

Gender Differences in the Predictors of Juvenile Delinquency

Assessing the Generality-Specificity Debate

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At the heart of the gender-specificity debate is the argument that gender-neutral theories cannot adequately explain female delinquency. Instead, it has been asserted that theories should incorporate risk factors that capture females' unique experiences. In this context, the current study uses data from the National Longitudinal Survey of Adolescent Health to address the generality-specificity debate. The analysis includes variables not only from traditional criminological theories and the newer life-course approach but also from the feminist perspective. Results from multivariate analyses show that although there are some similarities in the predictors of male and female delinquency, differences also emerged. Variables measuring general strain and involvement are stronger predictors for males, whereas only attachment to school is stronger for females. One feminist theory variable and one life-course variable exhibit stronger effects in the models for females. The implications of these findings and suggestions for future research are also addressed.

Keywords: *gender; delinquency; generality-specificity; feminist; life course*

The gender gap in offending is well documented. Even with the increase in female offending over the past several decades, males still comprise about 76% of arrestees (Federal Bureau of Investigation, 2004) and 93% of state and federal prison inmates (Harrison & Beck, 2004). Given this discrepancy in participation rates in crime, it is not surprising then that when seeking to explain the causes of crime, theories have been developed to address this largely male phenomenon.

Feminist scholars have criticized existing explanations of crime as theories conceived by male criminologists to explain male criminality. In addition, they have asserted that because many of these theories are set forth as general theories, they are inherently flawed because

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they ignore the reality that women have experiences that are unique or specific to their gender. To adequately illuminate females' participation in criminal behavior, these scholars claim that specific theories must be designed that incorporate the unique experiences that contribute to women's criminality.

Other theorists, however, have argued that the same sources or predictors of criminal behavior are largely, if not fully, the same for males and females. They attribute the call for gender-specific theories not to a careful reading of the extant science but to the embrace of feminist ideology. Instead, these scholars favor the continued exploration of the predictors of criminal behavior, regardless of gender, and the continued creation of general theories of crime. Consequently, this disagreement has spurred the debate over whether general or gender-specific theories should be created and applied to delinquency.

In the context of this debate, research into the etiology of offending has assessed whether traditional criminological theories can in fact explain females' crime and delinquency. In addition, feminist researchers have examined whether concepts and characteristics central to the female experience are related to offending. Although instructive, these tests have been limited in their ability to resolve the generality-specificity debate for two key reasons. First, despite the many tests that have been performed, there is no consensus as to whether gender differences in the predictors of delinquency and crime exist. An overall examination of the extant research suggests that many of the predictors of male and female offending are similar; however, there are some factors that differentially influence female and male offending.

Second, most of the research examining gender differences in the etiology of offending has examined theories within one perspective. In particular, research has not been conducted that, within a single analysis, has used variables from feminist theory, traditional criminological theory, and the life-course perspective. As a result, variables that are found to be related to female offending differently from male offending may prove to be insignificant in more comprehensive examinations.

The current study attempts to address the generality-specificity debate by conducting such a comprehensive test. As such, using a nationally representative sample of male and female adolescents, this study endeavors to add to this debate by including variables from three theoretical traditions. To begin, the empirical research that has been conducted addressing the generality-specificity debate is discussed. Findings regarding the predictors of offending for males and females from each theoretical perspective—feminist theory, traditional criminological theory, and the life-course perspective—are highlighted.

Feminist Approach to Female Delinquency

Much of the research testing theories of crime has been carried out on samples of males, both adult and adolescent. Without clear evidence that these theories explain female criminality, many scholars were unconvinced of the generality of the causal hypotheses being offered. Instead, feminist scholars argued that a complete explanation must take into account the differential socialization of males and females and the ways in which gender structures society and individual experiences (Daly & Chesney-Lind, 1988). They noted as well that although the factors that precede delinquency may be similar for males and

females, the processes and mechanisms that bring about this behavior may indeed be gendered. As a result, feminist scholars proposed that the pathway or the events that lead up to offending may be dissimilar across gender.

Pathways to Offending

Among the most salient variables in feminist models of females' pathways to crime are history of victimization, depression, and supervision. Regardless of the specific explanatory variables included, it is claimed that a female's pathway to crime is necessarily rooted in her gendered socialization and the male-centered society in which she lives. To investigate these propositions, empirical research has been performed that has attempted to uncover whether the genesis for crime is similar for males and females.

Abuse and victimization. Research suggests that female children are at a higher risk of being abused than male children (Holsinger, 2000; Walker, Bonner, & Kaufman, 1988), with some research estimating that 34% of girls will be abused by the time they reach adulthood (Benson, 1990). The negative consequences associated with abuse may also vary across gender. Generally, research suggests that childhood and adolescent abuse are more closely related to offending and running away from home for females than males (Chesney-Lind & Shelden, 1998; Jones, Gruber, & Timbers, 1981; McCabe, Lansing, Garland, & Hough, 2002; McClellan, Farabee, & Crouch, 1997; Miller, 1993; Siegel & Williams, 2003; Spohn, 2000; Welsh, Archambault, Janus, & Brown, 1995).

In addition to childhood abuse, victimization experiences are related to a host of negative outcomes, including offending, in that victims of crime are often also perpetrators of crime (Sampson & Lauritsen, 1990). Being the victim of violent and property crimes in adolescence is related to assault and theft offending in adolescence and adulthood (Menard, 2002); little research, however, has examined gender differences in the effects of victimization on later offending (Simourd & Andrews, 1994).

One study investigating this link was conducted using self-report data from school children in one city in England (Mawby, 1980). It was found that being the victim of crime (four types of thefts and one form of assault) was correlated with participation in delinquency, although the relationship between delinquency and victimization did not significantly differ across gender.

Overall, the research on abuse suggests that it may indeed be a precursor to criminal involvement. It is likely that abuse, and especially sexual abuse, is a risk factor for female offending. It is less clear, however, what role being the victim of a crime may play in leading males and females into criminal activity.

Depression. Depression is associated with a host of negative behavioral outcomes, one of which is criminal behavior. Feminist researchers assert that depression is particularly relevant for females and their offending.

In this regard, several studies have compared samples of male and female offenders in terms of their depressive symptomology. In general, these studies show that females are more likely than their male counterparts to suffer from depression¹ (Calhoun, 2001), mood

disorders (McCabe, et al. 2002), internalizing symptomology (Aalsma & Lapsley, 2001), and suicide attempts (Miller, 1994). For example, Miller (1994) discovered that female juvenile offenders were more likely to have suicidal ideation and behaviors than male juvenile offenders.

Supervision. One distinction between males' and females' socialization experiences is the amount of supervision to which each gender is subjected. Research generally finds that female children are supervised more closely than their male peers (Bottcher, 1995; Cernkovich & Giordano, 1987; Giordano, 1978; Hagan & Kay, 1990; McCarthy, Hagan, & Woodward, 1999; Smith & Paternoster, 1987; Svensson, 2003). The heightened supervision of female children may in part limit their movement outside of the home, may reflect the existence of stringent curfews, and may limit their interactions with peers. In addition to reducing the likelihood of sexual activity and teen pregnancy, monitoring and supervising female youth may also serve another positive function: It may reduce their participation in delinquency. This influence may be direct, or it may be indirect through its effect on involvement with peers (Svensson, 2003) or risk preferences (Hagan, 1988; Hagan & Kay, 1990).

Research on power control examines the impact of supervision on delinquency (McCarthy et al., 1999). In a study of the violation of patents and copyrights by adolescents in 9th to 12th grade, Hagan and Kay (1990) report that sons were less likely to be instrumentally controlled by their parents than daughters and that this lack of control was related to a greater number of violations committed by the sons. Using separate models for males and females, other researchers have shown that supervision by parents is more strongly related to delinquent participation for male children (Cernkovich & Giordano, 1987; Heimer & De Coster, 1999).

Considered together, research using variables central to feminist theory suggest that there are likely differential causes of delinquency for males and females. Given the divergent findings, it is difficult to make definitive conclusions regarding the necessity of gender-specific theories. It is clear that more research using feminist theory variables is needed.

Tests of Traditional Criminological Theories

In addition to variables central to feminist theory explanations, variables relevant to traditional criminological theories have also been used to explore gender differences in offending. In particular, measures derived from strain theory, social bond theory, and differential association/social learning theory have all been utilized. In the next sections, the empirical status of these investigations will be discussed.

Strain

Both classic strain theory and general strain theory have been used to explain gender differences in delinquent and criminal activity. Although some of this research has shown that there are differences in the effects of strain across gender, others have found that strain is not important for either males or females.

One study has found that strain is differentially related to delinquency across gender. Simons, Miller, and Aigner's (1980) study revealed that anomie was more highly correlated with males' delinquency. Other research has failed to find a significant relationship between strain and male and female deviance (Smith & Paternoster, 1987).

In addition to these tests of traditional strain theory, other research has explored the utility of general strain theory across gender, with most research finding a gendered effect (Agnew & Brezina, 1997; for exception, see Hoffman & Su, 1997). Thus, Mazerolle (1998) used the National Youth Survey to examine different sources of strain and their effects on male and female delinquency. For females, having noxious relationships with adults was related to delinquent activity. Unlike this finding for females, males' delinquency was influenced by noxious life events, indicating that different types of strain may be differentially related to male and female offending.² This study is also important in that a crime-specific analysis across gender was conducted. Notably, the effect of strain on property-related offenses was not found to differ across gender; however, strain did differ across gender groups for violent delinquency. Negative life events and noxious relations with adults were positively related for male—but not for female—violent delinquency. Taken together, these findings denote not only that it is necessary to account for multiple sources of strain, but also that it is necessary to examine the predictors of delinquency by disaggregating delinquency into its different types. Similarly, in their study of 150 detained youth who were placed on probation, Piquero and Sealock (2004) found that interpersonal aggression and property offending of males is more strongly influenced by strain. Furthermore, the effects of cognitive coping and social coping were significantly different across gender, whereas the effects of anger were not significantly different.³

Social Bond

Tests of social bond theory have explored whether attachment, commitment, involvement, and belief operate in the same manner to explain offending across gender. Although some of this work has revealed little gender specificity (Paternoster, Brame, Mazerolle, & Piquero, 1998; Smith & Paternoster, 1987), other research indicates that the elements of the social bond may differentially influence male and female delinquency (Alarid, Burton, & Cullen, 2000; Covington, 1985; Krohn & Massey, 1980).

For example, in Krohn and Massey's (1980) study of adolescents in grades 7 through 12, parental and peer attachment and grade point average was found to be more strongly related to delinquent behavior for males. By contrast, commitment appears to be a more important inhibitory influence on female delinquency. Other research has shown that commitment to education, as conceptualized by high grades (Agnew & Brezina, 1997) and having educational difficulties (Simourd & Andrews, 1994), is related to both male and female delinquency. Similar to this finding, in a test of social control and differential association theories, Alarid et al. (2000) discovered that males' and females' delinquency are differentially explained by parts of the social bond. Attachment to parents was a significantly stronger predictor of female offending, whereas attachment to peers was positively related to male offending. In this study, involvement was found to operate similarly for males and females. Across crime types, the social control measures were better at explaining female offending, especially violent offending, whereas differential association measures were stronger predictors of male's participation in drug, violent, and property offending.

Other research on the gender-specificity of social bond theory has included partial tests of the theory in that only parts of the social bond were examined. This research has found mixed results. Attachment to parents (Anderson, Holmes, & Ostresh, 1999; Canter, 1982), parental control, communication, and disapproval of peers (Cernkovich & Giordano, 1987) have been shown to have greater effects on offending for males than for females. Attachment to school and to peers (Anderson et al., 1999), strong bonds to the family (Heimer & De Coster, 1999), violent offending, conflict with parents, and parental support of identity (Cernkovich & Giordano, 1987) have been found to be related to female offending.

Additional research has found that attachment to family and peers does not differentially affect the likelihood of male and females engaging in delinquency (Heimer, 1996). In her test of differential social control, Heimer (1996) discovered that attachment to family decreased the likelihood of delinquency among both girls and boys. Attachment to friends was also found to be important in decreasing the chances of delinquency for both genders. Taken as a whole, the empirical research investigating social bonds suggests that social bonds may indeed operate differently for males and females to either increase or decrease their likelihood of delinquency. These studies have, however, produced divergent findings regarding which bonds are more important for males and females.

Differential Association and Social Learning Theory

Central to differential association and social learning theories is the idea that learning criminal definitions can lead to involvement in delinquency. For youth, this learning typically occurs in peer groups. It is possible that the peer group may be especially important for either males or females in terms of its influence on offending behavior. Generally, research has provided support for the assertion that learning may have differential effects across gender.

One group of studies has tested the effects of multiple theories on delinquency across gender. The results from these tests show that differential association variables are related for both male and female offending, with little difference in their predictive power across gender (Alarid et al., 2000; Simons et al., 1980; Simourd & Andrews, 1994; Smith & Paternoster, 1987). For example, Alarid et al.'s (2000) test of the generality of social control and differential association theories revealed that three differential association variables were significantly related to males' offending. For females, two differential association theory variables were significant; however, the effects of having criminal friends and others' definition toward crime were similar for both males and females.

A second group of studies has solely examined the explanatory power of concepts from differential association theory. Heimer's (1996) work examining the effects of having attitudes oriented toward deviance and delinquency found that across gender, the joint effect of the attitude variables on delinquency is significantly larger among males than females and that attitudes favoring delinquency is not related to female offending. In contrast, Heimer and De Coster (1999) discovered that possessing high levels of violent definitions is an important factor in the process leading to violent actions for both genders.

A third approach consists of examining the effects of delinquent peers across gender. Generally, this research indicates that having delinquent peers is an important risk factor

for male delinquency but is less important for understanding the genesis of female delinquency. For example, both Mears, Ploeger, & Warr (1998) and Piquero, Gover, MacDonald, and Piquero (2005) have found that delinquent peers are a significant predictor of male theft and are a stronger predictor for males than for females. What the research exploring the influence of differential association and learning shows is that differential association may be more closely related to offending for males than females and that attitudes toward delinquency and violence may be related, albeit somewhat differently, for both genders.

Tests of the Life-Course Perspective

More recently, criminologists have begun to develop theories that attempt to examine offending from a developmental perspective that includes variables from multiple domains. Within this life-course perspective, both theory and individual-level risk factors have been used to explain the development of offending and to address the generality-specificity debate.

The General Theory of Crime

In Gottfredson and Hirschi's (1990) general theory of crime, they propose that antisocial behavior can be explained by an individual propensity called low self-control. As a general theory, their theory should be applicable to both male and female offending. As such, low self-control should be an important predictor of antisocial conduct for both males and females.

Empirical research testing this hypothesis has shown that low self-control is indeed a robust predictor of antisocial behavior (Pratt & Cullen, 2000). Research on its ability to predict delinquent participation for both males and females, however, has been equivocal. Some studies have found that low self-control or low constraint is related to male and female involvement in antisocial behavior (Keane, Maxim, & Teevan, 1993; Moffitt, Caspi, Rutter, & Silva, 2001; Piquero & Rosay, 1998). For example, Keane et al. (1993) found that self-control variables were predictive of blood alcohol content levels and that drinking and driving can be explained using the same risk-taking measures for both males and females.

Others have found that self-control is differentially related to antisocial behavior across gender (Burton, Cullen, Evans, Alarid, & Dunaway, 1998; LaGrange & Silverman, 1999; Longshore, Turner, & Stein, 1996; Tibbetts & Herz, 1996). Although low self-control has been found to be a significant predictor of criminal participation for males but not females in research that tested competing criminological theories (Burton et al., 1998), other research has found low self-control to have a stronger effect on college women's intentions to shoplift (Tibbetts & Herz, 1996).

A second key finding from this research is that different elements or measures of self-control may be more relevant for males than females. For example, LaGrange and Silverman (1999) found that risk seeking was the strongest predictor of participation in females' delinquency and that impulsivity was the strongest for males. This research thus shows the importance of the different constructs that comprise self-control and the differential effects self-control may have on different types of delinquency.

Attention Deficits

Although between 3% and 5% of school-aged children suffer from attention deficit hyperactivity disorder (ADHD), boys are more likely than girls to have ADHD (Disney, Elkins, McGue, & Iacono, 1999). Because of this gender difference, some researchers have attempted to examine whether ADHD and other attention disorders are differentially related to negative outcomes for boys and girls. Using data from the Minnesota Twin Family Study, Disney et al. (1999) examined the effects of ADHD and conduct disorder on tobacco, alcohol, and marijuana use for a sample of 17 year olds. Despite the fact that the prevalence of ADHD symptomology was higher among the males in the sample, no significant gender difference was found in terms of the effects of ADHD on substance use and abuse. The researchers did conclude, however, that a comparison of odds ratios for males and females separately showed that females who suffer from ADHD may be at a slightly greater risk for substance abuse than males. Hyperactivity was also examined by Moffitt et al. (2001) in their book *Sex Differences in Antisocial Behavior*, which is based on findings from the Dunedin Multidisciplinary Health Survey. This study is a longitudinal cohort study of complete birth cohort of approximately 1,000 persons who were followed from birth through age 21. From this study, the authors concluded that males are more likely than females to be hyperactive and that hyperactivity may place males at an increased risk for delinquency (Moffitt et al., 2001).

Pubertal Development

Much research has examined the effects of puberty on psychosocial and behavioral processes, with a particular attention being given to the effects of early pubertal timing on delinquency and other deviant activities. Within this broader investigation, the effects of pubertal timing for both males and females have been examined.

In general, research has found support for the relationship between early pubertal timing and deviancy for males, with boys who mature early being more likely to engage in deviant behavior compared to boys who mature on time or late (Cota-Robles, Neiss, & Rowe, 2002; Duke-Duncan, Ritter, Dornbusch, Gross, & Carlsmith, 1985; Felson & Haynie, 2002; Flannery, Rowe, & Gulley, 1993; Williams & Dunlop, 1999). The positive relationship between early pubertal timing and deviancy also exists for females (Caspi, Lynam, Moffitt, & Silva, 1993; Stattin & Magnusson, 1990). For females, the relationship between early puberty and deviance is mediated by relationships (Caspi et al, 1993; Haynie 2003; Moffitt et al., 2001).

Less research has used mixed-sex samples to investigate gender differences. The studies that have done so have produced mixed results, with some researchers finding pubertal timing to be related to female outcomes such as depression (Ge, Conger, & Elder, 2001) and delinquency (Beaver & Wright, 2005; Moffitt et al., 2001) and others reporting a greater effect of early puberty on males' delinquency (Beaver & Wright, 2005). To illustrate, Moffitt et al. (2001) reported that 13-year-old girls who reached menarche early relative to their cohort experienced more conduct problems than girls who reached menarche on time or late. Contrary to this finding that early puberty is more relevant for females than males, Beaver and Wright (2005) found that the relationship between pubertal development and

delinquency is significantly stronger for males. They further found that that pubertal development significantly interacts with negative interactional style, low impulse control, and contact with delinquent peers to predict delinquency in the models for males but not females.

The Current Study

Despite the advances made by previous research into the sources of delinquency for males and females, this body of research has several limitations. First, much of the research that has been conducted tested the applicability of variables derived from only one theory (e.g., social bond theory). That is, many studies have not used variables from competing theories to examine which theory may more adequately explain female and male offending and those that have typically included variables derived exclusively from traditional criminological theories. For example, the studies with the most breadth in terms of the variables tested use variables from social bond, strain, differential association, and/or low self-control (see Alarid et al., 2000; Burton et al., 1998; Simons et al., 1980; Smith & Paternoster, 1987). Although these studies have contributed to understanding the generality-specificity debate, they too are limited in their scope. Specifically, this body of research does not include empirical investigations that examine variables from feminist theory, traditional criminological theory, and the life-course perspective within the same analysis. Without doing so, it is not evident whether variables from one area are truly better at explaining male and female delinquency. The current study will attempt to examine concurrently the effects of variables on these three key areas on delinquency.

A second limitation of the previous research is that the most comprehensive test of gender differences in offending was conducted on a sample from New Zealand that is fairly homogeneous. Although other studies using national-level data, such as National Longitudinal Study of Adolescent Health (Add Health), National Longitudinal Survey of Youth, and National Youth Survey, have examined the predictors of delinquency across gender, none of them have included variables from feminist, traditional, and life-course criminological theories. As such, there is no research testing these three theoretical areas on a racially diverse, nationally representative sample. The current study will attempt to advance the extant research by using a nationally representative sample that is racially diverse and by including variables from these three theoretical areas.

A third limitation of the previous research is that many of the early studies did not include tests for the differences in coefficients across gender. By not testing the difference, it is not evident if some factors are significantly different for males and females. More recent research, for the most part, has included tests to examine differential effects across gender. Because these studies, however, have not included variables derived from different theoretical domains, it is still not known if feminist, traditional, and life-course theory variables influence males' and females' delinquency differently.

Fourth, most research has examined the predictors of only one type of delinquency. That is, most empirical tests have included variables to predict general offending or violent offending. Seldom have tests examined the difference in predictors across gender for

different types of delinquency (for exceptions, see Alarid et al, 2000; Mazerolle, 1998; Piquero & Sealock, 2004). Accordingly, whether the same variables are relevant for different types of delinquent offending is not known. The current study will examine gender differences in the predictors of overall delinquency, nonviolent delinquency, and violent delinquency.

In filling the gaps in the existing literature, the current project uses a longitudinal research design with measures taken from various domains. As such, it includes measures based on the empirical research addressing the generality-specificity debate. Specifically, concepts from feminist theory, traditional criminological theory, and the life-course perspective are operationalized and included as explanatory variables.

Method

Data

This study uses data from the Add Health, which is a school-based, nationally representative multiwave panel study of adolescents in grades 7th through 12th in the United States. Add Health includes measures on social and demographic characteristics, household structure, parenting and family dynamics, risky behaviors, decision making and self-esteem, relationships, education and employment, and health.

The Add Health survey consists of three waves of data and includes variables from an In-School Questionnaire, an In-Home Questionnaire, and a school administrator questionnaire. Wave I data were collected from September 1994 through December 1995. Follow-up data were collected for Wave II between April 1996 and August 1996. Participants were selected using a multistage stratified random sampling technique (Chantala, 2001), with schools being selected in the first stage. In the second stage, for the core sample, stratified random sampling was performed to select students to be given the In-Home Questionnaire. All students who were present in school the day of the interview and who were allowed by their parents to participate were given the In-School Questionnaire (Harris et al., 2003).⁴

Sample

Data used in the present investigation are taken from the Public Use section of the Add Health study, which consists of one-half of the core sample, which was randomly selected. It also includes one-half of the oversample of African-American adolescents with a parent who has a college degree. In total, Wave I of the Public Use data include measures for 6,504 adolescents.

Wave II of the Public Use data include measures for individuals who remained enrolled in a selected school and who were available for study. Because measures from Wave I and II will be utilized, only those individuals for whom there are complete data for the measures used in the current analysis are included in the final sample. As such, the final sample for the analysis includes 3,422 adolescents of which 1,832 (53.5%) are females and 1,590 (46.5%) are males.⁵

The average age of the sample is 15 years old. The sample is predominately White, with 66.9% of the sample reporting being White and 33.1% reporting being non-White.⁶ In terms of socioeconomic status, few sample members' households (16.5%) reported receiving some form of government assistance. Slightly less than half, 47.5%, of the sample had engaged in at least one type of delinquent activity at the Wave II assessment. Fewer sample members, 29.2%, had been involved in violent activity.

Dependent Variables

To investigate whether the predictors of juvenile misconduct are similar for both males and females, three outcome measures are used.

Overall delinquency. The measure of overall delinquency includes both violent and property delinquent acts. Respondents were asked how often they had participated in 14 different types of delinquent acts during the past 12 months (e.g., deliberately damaging property that didn't belong to you, steal something worth more than \$50, use or threaten to use a weapon to get something from someone).⁷ If a respondent reported not having engaged in an act, their response was coded as 0.⁸ If a person reported being involved in an act one or more times, the item was coded as 1. To create the final overall delinquency scale, responses to the items were summated ($\alpha = .779$).⁹ The delinquency measures are variety scales and reflect the number of different types of delinquent behavior an individual has been involved in during the previous 12 months.¹⁰ An identical measure of overall delinquency was created using the Wave I variables to be used as a control variable, given that previous delinquency is a known risk factor of delinquency.

Nonviolent delinquency. Nine items comprise the overall delinquency scale. These items assess how often in the previous 12 months a person engaged in nine different forms of property crimes. Persons who had engaged in an act more than one time during the reference period were coded as 1 for the item, whereas persons who reported no such involvement were coded as 0. To create the final nonviolent delinquency scale, responses to the items were summated ($\alpha = .743$). A nonviolent delinquency scale to be used as a control variable was also constructed using the same items from the Wave I survey.

Violent delinquency. To create the measure of violent delinquency, 5 items from the overall delinquency scale were utilized. These items assess how often during the previous 12 months a person engaged in six different forms of personal or violent delinquency. For each item, if a person reported being involved in an act one or more times, it was coded as 1, and 0 if they did not report any involvement. Responses to the 9 items were summed to create the final violent delinquency scale ($\alpha = .615$). To control for Wave I violent delinquency, an identical violent delinquency scale was created using Wave I survey items.

Independent Variables

To examine the gender-specificity debate, independent variables from three theoretical perspectives were created.

Feminist Theory Measures

Variables central to feminist theory were constructed and included to examine previous victimization, depression, and supervision.

Victimization. A measure of personal victimization is included to examine the relationship between victimization at Wave I and delinquency at Wave II. Respondents were asked about six different types of physical victimization they experienced during the previous year.¹¹ The respondent could respond that they had not experienced the victimization, that they experienced it once, or that they experienced it more than once. Responses to the 6 items were added together to create the victimization scale ($\alpha = .676$). Higher scores on the scale reflect a greater number of victimization experiences during the previous 12 months.

Based on the work of Upchurch and Kusunoki (2004), a second measure of victimization was also included to capture a person's sexual victimization experiences. Female respondents were asked if they had ever been forced to have sexual intercourse against their will. Responses were coded 0 = no and 1 = yes. Males in the Add Health study were not asked about their sexual victimization experiences, therefore no measure of males' sexual victimization is included.

Depression. To measure a respondent's level of depression, a 19-item summated scale used in previous research was created (Cleveland, Herrera, & Stuewig, 2003; Felson & Haynie, 2002; Videon, 2002). As a measure of current depressive symptomology, respondents were asked how often they had experienced any of the 19 items, such as feeling like life was not worth living, not feeling like eating, and feeling lonely, during the previous week. Responses range from 0 = *never* to 3 = *most or all of the time*. Responses from the items were then added together to create the final depression scale measure ($\alpha = .864$), with higher scores representing more problems with depression.

Supervision. Two measures of parental supervision were created. The first—designed to measure autonomy—uses responses to 7 questions asking if the respondents' parents allow them to make decisions about various parts of their life, such as the time they must be home on weekend nights. This measure of autonomy has been used in previous research (Felson & Haynie, 2002; Haynie, 2003). The responses were dichotomized with 0 = no and 1 = yes and then added together to create a summated scale ($\alpha = .580$).¹² Higher values on the measure of autonomy reflect a greater level of autonomy in decision making.

The second measure of supervision was created by adding the responses to three questions that ask respondents how often their mother is home during different periods of the day (e.g., when the adolescent gets home from school). Responses to each item ranged from 1 = *always* to 5 = *never*. Similar to previous research, answers to the 3 questions were summed and then divided by 3 to create the final average supervision scale, with higher scores on the scale representing less supervision.¹³ It should be noted that because mother's who work outside of the home will most likely not be at home during some parts of the day, absence is not necessarily reflective of a lack of supervision because other adults may be at home during these times.

Traditional Criminological Theory Measures

Measures were also included to capture key elements of three traditional criminological theories: strain, social bond, and differential association/social learning theory.

Strain. The measure of traditional strain used in the current investigation is designed to measure if there is a disjuncture between the desire to attend college and the likelihood that a person will attend college. Respondents were asked if they wanted to attend college and how likely they were to attend college. They could respond on a 5-point scale, with 1 being low and 5 being high. Respondents who rated their desire to attend college as being higher than the likelihood that they will attend college were determined to be experiencing strain and were given a value of 1. Those respondents whose desire was not greater than their estimated likelihood were coded as 0 for the strain variable.

Two measures of the types of strain conceptualized in general strain theory were also included. Based on previous research, the first measure was created to determine if an adolescent experiences conflict with his or her parents (Haynie, 2003; Joyner & Udry, 2000; Mazerolle, Burton, Cullen, Evans, & Payne, 2000). Respondents were asked if they had a serious argument with their mother or father during the previous 4 weeks (0 = *no*, 1 = *yes*).

A second measure of general strain—a Negative Life Events Scale—was created. The Negative Life Events Scale was created by summing the responses to 5 questions asking the respondents about whether they had experienced such things as having a family member or friend attempt or complete suicide and whether they had experienced a serious injury. All items were recoded to reflect whether or not the respondent had experienced them during the specified time frame, with those who had experienced an event being coded as a 1 and as a 0 if they had not reported experiencing an event. The responses from the 5 items were then added together to create the scale, with higher numbers reflecting a greater number of negative life events experienced.

Social bond. According to Hirschi's social bond theory, individuals with strong bonds should be less likely to participate in delinquent behaviors. The current analysis includes measures of three of the bonds: involvement, commitment, and attachment.

Two measures from the In-Home Questionnaire were used to measure involvement in conventional activities. First, respondents were asked about the amount of time they spent during the past week watching television or playing video games. Second, they were asked about the amount of time they spent playing sports such as baseball and basketball. Responses to the 2 items could range from 0 = *not at all* to 3 = *five or more times*.

Consistent with previous research testing social bond theory, to assess commitment, a measure was created to reflect respondents' academic success (Agnew & Brezina, 1997; Krohn & Massey, 1980). To do so, each respondent was asked about his or her grades during the previous year in English or language arts. Responses ranged from A to D or below and were coded A = 4, B = 3, C = 2, and D or below = 1.

To measure attachment to school, the survey members were asked how much they agreed or disagreed to 6 statements about their school.¹⁴ For each item, the responses ranged from 1 = *strongly agree* to 5 = *strongly disagree*. To create the final measure, the responses to the items were added together, with higher scores reflecting less attachment to school ($\alpha = .729$).

To assess attachment to peers, we utilized a measure that has been used in previous research (Schreck, Fisher, & Miller, 2004). This measure reflects the amount of time a person spends with his or her friends. Respondents were asked how much time they spent hanging out with their friends during the past week. Possible responses to the item were 0 = *not at all*, 1 = *one or two times*, 2 = *three or four times*, and 3 = *five or more times*.

Finally, following the lead of Haynie (2001) and Schreck et al. (2004), an additive scale was created to measure the amount of attachment an individual has to his or her mother. Two items were used to create the summated scale ($\alpha = .638$). First, respondents were asked how close they felt to their mother. Second, they were asked how much they thought their mother cared about them. Responses to the items ranged from 1 = *not at all* to 5 = *very much*.

Differential association and social learning. Based on previous work using the Add Health data (Beaver & Wright, 2005; Bellair, Roscigno, & McNulty, 2003) to measure whether or not an adolescent has peers who are involved in misconduct, 3 items of the Add Health data were employed. Respondents were asked about the number of their three best friends who use marijuana, drink alcohol, and smoke cigarettes. The values of the 3 variables were added to create a new variable that ranges in value from 0 to 9 ($\alpha = .754$). A second measure was used to assess peer relationships. The custodial, responding parent was asked to rate the influence of his or her child's best friend. The parent could respond that the influence of the adolescent's best friend was bad (coded as 0), neither (coded as 1), or good (coded as 2).

Life-Course Perspective Variables

Measures of theory and variables derived from the life-course perspective are also included in the analysis.

Low self-control. One of the key defining elements of low self-control is a person's lack of impulse control and inability to delay gratification. Similar to the work of Beaver and Wright (2005), to capture an individual's impulsivity, 4 items from the Add Health survey were used that measure respondents' approach to decision making. For example, respondents evaluated the statements "When making decisions, you generally use a systematic method for judging and comparing" and "When you are attempting to find a solution to a problem, you usually try to think of as many different ways to approach the problem as possible." The Likert-type responses ranged from 1 = *strongly disagree* to 5 = *strongly agree* and summed to create the impulsivity scale ($\alpha = .738$).

A second, behavioral measure of self-control is also used (Gottfredson & Hirschi, 1990). Based on the research of Felson and Haynie (2002) and Keane et al. (1993), the item from the Add Health survey asking respondents how often they wear a seat belt in a car was included in the analysis. The responses to this item ranged from 0 = *never* to 4 = *always*.

Attention deficits. A measure of attention difficulty is also included. This measure, which has been used in previous research, is a summated scale of 4 items assessing how often a

respondent has trouble at school in terms of interacting with others, paying attention, and getting homework done (Beaver & Wright, 2005). Responses ranged from *never* to *every day*. The responses to the 4 questions were then summed to create the Attention Difficulty Scale ($\alpha = .692$).

Temper. The responding parents were asked if they believed their child has a bad temper, coded 0 = no and 1 = yes. This measure of anger has previously been used in work by Beaver and Wright (2005) and Hagan and Foster (2003).

Pubertal development. Following the work of Felson and Haynie (2002), a measure of pubertal development was constructed to reflect the stage of pubertal development of the respondents in the Add Health data. For males, 3 items measuring the amount of hair under the respondent's arms, the thickness of facial hair, and voice being low were used to construct the pubertal development measure for males. The responses ranged from 1 to 5 in value and, because they varied somewhat based on the particular question being asked, the items were standardized. Similar to what was done by Cota-Robles et al. (2002), the standardized values were then summated and divided by 3 to create an average standard pubertal development score for males.

Female pubertal development was measured using a similar procedure. Three items measuring breast development, body development, and menstruation were used. For the items measuring breast and body development, the response sets ranged in value from 1 to 5, with higher values representing greater physical development. For the menstruation item, girls were asked if they had ever had a menstrual period. The items were standardized then summed and divided by 3 to create an average standard pubertal development score for females.

Control measures. To account for other variables that have been shown to be related to delinquency, several control measures are also included in the multivariate models. Race and ethnicity is a dichotomous variable that is coded 0 for White and 1 for non-White. Age is included to control for the relationship between age and delinquency. To ascertain the level of socioeconomic status of the household in which the adolescent is a part, receiving public assistance was measured. To do so, 4 measures from the parental questionnaire were used. Parents were asked whether they received four different types of governmental assistance: (a) housing subsidies, (b) unemployment, (c) food stamps, and (d) Aid to Families with Dependent Children. If an affirmative response was given to any of the 4 items, the socioeconomic status variable was coded as 1, and if no items were endorsed, the variable was coded as 0. Other research using the Add Health data have also used measures of receipt of public assistance (Watt & Sharp, 2001).

Analytic Strategy

To examine whether the predictors of delinquency are the same for males and females, the analyses consists of several stages. First, bivariate analyses were conducted using mean-level comparisons and chi-square tests across gender groups to determine whether males and females are significantly different on key characteristics and risk factors and

whether males and females differ in their levels of delinquent involvement. Second, a series of multivariate negative binomial regression analyses were conducted to predict delinquency, nonviolent delinquency, and violent delinquency separately for males and females. Negative binomial regression models are used given the large number of zero values in the dependent variables along with the overdispersion that is present (Gardner, Mulvey, & Shaw, 1995; StataCorp, 2001). For the regression models, robust standard errors were employed because individual respondents in the Add Health data are clustered within schools. Within these models, the equality of regression coefficients across gender was tested to see whether the effect of independent variables differed across gender (Paternoster et al., 1998).

As previously mentioned, there is a portion of individuals for whom the entire set of measures was not available. It is possible that the missing data are not random; rather, persons may be systematically missing. Similar to the approach used by Sampson and Laub (1993) and Wright and Cullen (2004), a hazard term was incorporated in the multivariate analyses. This hazard term "captures variation in the risk of exclusion from the study" (Wright & Cullen, 2004, p. 193). It was created following a two-step procedure proposed by Heckman (1979). First, a dichotomous variable was created to reflect whether a person was included in the sample or not ($0 = \text{included in the sample}$, $1 = \text{they were not included in the sample}$). To model sample exclusion, logistic regression analysis was performed with 5 independent variables being included: race, receiving public assistance, age, living in the same house during the interview as in 1990, and having been suspended from school. Each of these variables was found to be significantly related to sample exclusion at the .05 level of significance. Predicted probabilities from this analysis were saved to create the hazard term. In the second stage, this hazard term is included in the negative binomial and logistic regression analyses as a separate variable.

Results

Participation in Delinquency

Because previous research has shown that males are more likely to participate in delinquency than females, the levels of participation in delinquency are compared across gender. To do so, mean level comparisons were conducted using independent sample t tests. Results of this analysis can be found in Table 1.

On average, males engaged in 1.64 delinquent activities compared to the .99 engaged in by females, suggesting that males participate in more delinquent activities than females. Similarly, males reportedly engaged in slightly more than one ($\bar{x} = 1.01$) nonviolent delinquent act, with females engaging in less than one ($\bar{x} = .66$), and this difference was significant. Finally, although both males and females reported less involvement in violent as compared to nonviolent delinquency, males again reported involvement in a greater number of violent acts ($\bar{x} = .63$ versus $\bar{x} = .36$). Males also reported more involvement in all three types of delinquency at Wave I.

Table 1
Difference in Risk Factors, Males and Females

	Males (<i>n</i> = 1,590)		Females (<i>n</i> = 1,832)		Test Statistic
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i> or χ^2
Feminist variables					
Victimization	1.20	1.79	.55	1.17	$t = -12.37^{***}$
Depression	9.64	6.66	11.09	7.82	$t = 5.88^{***}$
Autonomy	3.41	1.15	3.41	1.14	$t = .09$
Supervision	2.01	.76	1.99	.77	$t = -.79$
Forced sex (1 = yes)			4.97	.91	
Traditional criminological variables					
Traditional strain (1 = yes)	31.51	—	23.69	—	$\chi^2 = 26.10^{***}$
Parental conflict (1 = yes)	36.79	—	41.43	—	$\chi^2 = 7.68^{**}$
Negative life events	.86	.93	1.06	1.04	$t = 5.85^{***}$
Involvement—watch TV	2.46	.80	2.37	.85	$t = -2.97^{**}$
Involvement—play sports	1.81	1.11	1.21	1.11	$t = -15.91^{***}$
Commitment	2.69	.94	3.06	.92	$t = 11.76^{***}$
Attachment to school	14.20	4.07	14.37	4.20	$t = 1.18$
Attachment to friends	2.05	.98	1.93	1.00	$t = -3.52^{***}$
Attachment to mother	9.56	.90	9.35	1.18	$t = -5.95^{***}$
Peer delinquency	2.36	2.58	2.19	2.47	$t = -1.93$
Influence of peers	1.65	.54	1.64	.55	$t = -.45$
Life-course variables					
Impulsivity	8.70	2.53	8.90	2.41	$t = 2.37^*$
Risky behavior	2.99	1.22	3.29	1.01	$t = 7.89^{***}$
Temper (1 = yes)	29.87	—	28.06	—	$\chi^2 = 1.37$
Attention deficits	4.53	2.94	3.70	2.69	$t = -8.61^{***}$
Pubertal development	-.03	.74	-.05	.74	$t = -.73$
Control variables					
Age	16.01	1.59	15.80	1.53	$t = -3.94^{***}$
Delinquency	2.05	2.45	1.25	1.86	$t = -10.64^{***}$
Nonviolent delinquency	1.24	1.79	.80	1.41	$t = -7.88^{***}$
Violent delinquency	.81	1.02	.44	.79	$t = -11.52^{***}$
Public assistance (1 = yes)	16.10	—	16.78	—	$\chi^2 = .27$
Race (1 = White)	67.48	—	66.38	—	$\chi^2 = .47$

* $p < .05$. ** $p < .005$. *** $p < .001$.

Comparisons of Predictors Across Gender

Previous research has found that males and females are differentially exposed to risk factors of delinquency (Moffitt et al., 2001). That is, males may have higher levels on risk factors, and these higher levels may contribute to the gender gap in offending. To explore this hypothesis, mean-level comparisons and chi-square tests of the independent variables across gender were performed. In doing so, it is possible to examine whether males and females differ in their levels on the risk factors included in the present analysis.

Feminist variables. Males' and females' mean scores on variables derived from feminist theory are presented in Table 1. As seen in this table, males and females do differ on two feminist theory variables. Specifically, males on average experienced a significantly greater number of personal victimizations (1.20) than females (.55). Males and females also significantly differ in their levels of depression. Males have a mean depression score of 9.64, and females have a mean depression score of 11.09, indicating that females reported higher levels of depression. Males and females did not differ in their levels of supervision or autonomy.

Traditional criminological theory variables. Males and females were also compared on their levels of traditional criminological theory variables (see Table 1). Males and females differ in their levels of strain. Although females reported experiencing a greater number of negative life events ($\bar{x} = 1.06$) than males ($\bar{x} = .86$) and a greater percentage reported experiencing parental conflict (41.4% compared to 36.8%), more males reported experiencing traditional strain than did females (31.5% and 23.7%, respectively).

Females and males also differ on their levels of social bond variables. Females report having better grades than males, whereas males have greater levels of television viewing ($\bar{x} = 2.46$ vs. $\bar{x} = 2.37$) and playing sports ($\bar{x} = 1.81$ vs. $\bar{x} = 1.21$). Males also report higher levels of attachment to their friends ($\bar{x} = 2.05$ vs. $\bar{x} = 1.93$) and mother than females ($\bar{x} = 9.56$ vs. $\bar{x} = 9.35$).

Life-course perspective variables. Males and females also differ in their levels on three of the life-course perspective variables, as shown in Table 1. First, males have a lower mean impulsivity score than do females ($\bar{x} = 8.70$ vs. $\bar{x} = 8.90$), indicating that males have lower impulse control than females. Second, males also report lower seat belt use than females. Third, the mean score for males on the attention deficits scale (4.53) is higher than the mean score for females (3.70), reflective of males being more likely to experience attention difficulties.¹⁵

Predictors of Delinquency

Multivariate negative binomial regression models were run to examine the predictors of delinquency for males and females.¹⁶ Three separate tables were constructed to examine the gender-specificity thesis for overall, nonviolent, and violent delinquency.

Overall delinquency for males. The results of the negative binomial regression predicting involvement in overall delinquency for males are presented in Table 2. From this table, it can be seen that experiencing victimization is significantly related to overall delinquency. This is the only feminist perspective variable that is related to this type of delinquent activity for males.

Both general strain items are significant, positive predictors of overall delinquency for males. Individuals who argued with their parents were more likely to engage in overall delinquency. Experiencing a greater number of life events is also associated with involvement in a greater number of overall delinquent acts. Only one additional traditional criminological theory variable, peer delinquency, is significant. Having a greater number of friends who engage in delinquency is positively associated with overall delinquency for males.

Table 2
Negative Binomial Regression Predicting Overall Delinquency Across Gender

	Males		Females		
	<i>B</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	Z value
Feminist variables					
Victimization	.05**	.02	.08***	.03	−.83
Depression	.00	.01	.01	.00	−1.00
Autonomy	.01	.03	−.02	.03	.71
Supervision	.05	.04	−.02	.05	1.09
Traditional criminological variables					
Traditional strain (1 = yes)	.03	.07	.13	.08	−.94
Parental conflict (1 = yes)	.16*	.07	.10	.08	.56
Negative life events	.09*	.03	.02	.03	1.75
Involvement—watch TV	−.03	.04	.01	.04	−.71
Involvement—play sports	.02	.03	.02	.03	.00
Commitment	−.03	.04	−.06	.04	.53
Attachment to school	−.01	.01	.01	.01	−1.43
Attachment to friends	.07	.04	.09**	.03	−.40
Attachment to mother	.01	.03	−.02	.03	.71
Peer delinquency	.05***	.01	.03	.02	1.00
Influence of peers	.01	.06	.08	.06	−.83
Life-course variables					
Impulsivity	.01	.01	.01	.02	.00
Risky behavior	.01	.03	−.10***	.03	2.75
Attention deficits	.03*	.01	.01	.02	1.00
Temper (1 = yes)	.10	.07	.02	.08	.75
Pubertal development	.00	.05	.03	.06	−.38
Control variables					
Public assistance (1 = yes)	−.08	.07	.08	.10	−1.31
Age	−.08**	.03	−.17***	.03	6.25
Race (1 = White)	−.13	.11	.20	.13	−1.94
Delinquency	.17***	.01	.27***	.02	−5.00
Hazard	−.36	.61	−.90	.77	.55
Constant	.81	.82	2.27*	.94	−1.17
Wald chi-square	579.15***		589.52***		
Log likelihood	−2545.19		−2213.41		

Note: All standard errors are robust standard errors.

* $p < .05$. ** $p < .01$. *** $p < .005$

In addition, one life-course perspective variable is significantly related to overall delinquency for males. Males who experience attention deficits are more likely to engage in overall delinquency. Two of the control variables are also related. Younger males who engaged in overall delinquency at Wave I are more likely to be involved in a greater number of overall delinquent acts at Wave II.

Overall delinquency for females. Overall delinquency participation was also predicted separately for the females in the sample (see Table 2). Similar to the model for males,

victimization is positively related to overall delinquency participation for females. None of the strain measures are significant in the female model, and only one of the social bond measures is significant. That is, having a higher level of attachment to friends is positively related to involvement in overall delinquency. Risky behavior is the last theoretically based measure that is related to overall delinquency. Females who use a seatbelt less frequently when they are driving or riding in cars are more likely to engage in overall delinquency. The final two variables related to overall delinquency for females are age and prior overall delinquency. Younger females and those who report involvement in overall delinquency at Wave I were more likely to engage in overall delinquency at Wave II.

It should be noted that when the forced sex variable was added to the model, it was also significantly related to overall delinquency (results not reported in table). It is negatively related to overall delinquency participation ($b = -.45, p < .05$). As such, those females who reported having sex against their will were less likely to engage in overall delinquency. Even with this variable in the model, however, all of the other variables that were significant in the first female model remain significant in the model.

Even though it appears that several variables are significant for one gender but not the other, tests of the coefficients to see if they significantly vary show that only two theoretically based variables were differentially associated with delinquency across gender (see Table 2).¹⁷ Specifically, negative life events (Z value = 1.75) has a stronger effect on males' than on females' overall delinquency. Risky behavior (Z value = 2.75) has a stronger effect for females.

Regression Models Predicting Nonviolent Delinquency for Males and Females. In this section, results from the negative binomial models predicting nonviolent delinquency for males and females are presented. Regression models are run for males and females separately to allow for the comparison of predictors of nonviolent delinquency.

Nonviolent delinquency for males. The results from the negative binomial regression predicting males' nonviolent delinquency are located in Table 3. Inspection of this table shows that none of the feminist perspective variables are significantly related to nonviolent delinquency. Only 2 items derived from traditional criminological theory are significant. First, parental conflict is positively and significantly related to nonviolent delinquency. Males who reported having arguments with their parents are more likely to engage in nonviolent forms of delinquency. Second, peer delinquency is also a significant predictor, indicating that having a greater number of delinquent friends places males at a greater risk of being involved in nonviolent delinquent activities. All of the life-course variables failed to reach significance. In addition, only one control variable—nonviolent delinquency at Wave I—is significantly related to nonviolent delinquency at Wave II.

Nonviolent delinquency for females. Table 3 also shows the results of the negative binomial regression model predicting nonviolent delinquency for the females in the sample. Contrary to the propositions of feminist theorists, none of the feminist perspective variables are significantly related to nonviolent offending by females. The strain theory items are also not significant; however, two of the attachment items are significant. First, the regression coefficient for attachment to school is significant, indicating that females who are less

Table 3
Negative Binomial Regression Predicting Nonviolent Delinquency Across Gender

	Males		Females		
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>Z</i> Value
Feminist variables					
Victimization	.04	.02	.04	.03	.00
Depression	.00	.01	.00	.01	.00
Autonomy	−.01	.03	−.02	.04	.20
Supervision	.07	.05	.00	.06	.90
Traditional criminological variables					
Traditional strain (1 = yes)	.00	.08	.08	.09	−.66
Parental conflict (1 = yes)	.23***	.08	.12	.09	.92
Negative life events	.07	.04	.06	.04	−.18
Involvement—watch TV	.01	.05	−.05	.06	.77
Involvement—play sports	−.01	.04	.02	.04	−.53
Commitment	.00	.04	−.08	.04	1.41
Attachment to school	−.01	.01	.03*	.01	−2.86
Attachment to friends	.08	.05	.10*	.04	−.33
Attachment to mother	.05	.04	−.04	.03	1.80
Peer delinquency	.04**	.02	.00	.02	1.43
Influence of peers	.02	.07	.12	.07	−1.44
Life-course variables					
Impulsivity	.01	.01	.02	.02	−.45
Risky behavior	−.01	.03	−.10**	.04	1.80
Attention deficits	.03	.02	.04	.02	−.35
Temper 1 = yes	.07	.09	−.02	.10	.67
Pubertal development	.00	.06	.03	.07	−.33
Control variables					
Public assistance (1 = yes)	−.12	.10	.05	.12	−1.09
Age	−.05	.03	−.17***	.04	2.40
Race (1 = White)	−.16	.14	.18	.18	−1.49
Nonviolent delinquency	.29***	.02	.35***	.03	−1.67
Hazard	.46	.70	−.68	1.02	.92
Constant	−1.24	.97	1.91	1.10	−2.15
Wald chi-square	553.07***	453.45***			
Log likelihood	−1993.34		−1793.69		

Note: All standard errors are robust standard errors.

* $p < .05$. ** $p < .01$. *** $p < .005$.

attached to school are more likely to engage in nonviolent delinquency. Second, attachment to friends is also predictive of nonviolent delinquency. Females with high levels of attachment to friends are more likely to engage in nonviolent forms of delinquency. The last theoretically derived measure that is significant is risky behavior. Those females who are less likely to wear a seatbelt are more likely to be involved in nonviolent delinquency. Two control measures—age and nonviolent delinquency at Wave I—are positive, significant predictors as well.

A separate negative binomial model was run with a variable to measure whether the respondent had ever experienced forced sex (results not reported in table). Forced sex is significantly related to nonviolent delinquency for the female sample ($b = -.50$, $p < .05$). Females who had experienced at least one forced sex incident in their lifetime are less likely to report engaging in nonviolent delinquency. All of the variables that were significant in the model without the forced sex variable remained significant in this model.

Tests for the equality of regression coefficients across models for males and females were conducted to examine whether the effects are stronger for one gender. Only 2 theoretically derived variables have Z values that are significant (see Table 3). Both attachment to school (Z value = -2.86) and risky behavior (Z value = 1.80) have stronger effects in the model for females.

Regression Models Predicting Violent Delinquency for Males and Females

To examine the predictors of violent delinquency for males and females, negative binomial regression models were constructed for each gender.

Violent delinquency for males. The results from the negative binomial regression models predicting violence for males are presented in Table 4. As shown in this table, variables from the feminist perspective and those from traditional criminological theories are related to violent delinquency. In addition, several control variables are also significant.

Victimization is the only feminist perspective variable that is related to violent delinquency for the male subsample. One strain measure—negative life events—is also significant in this model. Individuals who have experienced a greater number of negative life events are more likely to engage in violent delinquent acts.

In addition, involvement is related to violent offending for males. Individuals who spend fewer hours watching television or playing video games are more likely to engage in violence. Conversely, those who spend more time playing sports each week are more likely to be violent than those who spend less time engaged in sporting activities. The final traditional criminological theory variable that is related to males' violence is peer delinquency. Males who have a greater number of delinquent peers are more likely to engage in violent delinquency than those who report having fewer delinquent peers.

Inspection of Table 4 also reveals that 2 control variables are predictors of violence among the males. Age is negatively related to violence, and previous involvement in violent delinquency is positively related to violence.

Violent delinquency for females. The violent delinquency of females was also examined. In doing so, negative binomial regression models predicting violence for females were constructed. Results from this analysis are found in Table 4.

For females, both victimization and depression are related to involvement in violent delinquency. Females who experience a greater number of victimization experiences and those who are depressed are more likely to be involved in violent delinquency.

Only 2 additional theoretical variables are significant predictors of female violent delinquency. The measure of traditional strain is a significant, positive predictor of violent delinquency. Females who are experiencing strain report more involvement in

Table 4
Negative Binomial Regression Predicting Violent Delinquency Across Gender

	Males		Females		
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	Z Value
Feminist variables					
Victimization	.08***	.02	.14***	.04	−1.50
Depression	.00	.01	.02***	.01	−2.00
Autonomy	.01	.03	−.04	.04	1.00
Supervision	.04	.05	−.08	.06	1.54
Traditional criminological variables					
Traditional strain (1 = yes)	.10	.08	.26*	.11	−1.23
Parental conflict (1 = yes)	.05	.08	.05	.09	.00
Negative life events	.10*	.04	−.05	.05	2.34
Involvement—watch TV	−.10*	.04	.08	.06	−2.57
Involvement—play sports	.07*	.04	.05	.05	.33
Commitment	−.08	.04	−.06	.05	−.31
Attachment to school	−.01	.01	−.01	.01	.00
Attachment to friends	.07	.04	.05	.05	.31
Attachment to mother	−.02	.04	.02	.04	−.71
Peer delinquency	.05***	.02	.06**	.02	−.33
Influence of peers	−.01	.06	.03	.07	−.43
Life-course variables					
Impulsivity	.00	.01	.00	.02	.00
Risky behavior	.01	.03	−.09	.05	1.72
Attention deficits	.01	.01	.00	.02	.45
Temper, 1 = yes	.13	.09	.10	.11	.21
Pubertal development	−.01	.06	.03	.07	−.43
Control variables					
Public assistance, (1 = yes)	−.01	.09	.09	.13	−1.20
Age	−.10***	.04	−.16***	.05	1.00
Race, (1 = White)	−.09	.13	.10	.16	−.92
Violent delinquency	.32***	.04	.58***	.06	−3.71
Hazard	−1.39	.74	−1.19	.95	−.17
Constant	1.60	1.06	1.43	1.45	.09
Wald chi-square	708.77***		481.59***		
Log likelihood	−1540.50		−1137.66		

Note: All standard errors are robust standard errors.

* $p < .05$. ** $p < .01$. *** $p < .005$.

violent delinquency than those who are not experiencing strain. Peer delinquency is the other item related to violent, female delinquency. Having more delinquent peers is related to a greater likelihood of involvement in violence.

As with the full male model predicting violent delinquency, 2 of the control variables are related to violence for females. Younger females are more likely to be engaged in violent delinquency than older females. Violent delinquent participation at Wave I also is positively related to violent delinquency at Wave II.

When forced sex was added to the model for females, it was not found to be significantly related (results not presented in table). Moreover, all variables that were significant in the first model remained so in the model with forced sex.

Table 4 also shows results from the tests of the equality of coefficients for males and females. For violent delinquency, two social-bond variables—watching television and playing sports—are stronger predictors for males than females. In the female model, depression is a stronger predictor.

Discussion

An important issue in the examination of gender differences in delinquency is whether males and females differ in their levels of risk factors. As such, one part of this investigation entailed examining the gender gap in offending and the difference in exposure to risk factors across gender.

Males experienced more risk in terms of the feminist perspective variable, victimization, which may be because of the types of victimization the item measures. They only had greater risk in terms of two traditional criminological theory variables. Males had a lower mean score on the commitment item, reflecting lower grades in English, and experienced more traditional strain. Females, on the other hand, had higher depression scores, a finding that supports previous research that shows that females are more likely to experience depression than males (Crawford, Cohen, Midlarsky, & Brook, 2001). They also reported more negative life events, more parental conflict, less involvement, and less attachment to friends and mother. On examination of the traditional criminological theory variables, the differential exposure hypothesis that males are exposed to more criminogenic risk factors than females is not supported.

When examining variables derived from the life-course perspective variables, however, support for the hypothesis is found. Males had greater risk scores on the impulsivity, risky behavior, and attention deficits items, which supports Moffitt et al.'s (2001) and Disney et al.'s (1999) findings. These findings suggest that males do indeed experience more problems with self-control and attention than females.

Key Findings and Theoretical Implications

Based on the predictors that were found to be related to male offending and female offending, some theories appear to be better suited to explaining either male or female offending. Also, it was found that particular aspects or parts of some theories may apply to one gender, whereas other parts may apply to the other. As a result, in the following sections, the three theoretical traditions are discussed in terms of their applicability to male and female delinquency.

The feminist perspective. In general, the feminist perspective does seem to be more relevant for female offending than for male offending. The one exception, however, is for victimization, a variable that is significantly related to both male and female overall and violent delinquency. The other feminist variables are not significant in any of the male

models. On the other hand, depression and forced sex are both related to delinquency in at least one model for the females in the sample. Except for forced sex, the variables are related to the outcome measures in the predicted manner. Females who reported experiencing forced sex were less likely to participate in overall and nonviolent delinquency than females without forced sex experiences. This finding may be attributed to the way in which this item is worded and the types of victimization it is measuring. Specifically, this item does not capture the range of sexual victimization and abuse experiences that an individual may have in their lifetime. It is possible that a person may be sexually victimized in ways that do not involve forced sex per se. Instead, an individual may experience forced touching or other forms of sexual contact to which this item does not connote.¹⁸ Individuals who have been sexually victimized or abused may answer negatively to the forced sex item, but they may have actually experienced sexual abuse that is not reflected in this item. Also important to note is the unavailability of a variable to capture the sexual abuse experiences of the males in the study. Because of the item wording, the item was not included in the analysis for the males, and it is not possible to determine if sexual victimization is an important factor in male delinquency.

Despite this inability to make definitive conclusions regarding forced sex, the current research shows that the feminist perspective is relevant for female offenders. It should be noted, however, that at most, two feminist perspective variables were significant in the same model. Furthermore, only one variable—depression—had significantly stronger effects for females than males. These findings suggest that although the feminist perspective may be able to aid in understanding female delinquency, it does not fully account for the range of causes. Also important is that both females and males are more likely to participate in delinquency if they have been victimized. In light of this finding, victimization should be seen as a general rather than a gender-specific predictor of overall and violent delinquency for males and females.

Traditional criminological theory. The generality-specificity debate can also be addressed by examining variables derived from traditional criminological theories. Overall, measures from these theories are related to delinquency for both males and females, but the variables from the theories associated with delinquency differ across gender. Strain appears to be related for both males and females, but in different ways. Traditional strain is related to females' violence, whereas similar to the findings of Agnew and Brezina (1997) and Mazerolle (1998), general strain is related to males' delinquency but not females' delinquency. The effects of the strain variables, however, were not found to be significantly different across gender.

Similar to the findings for strain, the social bond is important for both males and females, but different parts of the bond are relevant for each gender. Although involvement is a significant predictor of males' violent delinquency, it is not significant for females in any model. An interesting finding was that contrary to the predictions in social bond theory, involvement in sports increased males' likelihood of engaging in violent delinquency. The effects of these two variables were also found to be significantly stronger in the male models.

Unlike involvement, attachment is the more important element of the bond for females. Attachment to friends is a positive, significant predictor of two of the outcome measures

for the females, but it is not related to delinquency for the males. Although this initial finding is supportive of previous research (Anderson et al., 1999), the equality of coefficients test revealed that the effect of attachment to friends is not significantly stronger for females. Attachment to school, which Anderson et al. (1999) found to be related to female delinquency, is a stronger predictor of female delinquency than male delinquency. These findings suggest that the social bond can partially explain male and female delinquency. However, it is important in empirical tests to include measures from the different elements of the bond, because it appears that attachment may be more relevant for females and involvement more relevant for males.

One variable used to measure differential association theory—peer delinquency—is another factor associated with delinquency. This variable is related in each of the three male models and in one of the female models. Because the coefficients were not found to be significantly different, it appears that despite being a more consistent predictor for males, peer delinquency is not a stronger predictor of either male or female delinquency.

The life-course perspective. The findings from the current research also show that the life-course perspective aids in understanding male and female juvenile misconduct. Although variables from this perspective are related to both male and female offending, different variables are relevant for each gender. For females, risky behavior, a measure of low self-control, is significantly related to overall and nonviolent delinquency, and the effect is stronger for females than males. This finding is similar to previous research. First, LaGrange and Silverman (1999) found that risk seeking is a stronger predictor of female delinquency, whereas impulsivity is more relevant for males. Second, Tibbetts and Herz (1996) reported that self-control was a predictor of college females' intent to shoplift.

For males, attention deficits are significant in predicting overall delinquency, but its effect is not significantly different from the effect for females. The finding that low self-control is related to some types of female delinquency (but not male delinquency) and that the effect is stronger for females is somewhat surprising. As such, this finding may be attributed to the way in which the items are measured. The measure of low self-control most commonly used in criminological research entails using a 24-item scale that measures 6 dimensions of low self-control (Grasmick, Tittle, Bursik, & Arneklev, 1993). The scale used in the current study only measures one aspect of low self-control—impulsivity. Perhaps if a more comprehensive measure of low self-control were used, divergent findings may have been produced. Nonetheless, these findings regarding low self-control reflect the importance of including items that capture the range of dimensions of low self-control proposed by Gottfredson and Hirschi (1990) and test these measures for generality across gender.

Generality Across Delinquency Types

If the predictors of delinquency are indeed general, then it would be expected that the causes of delinquency would be invariant across delinquency types. As such, the predictors of male overall delinquency would be the same as the predictors of male violent delinquency, and the same pattern would be found for female delinquency types as well. Supportive of prior research (Alarid et al, 2000; Mazerolle, 1998; Piquero & Sealock, 2004), however, predictors of delinquency do vary for overall, nonviolent, and violent delinquency.

The most striking differences were found between the predictors of nonviolent and violent delinquency, with only three significant variables being shared in the two models.

These findings have two key implications. First, because the predictors of delinquency are not invariant across offending type, general theories may not be adequate. This limitation is because of the fact that general theories attempt to explain all types of crimes with a common set of explanatory factors. The findings from the current research suggest, however, that there are unique predictors for nonviolent delinquency and violent delinquency. Because of these unique predictors, general theories may not be able to address all different types of juvenile delinquency.

Second, the predictors of the different types of delinquency differ across gender as well. Not only do different predictors emerge as being relevant when analyzing distinct offending types, but these differences are also found when examining the different types across gender. As a result, general theories are not able to address the differences evident in the predictors of gender across overall delinquency, nonviolent delinquency, and violent delinquency.

Directions for Future Research

Although the current research addresses many of the issues relevant to the generality-specificity debate, it is not possible to definitively conclude whether general or gender-specific theories are needed. Instead, there must be additional research conducted to more fully address the generality-specificity debate.

The current study uses two waves of data to examine the predictors of delinquency for males and females. This analysis revealed that there are some differences in the predictors of delinquency across gender. What it does not examine is the way in which these factors develop over time or if there are indirect effects of the independent variables. Because the data were collected within a relatively short period of time and only give a snapshot of the development of delinquency, it is not clear what influences early childhood may have on the development of offending for males and females. The life-course perspective suggests that early life experiences and influences have effects on the development of behavior. Based on this premise, these types of factors should be explored for their explanatory power. In addition, pathways to delinquency should be examined to determine whether female and male delinquency have unique pathways as suggested by feminist scholars who argue that abuse and running away may lead to female youth being especially vulnerable to becoming involved in a delinquent lifestyle.

Moreover, it is possible that other groups of individuals should also be investigated separately. Feminist scholars have recently proposed that not only is the experience of being female unique but also the experience of being a racial minority and female (Belknap, 1996; Simpson, 1991). Specifically, they argue that Black females may have a socialization experience that places them at an increased risk of becoming criminal. Other research has pointed to the need to examine risk factors for different age groups (Lauritsen, 1998). To test these assertions, analyses should be done testing the predictors of delinquency across racial, age, and gender groups.

Last, additional comprehensive tests of competing theoretical traditions should be performed. These tests should pay particular attention to examining different theoretical explanations using measures that capture the true intent of the theories and predicting multiple

forms of juvenile misconduct. To understand whether gender-specific theories are necessary, tests of competing theories need to be conducted in the same models and various outcome measures need to be used.

Notes

1. It is possible that instead of depression causing delinquency, they are both manifestations of the same underlying trait (De Coster, 2003) or that delinquency precedes depression in adolescent offenders (Fagan & Western, 2003). To measure depression that occurs before delinquent involvement, measures of depression that tap into affective states that precede involvement in delinquency are used in the analysis.

2. Tests of the difference of coefficients across gender produced no significant differences at the .05 level of significance.

3. Other research has also shown that negative emotionality is related to both male and female antisocial behavior (Moffitt, Caspi, Rutter, & Silva, 2001).

4. Students were stratified by grade and sex and approximately 200 students were selected from each school. (Chantala & Tabor, 1999; Udry, 1998).

5. Analyses were conducted to ascertain whether those individuals who are included in the sample are different from those who were excluded. The individuals selected for analysis have participated on average in fewer delinquent acts than those individuals who have missing data items (1.29 vs. 1.46). The individuals who are not included in the analysis also engage on average in more violent delinquent acts than sample members (.47 vs. .54). The members included in the analysis are not, however, significantly different from those not included in terms of their participation in nonviolent delinquency. It is likely, then, that those included in the analysis are less violent, although not necessarily less delinquent, than those not included.

6. For this analysis, the race variable is coded 0 = non-White and 1 = White. Within the sample, 19.5% ($n = 668$) are Black, 5.4% ($n = 152$) are Hispanic, 1.0% ($n = 35$) are Indian, 2.6% ($n = 88$) are Asian, and .0% ($n = 1$) are of a different race.

7. For a detailed list of the measures used in the analysis, contact the corresponding author.

8. The delinquency measures were coded as variety scales instead of as a frequency for three reasons. First, the response set for the original items was 0 = *none*, 1 = *one or two times*, 2 = *three or four times*, and 3 = *five or more times*. As such, the responses do not reflect a true frequency or a true continuous variable. Second, previous research using the Add Health delinquency measures has also employed variety scales (Bellair et al., 2003; Felson & Haynie, 2002; Haynie, 2003). Third, others have advocated for the use of variety scales when measuring delinquency (Hindelang, Hirschi, & Weis, 1981; Hirschi & Gottfredson, 1995).

9. To estimate reliability, an internal-consistency approach is used. Specifically, Cronbach's alpha was calculated for each scale included in the analysis. All reliability estimates for the scales were also run for the male and female samples separately. All reliability estimates were similar in magnitude to the overall scales for males and females.

10. For all scales, those individuals who did not have answers for each item to be included in the scale were not included in the analysis.

11. The victimization measure is similar to one used by Schreck, Fisher, and Miller (2004) and Resnick (1997) in which the Add Health data was used. Schreck et al., (2004) used 3 of the victimization items that are used in the present analysis, whereas Resnick (1997) used 5 of the items. Examples of the items in this scale are having someone pull a knife or gun on you and being in a physical fight.

12. Because the value of α for this scale was only .579, exploratory factor analysis was also conducted. It was found that the items in the scale loaded on only one factor, with the first component's eigenvalue being 1.984.

13. It is not expected that these items would be internally consistent (Sieving et al., 2001). The items are believed to be related theoretically; however, it is logical that respondents would not answer these items consistently in that a mother who works nights most likely would be home during the morning but be gone at night.

14. This measure was used by Resnick et al. (1997) as a School Connectedness scale. Examples of statements included are: (a) you are happy to be at your school, and (b) you feel close to people at your school. Bellair, Roscigno, and McNulty (2003), using the Add Health data, created a similar school attachment measure. They used four of the items that are used in the current analysis.

15. Females and males also differed by age, with the male sample reporting an older average age (16.01 years) than the female sample (15.80 years).

16. Inclusion of the hazard term in the regression model resulted in the final sample being reduced by three members because of missing data. As such, the regression models predict delinquency and substance use for 3,419 total sample members.

17. The equality of coefficient tests were run with the models that did not include the forced sex variable for all three types of delinquency.

18. In fact, research shows that females experience forms of sexual victimization other than rape (Fisher, Cullen, & Turner, 2000) more often than rape.

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