolescents and their delinquent peers, few studies have directly assessed them. When research has investigated the interpersonal relationships between peers and adolescent delinquency, the results have been inconsistent. Additionally, among the studies that have directly assessed interpersonal relationships among delinquent peers, most include critical methodological limitations.

One methodological flaw has been the inconsistent and vague measurement of attachment (Marcus & Betzer, 1996). Assessment tools have varied in length from one item to five items. These measurements of attachment have lacked adequate psychometric properties and theoretical support. Replication of prior studies has faltered because of the inconsistent manner in which researchers have chosen to assess attachment.

Another methodological limitation among these studies involves the problematic sampling strategies researchers have used. For example, many of the studies have only included males (Brownfield & Thompson, 1991; Pabon et al., 1992), and the majority has focused on Caucasians (Brownfield & Thompson, 1991; Marcus & Betzer, 1996). Additionally, some studies have examined delinquent behaviors in the general population (Agnew, 1991; Marcus & Betzer, 1996; Pabon et al., 1992; Wong, 1998) while others have focused solely on adjudicated youth (Brownfield & Thompson, 1991). Because of the use of these rather narrow subject samples, the generalizability of findings to youth, such as those reported in the Uniform Crime Reports, has been limited. In order for generalizations and useful conclusions to be made, research must focus on samples that are more representative of youth that engage in a high frequency of delinquent acts and become involved in state and federally funded intervention projects.

The inconsistent findings in studies examining the interpersonal relationships between peers and adolescent delinquency could be the result of poor construct measurement or differences in sampling, but the possibility of potential “third” variable interaction, has also not been thoroughly examined. Additionally, when interactive effects have been explored, results have remained inconsistent. Related to possible interactive effects, one limitation of past research revolves around the subjects' peer reference group (Wong, 1998). Studies have assessed peer delinquency and assessed interpersonal peer relations, but have not insured that subjects used the same peer reference group for these assessments. Several researchers have made conclusions about peer relations among delinquent adolescents based on this methodology. For example, researchers find that adolescents report feeling close to their peers and report high levels

of peer delinquency (Agnew, 1991). Therefore, they assume the adolescents feel close to their delinquent peers. This conclusion is premature, since it is possible that the adolescents reported feeling close to one friend or group of friends, but completed the peer delinquency measure on a separate group. Unless studies are methodologically designed to insure that the same peer reference group is used for both the assessment of peer delinquency and peer relations, no conclusions can be drawn regarding the relationship between the two.

Purpose of the Current Study

Given the results garnered from theoretical frameworks of primary socialization theory, control theory, and attachment theory, this study examined the effects of peer delinquency and peer attachment on adolescent delinquent behavior. Specifically, this study attempted to first determine if peer delinquency would be positively associated with adolescent delinquent behavior. Second, this study attempted to determine whether peer attachment moderated the relationship between peer delinquency and adolescent delinquent behavior. It was expected that the results of this study would provide information on the nature of peer relations among delinquent adolescents, and provide preliminary data on how interventions designed to reduce adolescent delinquency should address peer relations.

Furthermore, this study also attempted to address the methodological limitations discussed previously. First, the measurement of peer attachment utilized in the current study, the Inventory of Parental and Peer Attachment, is a valid and reliable measure of attachment, and was used to assess both parental and peer attachment. Because the IPPA

is based on Bowlby's attachment theory, it provides a more sound theoretical approach to the measurement of attachment.

Second, the sample utilized consisted of "high risk" adolescents of both genders, and included a substantial number of adolescents from multiple ethnic backgrounds. It is proposed that this sample is more representative of those adolescents who are reported on by the FBI and the Office of Juvenile Justice and Delinquency Prevention versus samples used in previous studies.

Third, this study examined the interactive effects of peer attachment and peer delinquency, while insuring use of the same peer reference group. Therefore, subjects' reports of peer delinquency and peer attachment would be for the same group of peers. Subjects were instructed to use the same peer reference group while reporting peer delinquency and peer attachment. Thus, stronger conclusions may be drawn regarding the relationships between peer delinquency and peer attachment.

In summary, the proposed study was the first to examine the interactive effects of peer delinquency and peer attachment on adolescent delinquency by: 1) utilizing a theoretically and empirically sound measure of peer attachment; 2) using an adolescent sample more representative of youth reported by the FBI and the Office of Juvenile Justice and Delinquency Prevention; and 3) insuring that the same peer reference group is used when completing all peer measures.

Hypotheses

Two main hypotheses were proposed in the current study. The first hypothesis was that peer delinquency would be associated with adolescent delinquent behavior. This

hypothesis is based on Oetting and Donnermyer's primary socialization theory. A positive relationship between these two factors was expected. Specifically, having a greater proportion of delinquent peers would be associated with committing a greater number of delinquent behaviors.

The second hypothesis proposed that the level of peer attachment would moderate the relationship between peer delinquency and adolescent delinquent behavior. This hypothesis was based on the integration of Hirschi's control theory and Oetting and Donnermyer's primary socialization theory. It was hypothesized that secure attachment to deviant peers would diminish the relationship between peer delinquency and adolescent delinquent behavior. Specifically, the association between a greater proportion of delinquent peers and committing a greater number of delinquent behaviors would be reduced by more secure peer attachment, greater communication and trust with peers, and less perceived alienation from peers.

CHAPTER II

METHOD

Participants

Three hundred and eighty-nine Job Corps trainees were initially identified as eligible for the study, with 46 (12%) refusing to participate. Although data were not available to statistically examine potential differences between participants and trainees refusing to participate, they were asked why they did not wish to participate.

Representative responses included: “I don’t want anyone knowing my business,” “I don’t feel like it,” “I am afraid staff will see my answers,” and “I don’t like doing questionnaires.” The remaining three hundred and forty-three participants (202 male and 141 female) were between the ages of 16 and 24 ($M = 19.1$). Highest level of education completed by the participants ranged from 7th grade to 12th grade or obtaining their GED. Participants identified themselves as African-American (45.9%), Caucasian (36%), Hispanic (7.6%), Native American (6.7%), Asian (0.9%), and other (2.9%). Family household make-up was obtained via self-report and is presented in Table 1 in Appendix A. The marital status of participants was as follows: 96.8% were single, 1.2% were married, 1.8% were divorced, and 0.3% were separated (See Table 1 in Appendix A).

Description of Program

Job Corps is a federally funded program administered by the U.S. Department of Labor. This program is a comprehensive residential education and job-training program for at-risk youth between 16 and 24 years of age. It serves as an alternative for young people who have experienced problems in traditional educational or vocational systems, dropped out of high school, or are experiencing problems with career goals (Job Corps, 2000). Eligibility requirements for Job Corps are as follows.

“Candidates for Job Corps must: be at least 16 and not yet 25 years of age at the time of enrollment; be a citizen, a United States National, a lawfully admitted permanent resident alien, refugee, asylee or parolee, or other alien who is authorized by the Attorney General to work in the United States; be a low income individual; be an individual who is one or more of the following – (1) a school dropout, (2) an individual who requires additional education, vocational training, or intensive career counseling and related assistance in order to participate successfully in regular schoolwork or to secure and hold employment, (3) basic skills deficient, (4) homeless, runaway, or foster child; be free of behavior problems that would prohibit self or others from benefiting from the program, must be free of face-to-face court or institutional supervision or court-imposed fines while in Job Corps; not be currently engaged in illegal drug use; have a child care plan if the applicant has a dependent child” (Job Corps, 2000).

Measures

Demographics. Participants completed a questionnaire assessing a variety of demographic variables. The questionnaire assessed the age of the participant, gender, highest level of education obtained, religious preference, ethnicity, marital status, and the number of dependent children. Additionally, the questionnaire assessed the family make-up of the participants' home prior to entering Job Corps.

National Youth Survey-Peer Delinquency Scale (NYS-PD). Adolescents' level of peer delinquency was measured by the NYS-PD. The NYS-PD (Elliott, Huizinga, Menard, 1989) consists of a 10-item, self-report scale which assesses the proportion of friends who have committed a variety of delinquent acts during the past year. Each item is based on a five-point Likert scale with the respondent indicating what proportion of friends have engaged in the delinquent act, (i.e., "all of them, most of them, some of them, very few of them, or none of them"). For example, adolescents were asked to rate how many of their friends in the past year have engaged in behaviors such as, "purposely damaged or destroyed property that did not belong to them" and "hit or threatened to hit someone without any reason." Additionally, the NYS-PD consists of a 3-item peer involvement scale. These three items assessed "on average" the number of weekday afternoons and evenings per week, the adolescents has spent with his/her friends the past year, and how much time the adolescent spent with his/her friends during the weekends the past year.

The NYS-PD was developed for the National Youth Survey (NYS; Elliott, et al., 1989). The NYS was a prospective longitudinal study that followed a national

probability sample of 1,725 youth, ages 11-17, beginning in 1976. This project was designed to assess self-reported delinquency, delinquency of friends, involvement with friends, and other variables relevant to the study of adolescent delinquent behavior. The NYS was funded by the U.S. Department of Health and Human Services, through the National Institute of Mental Health with supplemental funding from the U.S. Department of Justice through the Office of Juvenile Justice and Delinquency Prevention and National Institute of Justice.

Specifically, the item content of the NYS-PD was based on the development of the National Youth Survey – Delinquency Scale (NYS-DEL), a self-report measure which assesses adolescents frequency of engaging in delinquent acts during the past year. Although there are fewer items on the NYS-PD than the NYS-DEL, items on the NYS-PD are parallel to specific items on the NYS-DEL. Research on the NYS sample has found Cronbach’s alpha of .79 for the peer delinquency subscale and .76 for the peer involvement subscale, indicating sufficient reliability (Elliott, 1999). Reliability analyses for the current study revealed an internal consistency coefficient of $\alpha = .89$ for the peer delinquency subscale and $\alpha = .88$ for the peer involvement subscale.

National Youth Survey-Delinquency Scale (NYS-DEL). Adolescents’ frequency of engaging in delinquent acts was measured by the NYS-DEL. The NYS-Delinquency Scale was also developed for the National Youth Survey (NYS). Item content of the NYS-Delinquency Scale was chosen to be representative of the full range of official acts for which juveniles could be arrested (Dunford & Elliott, 1984). The NYS-DEL (Elliott et al., 1989) is a 25-item self-report scale which assesses the adolescent’s frequency of

engaging in a variety of delinquent acts during the past year. Each item utilizes an open-ended format with the respondent indicating how many times he/she has engaged in the delinquent act during the past year. For example, adolescents are asked to indicate the number of times in the past year they have engaged in behaviors such as, “purposely damaged or destroyed property that belonged to your parents or other family members” and “broken into a building or vehicle (or tried to break in) to steal something or just look around.”

The NYS-DEL consists of a general delinquency scale (22-items) and three additional items, which compose a property damage subscale. The general delinquency scale contains seven subscales: felony assault (3-items), minor assault (3-items), robbery (3-items), felony theft (3-items), minor theft (3-items), illegal services (3-items), and index offenses (9-items) (Dunford & Elliott, 1984).

Huizinga and Elliott (1986) stated that there was no reason to assume that since one individual engaged in a particular type of delinquent act that he/she would likely engage in other types of delinquent behaviors. Based on this assumption, Huizinga and Elliott have suggested that split-half and other internal consistency measures of reliability are inappropriate for self-report delinquency scales. Therefore, test-retest reliability has been proposed to be the best method for measuring reliability for delinquency scales. Test-retest data on 177 adolescents over a four-week period resulted in alpha of .75 for the general delinquency scale (Huizinga & Elliott, 1986). Reliability analyses for the current study revealed an internal consistency coefficient of $\alpha = .73$ for the general delinquency subscale.

The NYS-DEL has adequate face validity since the items are based on offenses reported in the Uniform Crime Report. The criterion validity of the NYS-DEL has been established in prior studies utilizing the NYS sample. A records check of police records of the towns, cities, and jurisdictions in a 10 mile radius of each adolescents' home was performed to validate their self-report responses. Record checks were conducted on 1452 adolescents, resulting in 126 youth that had been arrested a total of 276 times. Utilizing a broad match criteria, 216 (78%) of all arrests were matched with endorsed self-report items (Huizinga & Elliott, 1986).

Inventory of Parent and Peer Attachment (IPPA). Adolescents' attachment to their parents and peers was assessed with the IPPA. The IPPA (Armsden & Greenberg, 1987) is a 75-item, self-report measure that assesses the quality of parent and peer attachment in adolescents. Adolescents are asked to rate questions, such as "Talking over problems with my mother makes me feel ashamed," "When we discuss things, my father cares about my point of view," and "If my friends know something is bothering me, they ask me about it." The adolescent responds to each item by choosing a response category of, "never or almost never, seldom, sometimes, often, almost always, or always." The IPPA was constructed based on the theory that trust, accessibility, and responsiveness of the attachment figure represent internalized attachment (Armsden & Greenberg, 1987). Subsequent factor analysis of the IPPA has indicated three separate subscales: Trust, Alienation, and Communication. The IPPA provides these three attachment scales for mother, father, and peer. Attachment scales are derived by summing response values

across subscales (trust, alienation, and communication). For the current study total maternal, paternal, and peer attachment scores were examined.

Armsden and Greenberg (1987) found the IPPA to have good test-retest reliability over a three-week timeframe for adolescents 18 – 20 years old. Maternal and paternal attachment test-retest reliability was .93 and peer attachment test-retest reliability was .86. Internal consistency was also found to be strong, with Cronbach's alpha of .87 for maternal attachment, .89 for paternal attachment, and .92 for peer attachment. The validity of the IPPA has been demonstrated across several domains. Parental and Peer attachment scores were found to be moderately to highly correlated to scores on the Tennessee Self Concept Scale and to subscales on the Family Environment Scale in a sample of adolescents (Armsden & Greenberg, 1987). Additionally, in a sample of 12 – 17 year-olds, parental attachment was found to discriminate delinquents from non-delinquents (Redondo, Martin, Fernandez, & Lopez, 1986). Similarly, Marcus and Betzer (1996) demonstrated that attachment to mother, father, and best friend were negatively correlated with antisocial behavior. Reliability analyses for the current study revealed an internal consistency coefficient of $\alpha = .94$ for maternal attachment, $\alpha = .94$ for paternal attachment, and $\alpha = .91$ for peer attachment.

To insure that adolescents use the same peer reference group while completing the NYS-PD and IPPA, the directions preceding the peer section were modified. The following sentence was added, "You have already answered some questions about your friends' behavior, please think of those friends when you answer the following questions."

Marlowe-Crowne Social Desirability Scale (MCSDS). Adolescents' level of social desirability was assessed with the MCSDS. The MCSDS (Crowne & Marlowe, 1964) is a 33-item, self-report measure that assesses the level of social-desirability bias or the inclination to seek approval or avoid disapproval. The adolescent responds to each item by indicating whether each item is true or false. Adolescents are asked to respond to statements, such as "Before voting I thoroughly investigate the qualifications of all candidates," "If I could get into a movie without paying and be sure I was not seen, I would probably do it," and "I'm always willing to admit it when I make a mistake."

Items for the MCSDS were chosen from existing personality inventories. Item content was based on three factors. Each item had to meet cultural approval, be untrue of virtually all people, and have minimal pathological indications. Marlowe and Crowne computed two reliability estimates. Based on the Kuder-Richardson formula 20, the internal consistency coefficient was found to be .88. A test-retest correlation of .88 was found when college students completed the scale on two occasions separated by a month interval (Crowne & Marlowe, 1964). The MCSDS was found to be positively correlated with the K (test-taking attitudes) and L (lie) scales of the MMPI, and negatively correlated with the F (validity) scale. Additionally, a significant positive correlation between the MCSDS and the Edwards Social Desirability Scale has been demonstrated (Crowne & Marlowe, 1964). Reliability analyses for the current study revealed an internal consistency coefficient of $\alpha = .76$ for social desirability.

Procedure

Eligible participants for the proposed project included all new residential enrollees entering a Job Corps facility. New enrollees at Job Corps typically complete a three-week orientation phase. Data collection took place in a classroom setting, the same time and day each week, during enrollees' third week on campus.

The primary investigator explained the purpose of the data collection, informed students that participation was voluntary, explained the incentive for participating, and reviewed the information covered in the assent and consent forms. For participating, each student received a "Positive Event Report." Job Corps students earn "Positive Event Reports" in order to gain additional privileges on campus. Assent and consent forms were then distributed to each Job Corps student who was interested in participating. Because Job Corps serves as legal guardian for trainees who are minors (less than 18 years of age) while they are enrolled in Job Corps, the Job Corps Center Director gave consent for minors to participate. Minors signed assent forms if they chose to participate, and those 18 years or older signed consent forms. After participants signed assent or consent forms, packets of materials were distributed. The primary investigator remained in the classroom to answer any questions. After participants completed the packets of materials, they received their "Positive Event Report."

The packets of materials were then entered into an Access database. To ensure data quality and accuracy, the database had built-in range checks and default values. Additionally, double data entry was performed on all data, and subsequently the two datasets were compared using SAS.

Sample Size

In order for the current study to have sufficient statistical power, a sample size calculation was performed based on Cohen's (1988) methodology. To calculate sample size, three parameters were needed, including significance criterion (α), power (β), and expected effect size. For estimating sample size for the current study, α was set at .01, β at .80, and the expected effect size was medium. Based on these parameters for a multiple regression analysis with one independent variable, one moderating variable, and potentially seven control variables, a sample of 147 subjects was needed for sufficient statistical power.

Overview of Data Analysis

Preliminary analyses were first conducted to assess for potential control variables, given that previous research has identified a number of variables associated with adolescent delinquent behavior and peer attachment. First, several demographic variables constituted potential control variables, including age, gender, and ethnicity. Additionally, peer involvement and social desirability constituted potential control variables. Social-desirability bias has been found to influence relationships among self-report variables and more specifically variables assessing socially sensitive constructs (Ballard, Crino, & Ruben, 1988; Crino, Srobada, Rubinfeld, & White, 1983; Dicken, 1963; and Ganster, Hennessey, & Luthans, 1983). Although a relationship between social desirability and adolescent delinquent behavior has not been established by past research, adolescents' self-reported delinquent behavior does represent a socially sensitive construct.

Primary analyses were then conducted after control variables were identified through preliminary analyses. The first hypothesis was that peer delinquency would be associated with adolescent delinquent behavior. Hierarchical multiple regression analyses were conducted in order to examine whether peer delinquency (predictor variable), as measured by the NYS-PD, was associated with adolescent delinquent behavior (criterion variable), as measured by the NYS-DEL. The second hypothesis proposed that the level of peer attachment would moderate the relationship between peer delinquency and adolescent delinquent behavior. Hierarchical multiple regression analyses were conducted in order to determine if peer attachment (moderator variable), measured by the IPPA, moderated the relationship between peer delinquency (predictor variable) and adolescent delinquent behavior (criterion variable).

CHAPTER III

RESULTS

Preliminary Analyses

Preliminary analyses were first conducted to identify the relationship of potential control variables to the primary variables of interest. Due to the skewed distribution of the delinquent behavior variable, a logarithmic transformation was computed and the transformed variable was used for all analyses (Tabachnick & Fidell, 2001). Please see Table 2 in Appendix A for means and standard deviation of study variables. An examination of the number of delinquent behaviors adolescents reported revealed that 54% of males and 41% of females engaged in twelve or more delinquent behaviors during the past year. Additionally, only 17% of both males and females reported not engaging in any delinquent behaviors during the past year. These results indicated that both males and females represented a highly delinquent sample.

Zero-order correlations were computed to determine the relationships of gender, age, social desirability, peer involvement, maternal attachment, and paternal attachment to delinquent behavior (criterion variable) and peer attachment (moderator variable). Zero-order correlations revealed significant relationships between delinquent behavior and gender ($r = .227, p < .01$), age ($r = -.152, p < .01$), social desirability ($r = -.356, p <$

.01), peer involvement ($r = .226, p < .01$), and maternal attachment ($r = -.197, p < .01$). Zero-order correlations revealed significant relationships between peer attachment and gender ($r = -.179, p < .01$), social desirability ($r = .220, p < .01$), peer involvement ($r = .332, p < .01$), maternal attachment ($r = .243, p < .01$), and paternal attachment ($r = .169, p < .01$). Please see Table 3 in Appendix A for zero-order correlation matrix of study variables.

Two MANOVAs were next conducted to examine the mean differences in delinquent behavior (criterion variable) and peer attachment (moderator variable) by ethnicity and gender. No significant differences were identified for delinquent behavior, ($F(4,299) = .692, p > .05$), or peer attachment, ($F(4,299) = 1.374, p > .05$), as a function of ethnicity. Significant differences were identified for delinquent behavior, ($F(1,302) = 15.974, p < .001$), and peer attachment, ($F(1,302) = 12.609, p < .001$), as a function of gender. These results demonstrated that male participants endorsed significantly lower levels of peer attachment and a significantly higher frequency of engaging in delinquent behavior when compared to female participants.

Seventy-three participants (21%) reported that they had no father figure and thus did not have paternal attachment scores. Ten participants (3%) reported that they had no mother figure and thus did not have maternal attachment scores. Combined, seventy-nine (23%) reported that they had either no father or mother figure. Please see Table 4 in Appendix A for mother and father figure endorsements. A MANOVA was conducted to examine the mean differences in delinquent behavior (criterion variable), peer attachment (moderator variable), and maternal attachment by presence or absence of a father figure.

No significant differences were identified for delinquent behavior, ($F(1,294) = 1.498, p > .05$), peer attachment, ($F(1,294) = 1.686, p > .05$), or maternal attachment, ($F(1,294) = 0.170, p > .05$), as a function of presence or absence of a father figure.

Based on the preliminary analyses, age, social desirability, peer involvement, maternal attachment, and paternal attachment were controlled for in the primary analyses. Separate analyses were conducted for males and females, rather than controlling for gender in the primary analyses.

Primary Analyses

Hypothesis One

Higher levels of peer delinquency will be associated with higher levels of adolescent delinquent behavior.

Two hierarchical regression equations (males and females) were constructed to test the independent contribution of peer delinquency to the observed variance of delinquent behavior after controlling for demographics (age), maternal and paternal attachment, peer involvement, and social desirability. Participants' age was entered on block 1, social desirability and peer involvement were entered on block 2, maternal and paternal attachment were entered on block 3, and peer delinquency was entered on block 4. Control variables were entered into separate blocks according to the type of variable, demographics (age), attachment (maternal and paternal), and other (social desirability and peer involvement). Results indicated that peer delinquency significantly predicted delinquent behavior in males ($b^* = .587, p < .01$) and females ($b^* = .581, p < .01$). Please

see Tables 5 and 6 in Appendix A for regression equations for male and female participants.

Evaluation of hypothesis one indicated that peer delinquency was significantly related to both male and female adolescents' delinquent behavior after controlling for age, peer involvement, social desirability, maternal attachment and paternal attachment. Regression equations predicted a total of 40% of the variance in male delinquent behavior and 45% of the variance in female delinquent behavior. For males, social desirability ($b^* = -.216, p < .05$), peer involvement ($b^* = -.213, p < .05$), and peer delinquency ($b^* = .587, p < .01$) were significant independent predictors. For females, social desirability ($b^* = -.383, p < .01$) and peer delinquency ($b^* = .581, p < .01$) were significant predictors. Interestingly, peer involvement was not a significant predictor of female delinquent behavior.

Because maternal and paternal attachment were not significant predictors of delinquent behavior and twenty-three percent of the sample could not be used due to no endorsement of a mother or father figure, maternal and paternal attachment variables were excluded from further analyses.

Hypothesis Two

The level of peer attachment will moderate the relationship between peer delinquency and adolescent delinquent behavior.

Two hierarchical regression equations (males and females) were constructed to test the moderator relationship. For these equations both peer delinquency and peer attachment variables were centered. Centering was performed by subtracting the mean of

the predictor variable from the predictor variable raw values and subtracting the mean of the moderator variable from the moderator variable raw values (Aiken & West, 1991). By centering both the predictor and moderator variables before creating the interaction term, multicollinearity can be reduced, which can lead to difficulties in estimating regression coefficients (Aiken & West, 1991).

Participants age was entered on block 1, social desirability and peer involvement were entered on block 2, peer delinquency and peer attachment were entered on block 3, and the interaction term (peer delinquency X peer attachment) was entered on block 4. Please see Tables 7 and 8 for moderation analyses. Social desirability ($b^* = -.447$, $p < .01$), peer delinquency ($b^* = .499$, $p < .01$), and peer attachment ($b^* = .168$, $p < .05$) were significant predictors of female delinquent behavior. Thus, for females, lower levels of social desirability and higher levels of peer delinquency and peer attachment were associated with greater delinquent behavior. Social desirability ($b^* = -.241$, $p < .01$), peer involvement ($b^* = .256$, $p < .01$), and peer delinquency ($b^* = .557$, $p < .01$) were significant predictors of male delinquent behavior. Thus, for males, lower levels of social desirability and higher levels of peer involvement and peer delinquency were associated with greater delinquent behavior. Moderation analyses revealed that the centered interaction term was not significant for females ($b^* = -.042$, $p = .58$), although it approached significance for males ($b^* = .134$, $p = .07$). Therefore, peer attachment was not found to statistically moderate the relationship between peer delinquency and delinquent behavior for females, but approached significance for males.

Exploratory Analyses

Primary analyses identified a significant peer involvement main effect for male delinquent behavior and a significant peer attachment main effect for female delinquent behavior. Therefore, exploratory analyses were conducted to examine whether the relationships between peer involvement and delinquent behavior for males and peer attachment and delinquent behavior for females were mediated by peer delinquency.

For peer delinquency to qualify as a mediator, the following relationships must exist: (a) peer involvement / peer attachment must be significantly related to delinquent behavior, (b) peer involvement / peer attachment must be significantly related to peer delinquency, (c) peer delinquency must be significantly related to delinquent behavior after controlling for peer involvement / peer attachment, (d) the relationship between peer involvement / peer attachment and delinquent behavior is no longer significant after controlling for the relationships between peer delinquency and delinquent behavior.

To answer the question of whether peer delinquency mediated the association between peer involvement and delinquent behaviors for males, three regression equations were examined (Baron & Kenny, 1986). In all regression equations participants' age was entered on block 1 and social desirability was entered on block 2. The first regression equation examined the relationship between peer involvement and delinquent behavior for males (see Table 9). Results of this analysis indicated that peer involvement was significantly related to delinquent behavior ($b^* = .235, p < .01$), with 5% of the variance in delinquent behavior uniquely accounted for by peer involvement. The second regression equation examined the relationship between peer involvement and peer

delinquency for males (see Table 10). Results of this analysis indicated that peer involvement was significantly related to peer delinquency ($b^* = .222, p < .01$), with 5% of the variance in peer delinquency uniquely accounted for by peer involvement. In the third regression equation, with delinquent behavior as the criterion variable, peer involvement (independent variable) and peer delinquency (mediator variable) were entered simultaneously on block three (see Table 11). Here, 27% of the variance in delinquent behavior was accounted for with peer delinquency ($b^* = .523, p < .01$) as a significant predictor. Peer involvement ($b^* = .118, p = .087$) was not a significant predictor. Based on Baron & Kenny's (1986) methodology, peer delinquency was found to mediate the association between peer involvement and delinquent behavior for males. Additional post-hoc probing of the mediation effect (Holmbeck, 2002), further confirmed a significant mediational effect ($z = 2.78, p < .01$).

To answer the question of whether peer delinquency mediated the association between peer attachment and delinquent behaviors for females, three regression equations were examined (Baron & Kenny, 1986). In all regression equations participants' age was entered on block 1 and social desirability was entered on block 2. The first regression equation examined the relationship between peer attachment and delinquent behavior for females (see Table 12). Results of this analysis indicated that peer attachment was significantly related to delinquent behavior ($b^* = .179, p < .05$), with 4% of the variance in delinquent behavior uniquely accounted for by peer attachment. The second regression equation examined the relationship between peer attachment and peer delinquency for females (see Table 13). Results of this analysis indicated that peer attachment was not significantly related to peer delinquency ($b^* = .039, p = .637$). Because a significant

association was not found between peer attachment (independent variable) and peer delinquency (mediator variable), further mediation analyses were not performed.

Therefore, peer delinquency was not found to mediate the association between peer attachment and delinquent behavior for females.

CHAPTER IV

DISCUSSION

The present study examined the effects of peer delinquency and peer attachment on adolescent delinquent behavior by investigating two hypotheses. First, it was hypothesized that peer delinquency would be associated with adolescent delinquent behavior. This hypothesis was based on Oetting and Donnermyer's primary socialization theory. A positive relationship between these two factors was expected, specifically, having a greater proportion of delinquent peers would be associated with committing a greater number of delinquent behaviors. The second hypothesis was that the level of peer attachment would moderate the relationship between peer delinquency and adolescent delinquent behavior. This hypothesis was based on the integration of Hirschi's control theory and Oetting and Donnermyer's primary socialization theory. It was hypothesized that secure attachment to deviant peers would diminish the relationship between peer delinquency and adolescent delinquent behavior.

Results supported the predicted relationship stated in hypothesis one. Peer delinquency was significantly associated with delinquent behavior after controlling for age, social desirability, peer involvement, and maternal and paternal attachment. Specifically, greater peer delinquency was associated with a greater number of self-reported delinquent behaviors for both males and females. These results are quite

consistent with Oetting and Donnermyer's primary socialization theory, and with past empirical research (Agnew, 1991; Ary et al., 1999; Dishion et al., 1991; Elliot et al., 1985; Elliot & Menard, 1996; Patterson & Dishion, 1985; Synder et al., 1986; Warr, 1993). Thus, peer delinquency appears to indeed be a strong and consistent predictor of delinquent behavior.

The second hypothesis, which predicted that the level of peer attachment would moderate the relationship between peer delinquency and adolescent delinquent behavior, was not supported. Peer attachment did not significantly influence the relationship between peer delinquency and delinquent behavior. Specifically, peer attachment did not act to significantly increase or decrease the strength of the association between peer delinquency and delinquent behavior. Such findings are in contrast with Hirschi's control theory and the notion that secure attachment to deviant peers diminishes the relationship between peer delinquency and adolescent delinquent behavior.

Although a moderation affect for peer attachment was not supported, a significant peer attachment main effect was found for females. Results revealed that peer attachment was significantly associated with delinquent behavior. Specifically, greater peer attachment was associated with greater delinquent behavior in females. Though this finding was not predicted, it is consistent with Agnew's (1991) findings of a positive association between peer attachment and delinquent behavior, although Agnew's sample contained both males and females.

Notably, previous research investigating peer attachment has consistently found females to report higher levels of peer attachment (Armsden & Greenberg, 1987; Raja, McGee, & Stanton, 1992). Additionally, in the present study the examination of peer

attachment scores by gender revealed that on average, females reported significantly higher peer attachment scores. Researchers have attempted to explain this finding, citing gender differences in moral/psychosocial development. Raja et al. (1992) specifically cited Gilligan's (1982) assumptions that "women are oriented toward attachment and "connectedness" to others, whereas men are oriented toward individuation and "separatedness" from others" (in Colby & Damon, 1983, p. 474). Such data and theoretical assumptions raise the question of whether this finding of a peer attachment main effect for delinquent behavior is indeed a salient one or, simply a by-product of general female peer relations.

Exploratory analyses also revealed that the influence peer attachment exerts on delinquent behavior for females was not mediated by peer delinquency. This finding suggests that for females, greater peer attachment with delinquent peers was associated with a greater number of delinquent behaviors above and beyond the influence of peer delinquency. Thus, for females, greater peer attachment with delinquent peers and having a greater proportion of delinquent peers were associated with greater delinquent behavior, with both peer attachment and peer delinquency directly influencing delinquent behavior.

Although, a significant peer attachment main effect was not found for males, a significant peer involvement main effect was revealed. Results indicated that peer involvement was significantly associated with delinquent behavior. Specifically, greater peer involvement was associated with greater delinquent behavior in males. This finding is highly consistent with previous research (Brownfield & Thompson, 1991; Pabon et al., 1992). In the present study, the examination of peer involvement scores by gender revealed no significant gender differences. Therefore, these findings suggest that this

gender difference was specifically related to the construct of delinquent behavior.

Exploratory analyses further revealed that the association between peer involvement and delinquent behavior was mediated by peer delinquency. Thus, peer involvement was indirectly related to delinquent behavior, exerting its influence through peer delinquency.

The findings of a significant peer attachment main effect for females and a significant peer involvement main effect for males suggests that specific gender differences exist in the relationship between peer attachment, peer delinquency, and delinquent behavior. For males, greater involvement with delinquent peers and having a greater proportion of delinquent peers were associated with greater delinquent behavior, with peer delinquency mediating the relationship between peer involvement and delinquent behavior. For females, greater peer attachment with delinquent peers and having a greater proportion of delinquent peers were associated with greater delinquent behavior, with both peer attachment and peer delinquency directly influencing delinquent behavior. These findings indicate that although peer delinquency is a significant predictor of delinquent behavior for both males and females, gender differences do exist with regard to the nature of the adolescents' relationships with delinquent peers.

Another important finding of the present study was that social desirability was significantly associated with both male and female adolescents' delinquent behavior. Specifically, greater delinquent behavior was associated with decreased social desirability. This finding would suggest that adolescents engaging in more delinquent behavior are not seeking social approval. Indeed, it would indicate that these individuals openly endorse social disapproval. Thus, it is unlikely that delinquent adolescents purposefully attempt to present themselves in a socially desirable manner. Although the

specific relationship between social desirability and delinquent behavior has not been established in previous research, these findings intuitively make sense given the antisocial nature of most delinquent behaviors. Additionally, the finding of a negative association between social desirability and delinquent behavior may indicate that intrapersonal, as well as interpersonal constructs, are associated with adolescent delinquent behavior. This finding is consistent with Jessor and Jessor's (1977) theory of "problem behavior syndrome." Problem behavior theory (PBT) proposes that adolescents' nonconventionality in values is related to multiple problem behaviors. In the present study, low social desirability may be an indicator of nonconventional values.

Although the present findings are notable, a number of limitations do exist in the current study. First, all of the independent and dependent variables were measured via self-report. This not only raises the potential problem of method variance, but also the validity of participants' responses. Unfortunately, independent verification of participants' delinquent behavior and association with delinquent peers was not possible. Second, although the number of participants was adequate to detect changes in the dependent variable as a function of the independent variable, a larger sample size would have allowed for increased power and the ability to examine trends in the research findings. Additionally, due to missing data across study variables, it was not possible to utilize the entire sample size for all analyses. Third, this study was cross-sectional in nature and only represents a single measure of the variables in question. Therefore, the results can only reveal the current relationship between the study variables and cannot speak to the possible developmental relationship between peer attachment and peer delinquency.

In spite of the limitations, the current study has a number of strengths. First, this study measured the independent and dependent variables with instruments which have established, sound psychometric properties. This is particularly relevant in regard to the assessment of peer attachment. Previous research endeavors have utilized measurements of peer attachment that have lacked theoretical support and adequate psychometric properties. Second, this study was conducted with a sample of high-risk youth. This sample was representative of both genders and moderately diverse in regards to ethnicity. Third, this study was the first to examine the interactive effects of peer attachment and peer delinquency, while insuring use of the same peer reference group.

In conclusion, the present study revealed several important findings. First, peer delinquency was found to be a strong predictor of adolescent delinquent behavior for both male and female adolescents. This finding is consistent with previous cross-sectional and longitudinal research investigating the effects of peer delinquency. Second, support was not found for peer attachment moderating the positive association between peer delinquency and adolescent delinquent behavior. Third, low social desirability was found to be associated with increased delinquent behavior. Fourth, significant gender differences were found with regard to the influence of peer involvement and peer attachment on adolescent delinquent behavior. Peer attachment was found to be a significant and independent predictor of adolescent delinquent behavior for females. For females, greater peer attachment was associated with increased delinquent behavior. Lastly, peer delinquency was found to mediate the positive association between peer involvement and adolescent delinquent behavior for males.

The present study clearly demonstrated that more research is needed that directly examines the construct of parental and peer attachment with adolescents. When an adolescent has multiple parental figures (biological parents, stepparents, and grandparents) what is the best methodology to accurately assess parental attachment? Can a strong/secure attachment with one parental figure buffer the weak/insecure attachment of another attachment figure? Future research is needed to address these questions. Also, it is a common assumption that having a delinquent adolescent, who has delinquent peers, strengthen his/her association with non-delinquent peers will decrease his/her engagement in delinquent acts. Research should specifically investigate the relative influence of peer attachment and involvement with non-delinquent peers versus peer attachment and involvement with delinquent peers on adolescent delinquent behavior.

The findings of the present research have several potential implications for the development of adolescent intervention strategies. First, since it appears that the mechanism by which peer delinquency exerts its influence on delinquent behavior differs by gender, intervention strategies need to be developed which capitalize on these differences. For males, strategies should focus on decreasing the amount of involvement with delinquent peers, whereas with delinquent females, intervention strategies might focus on examining and reducing adolescents' attachment with delinquent peers. Additionally, intervention strategies may benefit from examining adolescents' level of social desirability, independent from peer influence.

In order for successful intervention and prevention strategies to be developed, several specific areas need to be further researched. Future studies should further

examine potential gender differences in delinquent peer relations. Longitudinal examination of how peer attachment and peer involvement influence peer delinquency and delinquent behavior is also needed. The role that adolescents' level of social desirability influences peer delinquency and involvement in delinquent acts also needs to be examined longitudinally. Is low social desirability and unconventional values the same or related constructs? Does low social desirability lead to involvement with delinquent peers, or is low social desirability the result of involvement with delinquent peers and engaging in delinquent acts? Additionally, future research should examine the influence of peer delinquency, peer involvement, and peer attachment on other problem behaviors, such as adolescent sexual risk-taking and drug use.

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TABLES

TABLE 1
DESCRIPTIVE STATISTICS

Demographic Parameters	<u>n</u>	<u>Percent</u>
Gender		
Male	202	59
Female	141	41
Ethnicity		
African-American	157	46
Caucasian	123	36
Hispanic	26	7
Native American	23	7
Asian	3	1
Other	10	3
Education Completed		
< 9 th Grade	34	10
9 th – 11 th Grade	221	65
12 th Grade	64	19
GED	19	6
Family Make-Up		
Single Parent	103	31
Biological Parents	47	14
Biological & Step Parent	81	24
Parents and Grandparents	6	1
Parents, Grandparents, Relatives	12	4
Other	41	12
On Their Own	47	14

TABLE 2
DESCRIPTIVE STATISTICS FOR STUDY VARIABLES

Study Variables	Females		Males	
	M	SD	M	SD
Attachment Parameters				
Maternal Attachment (n = 333)	68.57	22.57	70.91	19.89
Paternal Attachment (n = 267)	58.65	26.39	60.38	22.15
Peer Attachment (n = 339)	73.99	16.36	68.00	16.22
Peer Parameters				
Peer Involvement (n = 338)	9.94	4.27	10.08	4.12
Peer Delinquency (n = 339)	9.36	8.02	12.55	9.27
Other Parameters				
Social Desirability (n = 298)	17.69	5.09	17.68	5.38
Delinquency (n = 307)	38.85	122.50	163.69	359.36
Transformed Delinquency	0.94	0.69	1.34	0.95

TABLE 3
ZERO-ORDER CORRELATIONS FOR
STUDY VARIABLES

Measure	1	2	3	4	5	6	7	8
1. PRDEL	-							
2. DEL	.596**	-						
3. PR-ATT	-.104	-.011	-					
4. Gender	.177**	.227**	-.179**	-				
5. Age	-.160**	-.152**	-.026	.015	-			
6. SOCDES	-.360**	-.356**	.220**	-.001	.118*	-		
7. INVOL	.298**	.226**	.332**	.017	-.091	-.133*	-	
8. M-ATT	-.208**	-.197**	.243**	.056	.039	.323**	.013	-
9. P-ATT	-.125*	-.126	.169**	.036	.058	.178**	.084	.384**

Note: PRDEL = Peer Delinquency Scale; DEL = Delinquency Scale; PR-ATT = Peer Attachment Scale; Gender (1=male, 0=female); Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; M-ATT = Maternal Attachment Scale; P-ATT = Paternal Attachment Scale; * $p < .05$; ** $p < .01$.

TABLE 4
MOTHER AND FATHER FIGURE ENDORSEMENTS

	Mother		Father	
	#	%	#	%
Individual Endorsed				
Biological Parent	252	74.6	134	39.4
Adoptive Parent	10	3.0	12	3.5
Step Parent	6	1.8	51	15
Foster Parent	3	0.9	4	1.2
Grand Parent	31	9.2	19	5.6
Aunt/Uncle	18	5.3	22	6.5
Sister/Brother	7	2.1	21	6.1
Counselor	1	0.3	0	0
Minister	0	0	2	0.6
Youth Home Worker	0	0	2	0.3
No Figure	10	2.9	73	21.5

TABLE 5
 PRIMARY ANALYSES EXAMINING THE
 INFLUENCE OF PEER DELINQUENCY
 ON DELINQUENT BEHAVIOR:
 MALES (N = 109)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.005	.005
Age	-.033	.044	-.074		
Block 2				.122	.117**
SOCDES	-.041	.018	-.216*		
INVOL	.050	.022	.213*		
Block 3				.141	.019
M-ATT	-.004	.005	-.091		
P-ATT	-.003	.005	-.080		
Block 4				.396	.255**
PR-DEL	.060	.009	.587**		

Note: Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; M-ATT = Maternal Attachment Scale; P-ATT = Paternal Attachment Scale; PR-DEL = Peer Delinquency Scale; * $p < .05$; ** $p < .01$. Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 6
 PRIMARY ANALYSES EXAMINING THE
 INFLUENCE OF PEER DELINQUENCY
 ON DELINQUENT BEHAVIOR:
 FEMALES (N = 89)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.020	.020
Age	-.050	.038	-.140		
Block 2				.209	.190**
SOCDES	-.053	.015	-.383**		
INVOL	.022	.018	.127		
Block 3				.221	.012
M-ATT	.001	.003	.031		
P-ATT	-.003	.003	-.114		
Block 4				.451	.230**
PR-DEL	.053	.009	.581**		

Note: Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; M-ATT = Maternal Attachment Scale; P-ATT = Paternal Attachment Scale; PR-DEL = Peer Delinquency Scale; * $p < .05$; ** $p < .01$. Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 7
 PRIMARY MODERATION ANALYSES EXAMINING
 THE INFLUENCE OF PEER DELINQUENCY AND
 PEER ATTACHMENT ON DELINQUENT
 BEHAVIOR: MALES (N = 150)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.011	.011
Age	-.050	.039	-.106		
Block 2				.146	.135**
SOCDES	-.040	.013	-.241**		
INVOL	.060	.018	.256**		
Block 3				.392	.246**
PR-DEL©	.060	.008	.577**		
PR-ATT©	.005	.004	.091		
Block 4				.405	.013
Product	.0006	.000	.134		

Note: Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; PR-ATT© = Centered Peer Attachment Scale; PR-DEL© = Centered Peer Delinquency Scale; Product = PR-DEL© X PR-ATT©; * $p < .05$; ** $p < .01$. Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 8
 PRIMARY MODERATION ANALYSES EXAMINING
 THE INFLUENCE OF PEER DELINQUENCY AND
 PEER ATTACHMENT ON DELINQUENT
 BEHAVIOR: FEMALES (N = 112)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.015	.015
Age	-.044	.035	-.123		
Block 2				.262	.247**
SOCDES	-.062	.012	-.447**		
INVOL	.024	.014	.144		
Block 3				.451	.189**
PR-DEL©	.045	.008	.499**		
PR-ATT©	.007	.003	.168*		
Block 4				.452	.002
Product	.0002	.000	-.042		

Note: Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; PR-ATT© = Centered Peer Attachment Scale; PR-DEL© = Centered Peer Delinquency Scale; Product = PR-DEL© X PR-ATT©; * $p < .05$; ** $p < .01$. Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 9
 EXPLORATORY MEDIATION ANALYSES EXAMINING
 THE INFLUENCE OF PEER INVOLVEMENT
 ON DELINQUENT BEHAVIOR:
 MALES (N = 152)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.012	.012
Age	-.005	.039	-.108		
Block 2				.088	.076**
SOCDES	-.047	.013	-.277**		
Block 3				.142	.054**
INVOL	.055	.018	.235**		

Note: Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; * $p < .05$; ** $p < .01$.

Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 10
 EXPLORATORY MEDIATION ANALYSES EXAMINING
 THE INFLUENCE OF PEER INVOLVEMENT
 ON PEER DELINQUENCY:
 MALES (N = 152)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.011	.011
Age	-.468	.367	-.103		
Block 2				.170	.160**
SOCDES	-.641	.120	-.400**		
Block 3				.219	.049**
INVOL	.492	.162	.222**		

Note: Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; *p<.05; **p<.01.

Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 11
 EXPLORATORY MEDIATION ANALYSES EXAMINING
 THE INFLUENCE OF PEER INVOLVEMENT AND
 PEER DELINQUENCY ON DELINQUENT
 BEHAVIOR: MALES (N = 152)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.012	.012
Age	-.051	.039	-.108		
Block 2				.088	.076**
SOCDES	-.047	.013	-.277**		
Block 3				.356	.268**
INVOL	.028	.016	.118		
PR-DEL	.055	.008	.523**		

Note: Age = Age in years; SOCDES = Social Desirability Scale; INVOL = Peer Involvement Scale; PR-DEL = Peer Delinquency Scale; * $p < .05$; ** $p < .01$. Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 12
 EXPLORATORY MEDIATION ANALYSES EXAMINING
 THE INFLUENCE OF PEER ATTACHMENT ON
 DELINQUENT BEHAVIOR:
 FEMALES (N = 113)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.015	.015
Age	-.045	.034	-.123		
Block 2				.242	.227**
SOCDES	-.067	.012	-.482**		
Block 3				.274	.031*
PR-ATT	.077	.004	.179*		

Note: Age = Age in years; SOCDES = Social Desirability Scale; PR-ATT = Peer Attachment Scale; * $p < .05$; ** $p < .01$.

Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

TABLE 13
 EXPLORATORY MEDIATION ANALYSES EXAMINING
 THE INFLUENCE OF PEER ATTACHMENT ON
 PEER DELINQUENCY:
 FEMALES (N = 113)

Variables	B	SE B	b*	R ²	R ² Change
Block 1				.124	.124**
Age	-1.433	.362	-.352		
Block 2				.275	.151**
SOCDES	-.607	.127	-.393**		
Block 3				.277	.001
PR-ATT	.019	.039	.039		

Note: Age = Age in years; SOCDES = Social Desirability Scale; PR-ATT = Peer Attachment Scale; *p<.05; **p<.01.

Differences in sample size between regression equation and original sample size was due to missing data across the study variables.

APPENDIXES

Appendix A:
Demographics

(9) lived on your own

11. How many children under age 18 (other than yourself) were living in your home? _____
12. How many adults (other than yourself) were living in your home? _____
13. Circle below the adults (18 or older) that were living in your home prior to you coming to Job Corps.
14. Beside each adult that was living in your home, place a number indicating their job status based on the Job Status categories given below.
15. Beside each adult that was living in your home, place a number indicating their highest education obtained based on the Highest Education Obtained categories given below.

<u>Adults</u>	<u>Job Status</u>	<u>Highest Education</u>
Mother	_____	_____
Father	_____	_____
Stepmother	_____	_____
Stepfather	_____	_____
Grandmother	_____	_____
Grandfather	_____	_____
Other (specify) _____	_____	_____
Other (specify) _____	_____	_____

Job status:

- (1) employed full time
- (2) employed part time (less than 30 hours per week)
- (3) unemployed
- (4) retired
- (5) disability
- (6) homemaker

Highest Education Obtained:

- (1) Less than 12 years
- (2) 12 years (high school diploma)
- (3) Vocational degree (e.g., beauty school, technical/business/trade school)
- (4) College degree - Associate
- (5) College degree - Bachelor's
- (6) College degree - Master's
- (7) College degree-Doctoral (Ph.D, M.D., J.D.)
- (8) Don't know

Appendix B:

National Youth Survey -Peer Delinquency (NYS-PD)

Job Corps Oklahoma State University	Code #:
Form: NYS-PD	

- A) During the past year, was there a particular group of friends that you ran around with or spent most of your time? **Yes** or **No**

If you answered **No**, did you have any close friends? **Yes** or **No**

- B) During the past year, on the average, how many weekday afternoons, Monday through Friday, from 5:00 p.m. or the end of work to dinner, have you spent with your friends? (please circle one number) **0 1 2 3 4 5**
- C) During the past year, on the average, how many weekday evenings, Monday through Friday, from dinnertime to bedtime, have you spent with your friends? (please circle one number) **0 1 2 3 4 5**
- D) During the past year, on the weekends, how much time have you generally spent with your friends? (please circle one)
 A Great Deal Quite A Bit Some Not Too Much Very Little
- E) During the past year, did you consider yourself a member of a gang? **Yes** or **No**

Think of your friends. During the last year how many of them have:	<u>All of Them</u>	<u>Most of Them</u>	<u>Some of Them</u>	<u>Very Few of Them</u>	<u>None of Them</u>
1) cheated at school or on their income tax?	A	B	C	D	E
2) purposely damaged or destroyed property that did not belong to them?	A	B	C	D	E
3) used marijuana or hashish?	A	B	C	D	E
4) stolen something worth less than \$5?	A	B	C	D	E
5) hit or threaten to hit someone without any reason?	A	B	C	D	E
6) used alcohol?	A	B	C	D	E
7) broken into a vehicle or building to steal something?	A	B	C	D	E
8) sold hard drugs such as heroin, cocaine, and LSD?	A	B	C	D	E
9) stolen something worth more than 50\$	A	B	C	D	E
10) suggested you do something that was against the law?	A	B	C	D	E

Appendix C:

Inventory of Parent and Peer Attachment (IPPA)

Job Corps Oklahoma State University
Form: IPPA Code #:

1. This question refers to the family in which you were raised (i.e., where you lived the majority of your childhood and adolescence). Please place a **X** beside the circumstances in which you lived and estimate the number of years you lived in each circumstance.

What was the make up of the family in which you were raised?

- | | |
|--|---|
| ___(1) single mother ___# of years | ___(6) other family member ___# of years |
| ___(2) single father ___# of years | ___(7) youth home (orphanage) ___# of years |
| ___(3) both parents ___# of years | ___(8) no home (lived in the "streets") ___# of years |
| ___(4) mother and stepfather ___# of years | ___(9) foster family(s) ___# of years |
| ___(5) father and stepmother ___# of years | ___(10) on my own ___# of years |

2. On the attached questionnaire you will be asked questions about your relationship with the individual who has acted as your mother or father figure. It is important for us to know who you consider to be your mother and father figure.

Please circle the person which you considered to be your mother figure. That is, the female you see as having most influenced you.

- | | | |
|-----------------------|-----------------|------------------------------|
| (1) biological mother | (5) grandmother | (9) minister |
| (2) adoptive mother | (6) aunt | (10) youth home worker |
| (3) stepmother | (7) sister | (11) I have no mother figure |
| (4) foster mother | (8) counselor | |

Please circle the person which you consider to be your father figure. That is, the male you see as having most influenced you.

- | | | |
|-----------------------|-----------------|------------------------------|
| (1) biological father | (5) grandfather | (9) minister |
| (2) adoptive father | (6) uncle | (10) youth home worker |
| (3) stepfather | (7) brother | (11) I have no father figure |
| (4) foster father | (8) counselor | |

Please think about the individuals you have selected here as you answer the following questions .

Directions: Some of the following statements ask about your feelings about your mother or the person who acted as your mother figure. If you have more than one person acting as your mother (e.g., natural mother and step-mother) answer the questions for the one you feel has most influenced you. Please read each statement and circle the ONE number that tells how **true the statement is for you now**.

	Never	Seldom	Sometimes	Often	Always
1. My mother respects my feelings	0	1	2	3	4
2. I feel my mother does a good job as my mother.	0	1	2	3	4
3. I wish I had a different mother.	0	1	2	3	4
4. My mother accepts me as I am.	0	1	2	3	4
5. I like to get my mother's point of view on things I'm concerned about.	0	1	2	3	4
6. I feel it's no use letting my feelings show.	0	1	2	3	4

	Never	Seldom	Sometimes	Often	Always
7. My mother can tell when I'm upset about something.	0	1	2	3	4
8. Talking over problems with my mother makes me feel ashamed or foolish.	0	1	2	3	4
9. My mother expects too much from me.	0	1	2	3	4
10. I get upset easily around my mother.	0	1	2	3	4
11. I get upset a lot more than my mother knows about.	0	1	2	3	4
12. When we discuss things, my mother cares about my point of view.	0	1	2	3	4
13. My mother trusts my judgment.	0	1	2	3	4
14. My mother has her own problems, so I don't bother her with mine.	0	1	2	3	4
15. My mother helps me to understand myself better.	0	1	2	3	4
16. I tell my mother about my problems and troubles.	0	1	2	3	4
17. I feel angry with my mother.	0	1	2	3	4
18. I don't get much attention from my mother.	0	1	2	3	4
19. My mother helps me talk about my difficulties.	0	1	2	3	4
20. My mother understands me.	0	1	2	3	4
21. When I am angry about something, my mother tries to be understanding.	0	1	2	3	4
22. I trust my mother.	0	1	2	3	4
23. My mother doesn't understand what I'm going through these days.	0	1	2	3	4
24. I can count on my mother when I need to get something off my chest.	0	1	2	3	4
25. If my mother knows something is bothering me, she ask me about it.	0	1	2	3	4

This part asks about your feelings about your father, or the man who acted as your father figure. If you have more than one person acting as your father, (e.g., natural and step-father) answer the question for the one who has most influenced you.

	Never	Seldom	Sometimes	Often	Always
1. My father respects my feelings	0	1	2	3	4
2. I feel my father does a good job as my father.	0	1	2	3	4
3. I wish I had a different father.	0	1	2	3	4
4. My father accepts me as I am.	0	1	2	3	4
5. I like to get my father's point of view on things I'm concerned about.	0	1	2	3	4
6. I feel it's no use letting my feelings show.	0	1	2	3	4
7. My father can tell when I'm upset about something.	0	1	2	3	4
8. Talking over problems with my father makes me feel ashamed or foolish.	0	1	2	3	4
9. My father expects too much from me.	0	1	2	3	4
10. I get upset easily around my father.	0	1	2	3	4
11. I get upset a lot more than my father knows about.	0	1	2	3	4
12. When we discuss things, my father cares about my point of view.	0	1	2	3	4
13. My father trust my judgment.	0	1	2	3	4
14. My father has his own problems, so I don't bother him with mine.	0	1	2	3	4
15. My father helps me to understand myself better.	0	1	2	3	4
16. I tell my father about my problems and troubles.	0	1	2	3	4
17. I feel angry with my father.	0	1	2	3	4
18. I don't get much attention from my father.	0	1	2	3	4
19. My father helps me talk about my difficulties.	0	1	2	3	4
20. My father understands me.	0	1	2	3	4
21. When I am angry about something my father tries to be understanding.	0	1	2	3	4
22. I trust my father.	0	1	2	3	4

	Never	Seldom	Sometimes	Often	Always
23. My father doesn't understand what I'm going through these days.	0	1	2	3	4
24. I can count on my father when I need to get something off my chest.	0	1	2	3	4
25. If my father knows something is bothering me, he asks me about it.	0	1	2	3	4

This part asks about your feelings about your relationships with your friends. Please read each statement and circle the ONE number that tells how **true the statement is for you now**. You have already answered some questions about your friends' behavior, please think about those friends when you answer the following questions.

	Never	Seldom	Sometimes	Often	Always
1. I like to get my friend's point of view on things I'm concerned about.	0	1	2	3	4
2. My friends can tell when I'm upset about something.	0	1	2	3	4
3. When we discuss things, my friends consider my point of view.	0	1	2	3	4
4. Talking over my problems with my friends makes me feel ashamed or foolish.	0	1	2	3	4
5. I wish I had different friends.	0	1	2	3	4
6. My friends understand me.	0	1	2	3	4
7. My friends encourage me to talk about my difficulties.	0	1	2	3	4
8. My friends accept me as I am.	0	1	2	3	4
9. I feel the need to be in touch with my friends more often.	0	1	2	3	4
10. My friends don't understand what I'm going through these days.	0	1	2	3	4
11. I feel alone or apart when I am with my friends.	0	1	2	3	4
12. My friends listen to what I have to say.	0	1	2	3	4
13. I feel my friends are good friends.	0	1	2	3	4
14. My friends are fairly easy to talk to.	0	1	2	3	4
15. When I am angry about something, my friends try to be understanding.	0	1	2	3	4

	Never	Seldom	Sometimes	Often	Always
16. My friends help me to understand myself better.	0	1	2	3	4
17. My friends care about how I am.	0	1	2	3	4
18. I feel angry with my friends.	0	1	2	3	4
19. I cannot count on my friends when I need to get something off my chest.	0	1	2	3	4
20. I trust my friends.	0	1	2	3	4
21. My friends respect my feelings.	0	1	2	3	4
22. I get upset a lot more than my friends know about.	0	1	2	3	4
23. It seems as if my friends are irritated with me for no reason	0	1	2	3	4
24. I tell my friends about my problems and troubles	0	1	2	3	4
25. If my friends know something is bothering me, they ask me about it.	0	1	2	3	4

Appendix D:

Marlowe-Crowne Social-Desirability Scale (MCSDS)

Job Corps Oklahoma State University	Form: MCSDS	Code #:
--	-------------	---------

Instructions:

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally.

	False	True
1. Before voting I thoroughly investigate the qualifications of all the candidates.	F	T
2. I never hesitate to go out of my way to help someone in trouble.	F	T
3. It is sometimes hard for me to go on with my work if I am not encouraged.	F	T
4. I have never intensely disliked anyone.	F	T
5. On occasion I have had doubts about my ability to succeed in life.	F	T
6. I sometimes feel resentful when I don't get my way.	F	T
7. I am always careful about my manner of dress.	F	T
8. My table manners at home are as good as when I eat out in a restaurant.	F	T
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.	F	T
10. On a few occasions, I have given up doing something because I thought too little of my ability.	F	T
11. I like to gossip at times.	F	T
12. There have been times when I felt like rebelling against people in authority even though I knew they were right.	F	T
13. No matter who I'm talking to, I'm always a good listener.	F	T
14. I can remember "playing sick" to get out of something.	F	T

- | | | |
|--|---|---|
| 15. There have been occasions when I took advantage of someone. | T | F |
| 16. I'm always willing to admit it when I make a mistake. | T | F |
| 17. I always try to practice what I preach. | T | F |
| 18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people. | T | F |
| 19. I sometimes try to get even, rather than forgive and forget. | T | F |
| 20. When I don't know something I don't at all mind admitting it. | T | F |
| 21. I am always courteous, even to people who are disagreeable. | T | F |
| 22. At times I have really insisted on having things my own way. | T | F |
| 23. There have been occasions when I felt like smashing things. | T | F |
| 24. I would never think of letting someone else be punished for my wrongdoings. | T | F |
| 25. I never resent being asked to return a favor. | T | F |
| 26. I have never been irked when people expressed ideas very different from my own. | T | F |
| 27. I never make a long trip without checking the safety of the car. | T | F |
| 28. There have been times when I was quite jealous of the good fortune of others. | T | F |
| 29. I have almost never felt the urge to tell someone off. | T | F |
| 30. I am sometimes irritated by people who ask favors of me. | T | F |
| 31. I have never felt that I was punished without cause. | T | F |
| 32. I sometimes think when people have a misfortune they only got what they deserved. | T | F |
| 33. I have never deliberately said something that hurt someone's feelings. | T | F |

Appendix E:

National Youth Survey-Delinquency (NYS-DEL)

Job Corps Oklahoma State University
Form: NYS-DEL Code #:

Directions: Please respond to all of the following questions with an answer that best represents your own behavior. Please be sure to record an actual number for each item. Remember that your responses will be **kept completely private**.

How many times in the last year have you:

1. Purposely damaged or destroyed property belonging to your parents or other family members? _____
2. Purposely damaged or destroyed property belonging to a school? _____
3. Purposely damaged or destroyed other property that did not belong to you (not counting family or school property)? _____
4. Stolen (or tried to steal) a motor vehicle, such as a car or a motorcycle? _____
5. Stolen (or tried to steal) something worth more than \$50? _____
6. Knowingly bought, sold, or held stolen goods (or tried to do any of these)? _____
7. Carried a hidden weapon other than a plain pocket knife? _____
8. Stolen (or tried to steal) things worth less \$5 or less? _____
9. Attacked someone with the idea of seriously hurting or killing him/her? _____
10. Been paid for having sexual relations with someone? _____
11. Been involved in gang fights? _____
12. Sold marijuana ("pot," "grass," "hash)? _____
13. Hit (or threatened to hit) a teacher or other adults? _____
14. Hit (or threatened to hit) one of your parents or family members? _____
15. Hit (or threatened to hit) other students or your peers? _____
16. Been loud, rowdy, or unruly in a public place (disorderly conduct)? _____

17. Sold hard drugs, such as heroin, cocaine, and LSD? _____
18. Taken a vehicle for a ride (drive) without the owner's permission? _____
19. Purposely damaged or destroyed property belonging to your parents or other family members? _____
20. Purposely damaged or destroyed property belonging to a school? _____
21. Purposely damaged or destroyed other property that did not belong to you (not counting family or school property)? _____
22. Stolen (or tried to steal) a motor vehicle, such as a car or a motorcycle? _____
23. Stolen (or tried to steal) something worth more than \$50? _____
24. Knowingly bought, sold, or held stolen goods (or tried to do any of these)? _____
25. Carried a hidden weapon other than a plain pocket knife? _____
26. Stolen (or tried to steal) things worth less \$5 or less? _____
27. Attacked someone with the idea of seriously hurting or killing him/her? _____
28. Been paid for having sexual relations with someone? _____
29. Been involved in gang fights? _____
30. Sold marijuana ("pot," "grass," "hash)? _____
31. Hit (or threatened to hit) a teacher or other adults? _____
32. Hit (or threatened to hit) one of your parents or family members? _____
33. Hit (or threatened to hit) other students or your peers? _____
34. Been loud, rowdy, or unruly in a public place (disorderly conduct)? _____
35. sold hard drugs, such as heroin, cocaine, and LSD? _____
36. Taken a vehicle for a ride (drive) without the owner's permission? _____
37. Had (or tried to have) sexual relations with someone against their will? _____
38. Used force (strong-arm methods) to get money or things from other students or your peers? _____

39. Used force (strong-arm methods) to get money or things from a teacher or other adults at school? _____
40. Used force (strong-arm methods) to get money or things from other people (not students, teachers, or peers)? _____
41. Stolen (or tried to steal) things worth between \$5 and \$50? _____
42. Broken into a building or vehicle (or tried to break in) to steal something or just look around? _____
43. Begged for money or things from strangers? _____

Oklahoma State University
Institutional Review Board

Protocol Expires: 11/16/00

Date : Tuesday, September 12, 2000

IRB Application No AS98065

Proposal Title: PSYCHOLOGICAL FUNCTIONING ADOLESCENTS AND YOUNG ADULTS IN
RESIDENTIAL VOCATIONAL TRAINING

Principal
Investigator(s) :

S. Gillaspy
215 N Murray
Stillwater, OK 74078

Reviewed and
Processed as: Full Board

Approval Status Recommended by Reviewer(s) : Approved

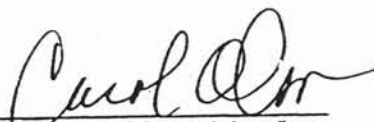
Modification

Please note that the protocol expires on the following date which is one year from the date of the approval of the original protocol:

Protocol Expires: 11/16/00

1. Adolescents form: #2 -- change "me" to "I" before using.

Signature :



Carol Olson, Director of University Research Compliance

Tuesday, September 12, 2000
Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA 2

Stephan Ross Gillaspay

Candidate for the Degree of

Master of Science

Thesis: PEER RELATIONS: EFFECTS OF PEER DELINQUENCY AND
ATTACHMENT ON DELINQUENT BEHAVIOR IN ADOLESCENCE

Major Field: Psychology

Biographical:

Education: Graduated from Russellville High School, Russellville, Arkansas in May, 1989; received Bachelor of Arts Degree in Psychology with Distinction from Hendrix College, Conway, Arkansas in June, 1993. Completed the requirements for Master of Science Degree at Oklahoma State University in August, 2002.

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