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**DISSERTATION**

**PSYCHOSOCIAL VARIABLES ASSOCIATED WITH DELINQUENCY  
IN INCARCERATED ADOLESCENTS:  
A COMPARISON BY GENDER AND ETHNICITY**

**Submitted by**

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**In partial fulfillment of the requirements  
for the degree of Doctor of Philosophy**

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**Summer, 2002**

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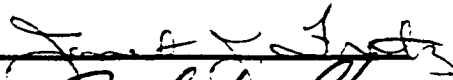




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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY DANIEL J. RIAL ENTITLED PSYCHOSOCIAL VARIABLES ASSOCIATED WITH DELINQUENCY IN INCARCERATED ADOLESCENTS: A COMPARISON BY GENDER AND ETHNICITY BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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**ABSTRACT OF DISSERTATION**  
**PSYCHOSOCIAL VARIABLES ASSOCIATED WITH DELINQUENCY**  
**IN INCARCERATED ADOLESCENTS:**  
**A COMPARISON BY GENDER AND ETHNICITY**

This study described and compared psychosocial variables associated with delinquency in a sample of incarcerated adolescents. Comparisons were made across gender and ethnicity. Participants were Mexican-American, Spanish-American, and White non-Hispanic juvenile offenders who had recently been incarcerated. Data regarding delinquency and psychosocial characteristics were collected through written surveys. Psychosocial variables examined were related to family background, peer characteristics, drug use, school liking and success, psychological adjustment, deviance, and histories of sexual or physical trauma/abuse. There was also an examination of agreement between self-reported drug use and the results of toxicology screens (urine analysis). Data analysis included an exploration of the variables and their relationships to gender and ethnic identification. Study hypotheses included two predictions developed from a recently proposed model of a developmental pathway to delinquency for girls, as well as several hypotheses based on a previous related investigation.

Responses to representative survey items were first examined in order to gain a preliminary understanding of the aggregated personal histories of participants. Mean responses indicated participants generally felt close to their families, and lived with parents. Parental divorce was reported by nearly half of respondents. The average respondent reported fairly strong sanctions against drug use in the family. A majority

reported severe school problems, including having flunked a year, and reported many markers of delinquency among their best friends, such as having stolen a car and been incarcerated. The average respondent showed a lukewarm to cool regard for religion, and a surprisingly low tolerance for deviance in the abstract. Modal responses to psychological subscales (Blame, Anger, Anxiety and Depression) suggested many subjects frequently feel anger and anxiety, but little alienation or depression. The modal response denied having ever been sexually assaulted or beaten by an adult. The average respondent denied using any drugs except alcohol and marijuana in the previous month. The modal response was to report using both alcohol and marijuana 3-9 uses in the previous month.

Results indicated several significant differences for both gender and ethnicity. Overall, females reported worse family experiences, sexual abuse histories, depression and anxiety symptoms than males reported. In the assessment of accuracy of self-reported drug use, females appeared marginally more likely than males to be in the disagreement group (wherein self-reported marijuana use was in disagreement with negative UA results) than to be in the agreement group (wherein self report and UA results were either both positive or both negative). In contrast, ethnicity was not a significant variable in the assessment of accuracy of self-reported drug use. Sufficient differences were observed between Mexican-Americans and Spanish-Americans to justify keeping these two Latino groups separate in subsequent analyses. Within seven univariate analyses of significant multivariate effects for ethnicity, five analyses revealed WnHs reporting more problematic experiences and conditions than at least one other ethnic group. WnHs reported less family caring, family stability, religious values than

either Latino subgroup, and more sexual abuse victimization than was reported by Spanish-Americans. WnHs, together with Mexican-Americans, reported more physical trauma/abuse than did Spanish-Americans. Two exceptions to this generalization were that Spanish-Americans reported more school deviance than the other two groups, and Spanish-Americans reported using more cocaine in the previous month than did WnHs. However, ethnicity never accounted for more than a small proportion of the variance in any of the variables examined, and does not appear to be a particularly useful variable in understanding or intervening in these variables.

These results are discussed in relationship to study hypotheses, including implications for a recently proposed model of a developmental pathway to delinquency for girls, and practical usefulness of these results is interpreted. Limitations of the study are discussed, as are implications for future research efforts.

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## CHAPTER 1

### INTRODUCTION

#### Research Question

This dissertation research project describes and compares Latino (Mexican-American and Spanish-American) and white non-Hispanic (WnH) incarcerated adolescents, on selected psychosocial variables associated with serious delinquency, across groups defined by gender and ethnicity. In general, not enough is known about adolescent delinquency, and even less is known about incarcerated youth. This is particularly true regarding ethnic minority youth and adolescent girls. We need to know more about incarcerated juvenile delinquents, including whether there are significant differences between genders and ethnic groups. This study provides an example of how such comparisons between groups can be used, by testing some predictions based on a proposed model of the development of problem behaviors.

Since 1984, the juvenile population in the U.S. has been increasing. In 1985 there were 69 million persons below age 18, and that number is projected to rise to 74 million by the year 2010 (Snyder & Sickmund, 1995). The juvenile population in the future will include a greater proportion of older juveniles and a greater proportion of racial and ethnic minorities. The number of Hispanic children increased 172% between 1982 and 1990 (Snyder & Sickmund, 1995b), and is expected to increase by 71% between 1990

and 2010. The growth in the white juvenile population during this period will be due to the increase in white Hispanics; the number of WnH juveniles is expected to decline over the period (Bureau of the Census, 1993).

In 1997, the U.S. population included 30.6 million juveniles aged 10-17 years, while an estimated 2.8 million juvenile arrests were made in that year (Snyder and Sickmund, 1999). The proportion of arrests involving juveniles younger than 13 has been relatively constant since 1980, at around 10% across crime categories. In 1997 the rate of incarceration for U.S. residents ages 13-17 was 509 per 100,000, compared with 864 incarcerated per 100,000 persons 18 and older (Strom, 2000). During a representative year (1994), adolescents accounted for 19% of all violent crimes (Federal Bureau of Investigation, 1995). Similarly, approximately 1 in 5 arrests made by law enforcement agencies in 1997 involved a juvenile, and 48% of total juvenile arrests were ages 16-17 (Snyder and Sickmund, 1999). Juveniles were disproportionately involved in arrests for arson, vandalism, motor vehicle theft, burglary, larceny-theft, robbery, and weapons law violations, and underrepresented in arrests for murder, aggravated assault, forcible rape, driving under the influence, drunkenness, and drug abuse violations (Snyder and Sickmund, 1999).

Given both the increases in delinquent behavior among adolescent females (Poe-Yamagata & Butts, 1996; Snyder, Sickmund, & Poe-Yamagatya, 1996), and the rapidly growing population of Latino adolescents (Río, Santisteban, & Szapocznik, 1991; U.S. Department of Treasury, 1998), it is important to begin a scientific examination of the experiences of adolescent girls and Latinos. Such research is crucial to the formation of

descriptive and predictive theoretical models as well as to the planning and implementation of effective prevention and intervention strategies.

### Delinquency

Problems associated with adolescent behavior fill the media and public consciousness. In 1997 law enforcement agencies made an estimated 2.8 million arrests of persons under 18 years of age (Strom, 2000). In a survey of high school seniors from the class of 1997 (Maguire & Pastore, 1998), 9.4% reported having been arrested and taken to a police station at least one time, including 14% of the males and 4% of the females (Tables 3.46 and 3.47). The most frequent reasons for youth referral for mental health services involve serious conduct problems and antisocial behavior (Chamberlain & Friman, 1997), and the frequency of conduct problems has increased over the past few decades (Achenbach & Howell, 1993). In the past half century there has been a major increase in the rate of delinquency in virtually all Western nations (Smith, 1995). There is considerable pressure on the social science community to improve understanding of adolescent conduct problems in order to decrease the costs society bears for such disruptiveness.

Individual behaviors constituting conduct problems range from minor disruptiveness caused by whining, yelling and temper tantrums, to serious transgressions of the social code via drug use, aggression, physical destructiveness and theft. The term "conduct problems" indicates a cluster or syndrome of such behaviors occurring within a circumscribed portion of an individual's history; component behaviors do not individually justify application of the term "conduct problem". Related formal diagnoses in the

Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994) include Conduct Disorder (with Childhood Onset and Adolescent Onset subtypes) and Oppositional Defiant Disorder. Clearly, the frequency and severity of diagnostic conduct problems required to justify application of these diagnoses to children and adolescents is beyond normative levels of antisocial behaviors.

American teenagers perpetrate considerably higher rates of violence than do adolescents in many other countries. American 17-year olds are 10 times more likely to commit murder than their Canadian counterparts (Kelley, Huizinga, Thornberry, & Loeber, 1997). The commission of violent acts is not evenly distributed in U.S. society. Levels of offending vary by demographic characteristics, such as by age, sex, and ethnicity. For example, since 1987, African Americans have outnumbered Whites as juvenile homicide offenders. In 1994, 61 percent of juvenile homicide offenders were African American, and 36 percent were White (Snyder et al., 1996). In recent research conducted in three major American cities (Kelley et al, 1997), serious violence prevalence rates (i.e., the percentage of youths reporting involvement in these behaviors) were higher among minority groups. The differences in rates between the Caucasian and the two ethnic minority groups examined (African American and Hispanic) were often substantial. Girls reported considerable involvement in serious violence. Between 1991 and 1995, the rate of increase in arrests of juvenile females was higher than for their male counterparts in most offense categories, particularly the violent offense categories (Snyder, 1997).

## Incarceration

In 1990, about 1 in 10 arrested juveniles (approximately 300,000) was held in some form of temporary holding facility maintained by law enforcement agencies. Regardless of offense, males were more likely to be detained than were females, and a disproportionate amount of juveniles in custody (more than 6 in 10) were minority youth (Snyder and Sickmund, 1999). Recently, of the total number of juveniles in custody, 37% were of White non-Hispanic race/ethnicity, while Hispanic juveniles were 19% of the total (Snyder and Sickmund, 1999). This represents a disparity in custody rates (per 100,000 juveniles in the population): 515 for Hispanics, compared to 204 for White non-Hispanics. The female proportion of juveniles in custody varied by race and ethnicity. While females accounted for 18% of White non-Hispanic juveniles in custody, the female proportion was 9% for Hispanics (Snyder and Sickmund, 1999).

A recent examination of health risk behaviors in a sample of juveniles held in correctional facilities across the U.S. (Morris, Harrison, Knox, Tromanhauser, Marquis, & Watts, 1995) included over 330 Hispanic youth and nearly 400 White non-Hispanic youth, and resulted in some interesting comparisons by gender and ethnicity. Among its findings were that girls and boys reported comparable rates of drinking behaviors. However, girls reported more illicit drug use than boys, across several drug categories. The finding that the rate of girls using cocaine was nearly double the rate for boys was contrasted with the reverse pattern found in the national sample examined by the Youth Risk Behavior Surveillance System (YRBSS; U.S. Department of Health and Human Services, 1991). Rates of drug use reported by YRBSS, including highest use by Hispanics (9%) versus 6% of white teens reporting use, were deemed consistent with

percentages in the Morris et al. incarcerated group. Gang membership varied little between girls and boys, but nearly twice the percentage of Hispanics (59%) belonged to a gang as did whites (35%). Eleven percent of the males and 46% of the females reported a forced sexual event in the past. Sexual abuse was reported by 21% of whites, and by 8.5% of Hispanics. Of respondents who reported being forced to have sex, 43% also reported having suicidal ideation, and 35% reported one or more suicide attempts, in contrast to those who reported no rape with an 18% ideation rate and 12% attempt rate. Incarcerated females had higher rates of all suicidal behaviors, while incarcerated whites had higher rates than the other ethnic groups examined.

### Theories of Delinquency

Several general sets of theories of deviance can be identified, including cultural deviance theories, social control theories, integrated theories, and interactional theories. All attempt to describe relationships between delinquent behaviors such as drug use, and related factors such as peer influences. Many factors predictive of behavior problems have been examined, and there has been a proliferation of prevention and intervention programs based on manipulation of selected socialization factors. Theories of delinquency vary in emphasis on particular factors and in descriptions of causal relationships. One way they can be differentiated is by the position of the peer variable in the causal structure.

Cultural deviance theories, such as Sutherland's (1939) differential association theory, view delinquency as an outcome of a learning process, and argue that association with delinquent peers is a prime cause in this learning process. Sutherland theorized that

in their social relationships people learn values that are relatively favorable or unfavorable to subsequent delinquent behavior, and that these values are most strongly learned from one's intimate peer groups. Therefore peer relationships lead to inculcation of values related to criminality, and that values favorable to deviance lead to deviant behavior. Contrary to Sutherland's (1939) argument that peers have an indirect effect on delinquency, Thornberry and Krohn (1997) reviewed the recent research literature and concluded that association with deviant peers has a direct effect on delinquency and drug use, as well as indirect effects. They also concluded from their review that peer influence is conditioned by beliefs about deviance and by parental and school variables. In attempts to improve upon Sutherland's theory, in part by making theories that were more testable, social learning theories appeared. Akers' (1973) social learning theory presented a model in which peer relationships had both an indirect path to delinquent behaviors, via learning of values favorable to delinquency, and a direct effect resulting from modeling of delinquency by peers and reinforcement by peers of delinquent behaviors. Another social learning theory, Jessor and Jessor's (1977) problem behavior theory, interprets the covariation of delinquent behavior with other problem behaviors such as drug use as an indication of a general syndrome of problem behavior. Problem behavior theory conceives of three psychosocial systems: the personality system, the perceived environment system, and the behavior system. All variables related to problem behaviors can be classified into these three systems, and positioned in the causal chain in terms of their proximity to the problem behavior. These variables can include associated behaviors, values, and beliefs, psychological characteristics, and environmental factors. In problem behavior theory, peer approval and peer behavioral modeling are part of the

perceived environment system. These peer variables are considered proximal to problem behavior, and therefore are expected to have a strong and direct impact on problem behavior (Jessor & Jessor, 1977; see also Jessor, Donovan, & Costa, 1991).

Social control theories view association with delinquent peers as a consequence of participating in problem behavior, or as caused by a third variable that also causes delinquency. Hirschi's (1969) control theory shares the latter view: both association with delinquent peers and problem behaviors are caused by a weakening of the social bonds to conventional society, and the apparent relationship between peer associations and delinquency is spurious. Hirschi asserted that weak bonds to conventional society (resulting in reduced control over the individual) directly increase the probability of delinquency. Hirschi's (1969) model is also notable for stating that delinquents tend to have limited social skills, with relatively weak attachments between delinquent peers, resulting in limited peer influence among delinquents.

More complex, integrated models of delinquency, such as those presented by Elliott, Huizinga, and Ageton (1985), Hawkins and Weis (1985), Lahey, Waldman and McBurnett (1999) and Simons, Conger and Whitbeck (1988), have attempted to combine the best characteristics of preceding models. Additionally, integrative models have sought explanations for motivations to commit delinquent behavior and to associate with delinquent peers. Integrated models suggest delinquent peer associations provide the primary motivation for problem behaviors, while "strain" (the frustration of not being able to attain mainstream goals due to social class limitations) and weak bonds to conventional values provide weak secondary causal pathways to delinquency.

Finally, interactional theories of delinquency, such as presented by Elliott, Huizinga, and Ageton (1985), and Thornberry (1987), hold that over the life course there are bidirectional influences between association with delinquent peers and delinquent behavior. That is, associations with delinquent peers will tend to result in deviant behaviors over time, and engaging in deviant behaviors will lead to delinquent peer associations.

Another important approach to adolescent deviant behavior, though limited to substance abuse, is the application of risk and protective factor models in predicting susceptibility to drug use. Initiated by Bry and colleagues (for example, Bry, McKeon & Pandina, 1982; Bry & Kingsley, 1990), and later refined and extended by Newcomb and colleagues (Newcomb, 1995; Newcomb & Felix-Ortiz, 1992; Scheier & Newcomb, 1991), the central concept in these models is that risk and protective factors are cumulative in impact on substance use, and that total numbers of factors appear to be more important than specific combinations of factors. No individual factor has emerged as the single key factor regulating risk susceptibility. A wide and increasing range of factors from the biological, psychological/behavioral and social/environmental domains have been shown to have significant impacts on substance abuse, and the complex relationships between these and other variables continue to be studied. Many of these risk factors are not only pertinent to substance abuse, but to general delinquency and other negative outcomes as well.

## Developmental Models of Delinquency

Accurate models of the etiology of behavior problems would likely offer implications for reduction of these problems. Developmental approaches to delinquency attempt to understand the variety of developmental trajectories leading to delinquency, and hypothesize there are subgroups of delinquent youth with different developmental courses that require different causal explanations (Lahey, Waldman & McBurnett, 1999). Hypothesized developmental pathways model the development of problem behavior over time, allowing the identification of youth at high risk of developing more serious delinquent behaviors, helping predict future problem behaviors, and explaining why different individuals develop different histories of behavioral pathology (Loeber & Farrington, 1994). Increased knowledge about etiological pathways to delinquency is likely to lead to improved techniques for prevention and intervention, tailored to individual subpopulations.

Loeber (1990) provides an example of a developmental theory of delinquency. He describes a series of "critical periods" that children pass through, en route to adulthood, and theorizes that the presence of certain risk factors during these sensitive stages can lead to the emergence of delinquent behavior. Loeber identifies individual risk factors (such as "difficult" temperament in early childhood, hyperactivity, early conduct problems, or social withdrawal) as well as social risk factors (such as parental uninvolved or aggression).

However, many authors have recently mentioned the limits to existing knowledge about causal and risk factors associated with the development of conduct problems in youth (Hinshaw & Anderson, 1996; Lahey & Loeber, 1994; Lahey, Waldman &

McBurnett, 1999; Loeber & Farrington, 1994; McMahon, 1994; McMahon & Wells, 1998; Silverthorn & Frick, 1999). These authors note there is even less refined knowledge allowing construction of differential models for different adolescent subpopulations, and the urgency of expanding this knowledge base. An example pertinent to the present study is that no major models of delinquency have been applied to Latinos in the United States. More generally, there has been inadequate examination of ethnicity and gender as they impact delinquency.

Close attention to the age of earliest onset of antisocial behavior is found in the models of many developmental theorists (Farrington et al., 1990; Lahey, Waldman & McBurnett, 1999; Loeber, 1988; Loeber, Stouthamer-Loeber, & Green, 1991; Moffitt, 1993). The currently predominant model for the development of antisocial behavior in adolescents is based on age at onset of the disorder, and involves two distinct trajectories. This two-trajectory model is embodied in the DSM-IV's (American Psychiatric Association, 1994) two subtypes of Conduct Disorder. These Conduct Disorder subtypes are the Childhood-Onset Type and the Adolescent-Onset Type. These subtypes are differentiated by whether there is onset, prior to age 10 years, of at least one behavioral criterion characteristic of Conduct Disorder. The DSM-IV notes that Conduct Disorder is much more common in males, especially for the Childhood-Onset Type. Individuals with the Child-Onset Type of Conduct Disorder frequently display physical aggression toward others, and have poor peer relationships. In contrast, individuals with Adolescent-Onset Type Conduct Disorder are less likely to display aggression, and tend to have more normative peer relationships. There is a poorer prognosis for individuals with the Child-Onset Type than for those with the Adolescent-Onset Type. Individuals with the Child-

Onset Type are less likely to achieve adequate social and occupational adjustment as adults, and have increased risk of persistent Conduct Disorder and of developing adult Antisocial Personality Disorder (American Psychiatric Association, 1994). Many developmental theorists (Loeber, Stouthamer-Loeber, & Green, 1991; Lahey, Waldman & McBurnett, 1999; Moffitt, 1993) assert that individuals with later onset of antisocial behavior tend to engage in less serious antisocial behavior and exhibit greater peer influence over their delinquency than individuals with earlier onset.

Although there is a prevalent assumption that the predominant model applies equally well across genders (see, for example, Moffitt, 1994) and ethnicities, it is unclear how well this model explains the development of conduct problems in female or Latino subpopulations. There are suggestions within the literature that the predominant models of the development of conduct problems describe certain adolescent populations better than others. The current two-trajectory model for the development of antisocial behavior in adolescents was developed largely from research on boys (Moffitt, 1993), and there is evidence suggesting this model does not fit girls as well as it fits boys. For example, developmental theorists Lahey, Waldman and McBurnett (1999) state that "there may be important gender differences that will require different models for girls and boys" (p. 669). Similarly, Patterson, Reid and Dishion (1992) contended that the developmental pathways for conduct problems may be different for boys than for girls. Keenan and Shaw (1997) found that during the preschool period there are almost no differences, by gender, in rates of problem behaviors. After the age of 4 years, the rate of conduct problems in girls decreases, while the rate for boys is stable or increases, leading to a predominance in male behavioral problems throughout childhood (Keenan & Shaw,

1997). In adolescence there is an increase in these conduct problem behaviors across gender, but with a much larger increase in antisocial behavior in girls than in boys (Offord, Boyle, & Racine, 1991). This results in a partial convergence, across genders, in prevalence rates for antisocial behavior (American Psychiatric Association, 1994). Several studies support the conclusion that this narrowing of differences in prevalence of antisocial behavior is primarily associated with a later onset of these behaviors in girls (Butts, Snyder, Finnegan, Aughenbaugh, Tierney, Sullivan, & Poole, 1992; Stattin & Magnuson, 1984; Warren & Rosenbaum, 1986). This narrowing of differences appears to be mostly due to an increase in nonaggressive antisocial behaviors in adolescent girls (McGee, Feehan, Williams, & Anderson, 1992; Offord et al., 1991).

A much closer similarity in background correlates has been observed between adolescent-onset girls and childhood-onset boys than between adolescent-onset girls and adolescent-onset boys. These correlates include temperamental vulnerabilities such as impulsivity (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996), family dysfunction, low average IQ, and ADHD. There is also a closer similarity between adolescent-onset girls and childhood-onset boys than between adolescent-onset girls and adolescent-onset boys in adult outcomes (Hinshaw et al., 1993; Moffitt, 1993, Silverthorn & Frick, 1999). In general, girls with conduct disorders appear to have worse adult outcomes than do antisocial boys (Lewis, Yeager, Cobham-Portorreal, Klein, Showalter, & Anthony, 1991; Zoccolillo & Rogers, 1991), although the results of earlier studies appear to be more mixed (see Robins, 1986, for a review). The usual two-trajectory model does not account for these observed differences in the development of adolescent-onset antisocial behavior in girls.

### Delayed-Onset Pathway: Modeling Delinquency in Girls

Persephanie Silverthorn (Silverthorn, 1998) and Paul Frick (Silverthorn & Frick, 1999) have proposed an alternative developmental model that attempts to account for differences by gender observed in the development of delinquent behaviors. Their model retains the current childhood-onset and adolescent-onset subtypes for boys and proposes a third developmental pathway for girls. This proposed model is based on extensive review of research literature (Silverthorn, 1998; Silverthorn & Frick, 1999), as well as preliminary empirical research (Silverthorn, 1998). Silverthorn (1998) examined a sample of 72 incarcerated adolescents, and found evidence for two groups of boys with either childhood- or adolescent-onset pathways, as well as support for the proposed model of a distinct group of female delinquents with a delayed onset of antisocial behaviors. Girls tended to be more similar to the childhood-onset boys than to the adolescent-onset boys in numbers of Oppositional Defiant Disorder symptoms, rates of callous-unemotional traits and poor impulse control, and variety of crime scores.

Based on their review of available data, Silverthorn and Frick propose there is a single, unique developmental trajectory for antisocial girls, which they have labeled the "delayed-onset" pathway. They propose that, for antisocial adolescent girls, the underlying predisposing factors to adolescent antisocial behavior are similar to the underlying factors in male childhood-onset Conduct Disorder, and have been present since earlier childhood, yet girls' antisocial behaviors do not emerge until adolescence. Predisposing factors, for both childhood-onset male Conduct Disorder and delayed-onset female antisocial behavior, include dysfunctional family backgrounds with poor parenting practices, cognitive and/or neuropsychological impairments, poor impulse

control and callous-unemotional traits. Silverthorn and Frick (1999) summarize the available findings as suggesting that "girls with a history of conduct problems in adolescence almost invariably have poor adult outcomes, regardless of whether the outcomes are measured as adult arrests, ...psychiatric disorders, alcohol and substance abuse, or other behaviors characteristic of an unstable and chaotic lifestyle..." (p. 112). Therefore, antisocial girls tend to show many characteristics, including poor adult outcomes, which are more similar to boys with childhood-onset behavior problems than to boys with adolescent-onset behavior problems. Members of all three of these groups exhibit severe and impairing patterns of antisocial behavior, and thus are distinct from adolescents, both male and female, who exhibit normal adolescent rebellion and developmental struggles related to autonomy and identity formation, yet fall short of a diagnosis of Conduct Disorder or serious legal consequences.

In this Silverthorn and Frick model, the outstanding difference between most antisocial girls and boys with childhood-onset behavior problems is that antisocial behaviors in girls tend to be delayed until adolescence. These theorists propose a number of mechanisms that could delay the appearance of antisocial behaviors in girls until adolescence. They cite increasing pressure from parents, teachers and peers during the transition to middle childhood to conform to typical gender stereotyped behaviors, and the increased desire in children to please their peers by adhering to fairly inflexible gender stereotypes. They also cite evidence that preadolescent girls do not react as adversely as boys when confronted with negative events, such as initiating problem behaviors in response to parental divorce.

In addition to suggesting reasons why the expression of antisocial behaviors by girls is delayed until adolescence, Silverthorn and Frick cite factors that may cause the eventual emergence of these behaviors in at-risk girls, factors that are unique to puberty. For instance, girls tend to judge events marking the onset of puberty (such as changes in their appearance) much more negatively than boys judge these same changes in themselves. In addition, for girls the presence of childhood stressors like family conflict and father absence is associated with earlier menarche, and there is an apparent relationship between early menarche and antisocial behavior. At least one study (Roff & Wirt, 1984) found that family dysfunction is the strongest predictor of later antisocial behavior in girls. These findings support the speculation that "for girls, a dysfunctional family environment may be directly linked to antisocial behaviors in adolescence for girls with no apparent behavior problems in childhood" (p. 119, Silverthorn & Frick, 1999). Another factor may be that, in contrast to boys, girls' self-esteem tends to drop at puberty, and for girls puberty's changes often coincide with the difficult transition to junior high school. Finally, in adolescence girls become exposed to greater peer modeling of and peer support for antisocial behaviors, as both childhood-onset and adolescent-onset boys are now committing antisocial acts, while parental supervision tends to decrease during adolescence. In summary, puberty brings a convergence of physical, hormonal, and psychosocial changes that encourage girls with pre-existing vulnerabilities to begin engaging in serious antisocial behaviors. The consequences of these behaviors, and perhaps predisposing temperamental characteristics, leads to a variety of negative adult outcomes, including antisocial behaviors, substance abuse, and internalizing and/or somatization disorders.

In proposing this alternative model of developmental pathways to serious antisocial behavior in adolescents, Silverthorn and Frick make several testable assertions to guide future research. As will be seen in a later section on predictive hypotheses, some of these assertions are tested in the current study.

### Gender

Twenty-six percent of those juveniles arrested in 1997 were female, and a greater portion (23%) of female arrests involved a juvenile than did male arrests (18%). Juveniles were involved in a larger proportion of male arrests than female arrests for arson, vandalism, murder, and drug abuse violations, but there was little gender difference in juvenile proportions of arrests for most other crimes (Snyder and Sickmund, 1999). The overall juvenile violent crime arrest rate increased from 1988 to 1994, but has rapidly declined since then. During this period of increase, the female juvenile violent crime arrest rate more than doubled, while the male rate increased by two-thirds. Overall juvenile property crime arrest rates changed little from 1980 to 1997. However, while juvenile male arrest rates for the FBI's (Federal Bureau of Investigation) Property Crime Index offenses (burglary, larceny-theft, motor vehicle theft, and arson) declined during the 1990's, female rates increased 39% between 1981 and 1997 (Snyder and Sickmund, 1999). In summary, the increase in juvenile arrest rates since 1981 has been greater for females than for males for all but drug cases.

Psychological research on the correlates of delinquent behavior has historically focused on males. In general, there is a deficit in gender-specific developmental research

involving aggressive and antisocial behavior in girls (Shaw & Winslow, 1997). Recent literature contains many statements such as the following: "Investigations of girls and gangs have lagged relative to the study of parallel phenomena in boys. . . . consistent with the pervasive gender bias that exists in developmental research on aggressive and criminological studies of antisocial and violent behavior" (Cairns et al., 1997, p. 200). Most research and theory has not addressed the experiences of girls, particularly ethnic minority females (Loeber, 1990).

### Ethnicity/Culture

Another emerging research need is an examination of ethnic/cultural differences in adolescent antisocial behaviors, including interactions of gender and cultural factors. One major theme in the ongoing debate on the cultural influences on etiology, symptoms and course of mental disorders is the distinction between the Etic (universal) and the Emic (culture-specific) aspects of various disorders. There is controversy about conduct problems such as antisocial personality disorder (ASPD), exemplified by the polar positions (as cited in Dinges, Atlis, & Vincent, 1997) of Paris (etic; 1991) versus Mezzich, Kellman, Fabrega, Good, Johnson-Powell, Lin, Manson, & Parron, (emic; 1992). Prevalence rates for ASPD and delinquency among ethnic groups have been compared, with mixed results (for a recent review, see Dinges et al, 1997). Most epidemiological studies have found no significant differences in prevalence of ASPD across Black, Hispanic and White subgroups within the United States (Windle, 1990). Ethnicity has been found to be related to delinquency (Federal Bureau of Investigation,

1995, 1997; Sickmund, Snyder, & Poe-Yamagata, 1997; Snyder, & Sickmund, 1999) but not when socioeconomic status is accounted for (Gold, 1970).

Research literature regarding the delinquent behavior of Latinos is currently scarce. Unfortunately, the most authoritative source for crime statistics, the FBI's Crime in the United States 1997 (Federal Bureau of Investigation, 1997; which presents the Uniform Crime Reporting data), does not distinguish the ethnic group Hispanic. In 1997 FBI data, 91% of Hispanics ages 10-17 were classified racially as white (Snyder and Sickmund, 1999).

Of the studies which have explicitly examined Latino and Latina youth, some variables that have been shown to be positively related to delinquency are substance abuse (Chavez, Edwards, & Oetting, 1989; McBride, Joe, & Simpson, 1991), deviant peer associations and anti-social peer pressure (Frauenglass, Routh, Pantin, & Mason, 1997; Fridrich & Flannery, 1995), academic problems and dropping out of school (Chavez, Oetting, & Swaim, 1994), and low satisfaction with school (McBride, Joe, & Simpson, 1991). Chavez, Oetting, and Swaim (1994) reported that rates of delinquent behavior did not differ significantly between Mexican American and White non-Hispanic females.

One of the variables used in the current study is self-reported ethnic identification, and members of one of the ethnic subgroups examined selected the "Spanish-American" label to describe themselves. The "Spanish-American" category is not well known outside the American Southwest, and thus merits further explanation. As used herein, "Spanish-Americans constitute a minority that is distinctive by virtue of its history though not in all its cultural attributes" (p. 950, Thernstrom, Orlov, & Handlin, 1980).

Though often referring to themselves in Spanish as Mejjicanos, Spanish-Americans usually reject the English language labels “Mexican” or “Mexican-American” in preference to “Spanish-American”. Spanish-Americans trace their ancestry directly to Spanish colonialists who settled in northern New Spain during the 16<sup>th</sup> and 17<sup>th</sup> centuries, while Mexico was a Spanish colony. Although Spanish-Americans share many cultural features with Mexicans and Mexican-Americans, they retain a sense of separate and distinct group identity, based on historical origins, culture, values and linguistic differences (Gonzales, 1997). This is particularly true in the state of New Mexico, which did not see the strong influx of Mexicans experienced by other Southwestern states in the 180 years since Mexican independence. Mexican-Americans in New Mexico have been described as “very unlikely” to claim Spanish-American ethnicity under ordinary circumstances (E. Chavez, personal communication, April 25, 2002).

### Gingerich Study

A recent study (Gingerich, 1998) examined psychosocial variables associated with delinquency in Latina and White non-Hispanic adolescent females. Her population sample included both incarcerated and in-school girls. Variables examined involved school liking and success, perceptions of social relatedness, psychological adjustment, and deviance. She found these psychosocial variables were related to group membership (i.e., incarcerated versus in-school), but were virtually unrelated to ethnic differences. For example, in-school girls were higher than incarcerated girls on school liking, school success, religious identification, anxiety, and self-esteem. In-school girls were lower than incarcerated girls on school deviance, deviant behavior, anger,

depression, and blame. On the ethnicity dimension, Latinas scored slightly higher on religious identification. The discriminant analysis revealed that school liking was one of the strongest variables to predict group membership for both ethnic groups, second in relative strength only to the expected difference in deviant behavior. However, school success was a relatively important factor in discriminating between incarcerated and in-school groups for Latinas, but not for White non-Hispanic girls. Gingerich concluded that separation of Latina and White non-Hispanic girls into two unrelated ethnic groups may not be justified by these findings, at least for this population sample. This finding is significant, because the present research project uses a portion of the same data as that used by Gingerich. In addition to the data for incarcerated girls, this study examines data for incarcerated adolescent boys, and makes comparisons across gender and ethnicity on a different set of dependent variables.

#### Psychosocial Variables of Interest

Family When incarcerated youth are asked about the causes of delinquency, they most frequently mention family issues, followed by peer influences and drugs, school effects, and some community issues such as poverty (Goldstein, 1990). Family factors that delinquents identified as important included lack of parental love, parental rejection, discipline issues (e.g., harsh parental discipline and abuse, lax parental discipline, lack of enforcement of disciplinary actions), family behavioral modeling, family discord and violence, and the quality of the relationship with a single parent (Goldstein, 1990). Family conflict, parental hostility, lack of warmth, and neglect increase adolescent delinquency (Cernkovich & Giordano, 1987; Wright & Wright, 1994).

Attachment to family, defined as either the adolescents' feelings toward the parents or the adolescent's perceptions of the parents' feelings, reduces delinquent behavior in general (Laub & Sampson, 1988; Wright & Wright, 1994). Level of attachment to parents is also predictive of serious, persistent delinquency (Laub & Sampson, 1988). The question of whether attachment with the same- or opposite-gender parent is more important has been examined, with mixed results (Hill & Atkinson, 1988; Krohn & Massey, 1980). Adolescents who are attached to their parents, spend time with them, and are supported and supervised by their parents are less likely to have delinquent friends (Warr, 1993b) or use illicit drugs (Anderson & Henry, 1994). Family caring reduces associations with drug using peers, and subsequently, reduces drug use (Hays & Revetto, 1990). Adolescent rejection of parents, or perceived rejection by the parents, has been found to be one of the most powerful predictors of delinquency (Wright & Wright, 1994). Family factors related to delinquency may operate cumulatively (Newcomb & Felix-Ortiz, 1992). For example, the combination of low parental affection and strong parental controls enhances delinquency (Agnew, 1991), especially among early adolescent females (Seydlitz, 1993a). Seydlitz found that the highest levels of supervision, discipline and control may not be the optimum for reducing delinquency (Seydlitz, 1993b). How parents actually treat and discipline their children is important, possibly more important than attachment to parents for males (Peterson, Hawkins, Abbott, & Catalano, 1994). Several studies have found many family variables, including parental attachment, parental controls, parental support, and parental rejection, are better predictors of delinquency for males than females (Johnson, Su, Gerstein, Shin, & Hoffman, 1995; Seydlitz, 1991). Some studies have found that the importance of family

factors varies by gender, ethnicity, and the combination of gender and ethnicity (Cernkovich & Giordano, 1987; Joseph, 1995).

Studies suggest there is an indirect effect of family modeling of deviance on delinquency. Sampson and Laub (1994) report parental deviance and instability contribute to deviance by adversely affecting attachment, discipline, and supervision, and thus indirectly increase delinquency. Parental modeling of drug use, and parental attitudes toward drugs, correlate significantly with adolescent drug use (Denton & Kampfe, 1994). Family drug use, by both parents and other family members, increases juveniles' drug use (Anderson & Henry, 1994; Denton & Kampfe, 1994; Peterson, Hawkins, Abbott, & Catalano, 1994).

A growing proportion of children are born to unmarried mothers, and an increasing percentage of children live in single-parent households. Between 1970 and 1990, the proportion of children living in single-parent households increased from 15% to 27% (U.S. Congress, 1992). Over these two decades, there were substantial declines in the proportions of both white and black two-parent families (though two-parent black families had the greatest decrease, declining to 39% of total black families in 1990) (U.S. Congress, 1992). In a 1997 survey of young people (to age 21) in long-term state operated juvenile institutions, about 70% did not live with both parents while growing up (Beck, Kline, & Greenfield, 1988).

There appears to be no consensus on the effect of family structure, and specifically the effect of living in a single-parent home, on delinquency. Some studies indicate little or no effect when other factors are considered (Barnes, Farrell, & Banerjee, 1994; Wright & Wright, 1994), while others (Denton & Kampfe, 1994; Jenkins, 1995;

Lauritsen, 1994) report some relationship between single-parent homes and delinquency. Family conflict has been presented in the literature (McCord, 1979; Rutter & Giller, 1983) as a stronger predictor of delinquency than family structure. Family composition has also been shown to have a significant effect on adolescent drug use (Denton & Kampfe, 1994). In a study by Kellam, Brown, Rubin, and Ensminger (1983), one of the best predictors of adolescent drug use was a family with the mother as a single-parent. Gender and ethnicity may affect the relationship between family structure and delinquency. For example, Austin (1978) found that father absence before age 5 was more strongly predictive of offenses against people for white females than for white males. Matsueda and Heimer (1987) reported in their study that the effect of broken homes on delinquency was greater for African American males than for white males. Lauritsen (1994) found that family structure influenced sexual activity of white adolescents, but had no effect on sexual activities for African Americans. Parental supervision is important in controlling delinquency, more so than discipline (Seydlitz & Jenkins, 1998).

Peers Exposure to delinquent peers is strongly related to committing delinquency. Kornhauser (1979, p. 236) states that among studies examining associations between delinquency and peers, the relationship between adolescents who have friends who commit delinquent acts and their own delinquency has been found in "all inquiries". In a major review on the relationship between peers and delinquency, Thornberry and Krohn (1997, p. 224) generalize that among studies comparing the relative effects of peer influence versus parental relationships, "the peer variable has been found to explain significantly more of the variance in deviant behavior than any of the parental

relationship variables". There has been a robust finding of self-reported delinquency correlating positively with number of delinquent friends (Elliot, Huizinga, & Ageton, 1985; Matsueda, & Heimer, 1987; Warr & Stafford, 1991). Peer drug use has also been found to be highly associated with adolescent drug use (Brook, Cohen, Whiteman, & Gordon, 1992; Elliott, Huizinga, & Ageton, 1985; Oetting & Beauvais, 1987).

Delinquents are more peer-oriented than other adolescents (Agnew, 1985; Wiatrowski, Griswold, & Roberts, 1981). The importance of peers peaks at age 17, and declines rapidly thereafter (Warr, 1993a). The rapid onset of and rise in delinquency around ages 13 and 14, and the decline in delinquency after age 17, follows the same pattern as the importance of peers. Where peer influence is strongest is in adolescent substance use (Dinges & Oetting, 1993). Kandel (1985) reported that parental influence on drug use is stronger during early stages of drug involvement, primarily influencing the initiation phase of drug use. Peer influence becomes predominant as adolescents become more firmly involved in drug use. The literature contains mixed results on the question of ethnic differences in the effect of peers on drug use. Giordano, Cernkovich & De Maris (1993) indicated that African American adolescents may be less attached to peers than are whites, and thus are less susceptible to peer pressure. However, African American adolescents might also be more likely to commit delinquent acts alone (Gold, 1970), and Joseph (1995) found that associating with delinquent companions was significantly related to delinquency for African Americans, but the effect was greater for males. Looking at gender, some studies suggest that delinquent peers have a greater effect on males' than females' delinquency (Jensen, 1972; Thompson, Mitchell, & Dodder, 1984).

Drug Use Research on delinquency and drug use is largely based on Hirschi's (1969) social control theory and Hawkins and Weis's (1985) social development model. These models emphasize the role of the social context, such as the nature of involvement and bonding with family, friends and school. Though there is clearly an association between adolescent drug use and delinquency, the nature of that relationship remains unclear. Some researchers believe delinquency and drug use are caused by the same underlying factors, rather than having a simple causal relationship (as in Jessor and Jessor's (1977) Problem Behavior Theory; see also Snyder & Sickmund, 1995), while others (Greenwood, 1995) suggest adolescent drug use has an independent causal link to juvenile delinquency. However, a strong relationship is observed between drug use and delinquency (Sommers & Baskin, 1994), regardless of population sampled (Otero-Lopez, Luengo-Martin, Miron-Redondo, Carrillo-DeLa-Penta, & Romero-Trinanes, 1994). It appears there are common underlying factors for drug use and delinquency, including family, peer and personality variables (Otero-Lopez et al., 1994), low educational achievement (Stouthamer-Loeber & Loeber, 1988), family structure and conflict (Hawkins, Catalano, & Brewer, 1994), and childhood aggression (O'Donnell, Hawkins, & Abbott, 1995).

The present study examines variables related to the use of several drugs, but makes special use of two sources of information about marijuana consumption. An objective laboratory measure of marijuana metabolites (cannabinoids) in participants' urine was examined, in comparison to self-reports about marijuana use in the previous month. Toxicology screens for cannabinoids commonly utilize urine analysis (UA). There are a large number of factors that influence UA test results, including the specific

testing technology and concentration cutoffs used, timing of urine collection since last use, marijuana use histories of the individuals examined (such as potency, amount consumed, and frequency of use), and individual metabolic and renal characteristics (Niedbala, Kardos, Fritch, Kardos, Fries, & Waga, 2001). Positive UA results may be due to either recent use or an accumulation from chronic heavier use. In individuals who smoke marijuana infrequently, urinary metabolites usually fall below cutoff concentrations within 2-5 days of the last use of marijuana (McBay, Dubowski & Finkle, 1983; Schwartz & Hawks, 1985). The elimination of metabolites from a single use of marijuana can take up to 12 days (Law, Mason, Moffat, Gleadle & King, 1983). Detection time increases significantly following heavy chronic use, to periods exceeding four weeks after last use (Cridland, Rottanburg & Robins, 1983; Schwartz, 1987). One recent study examined detection times of cannabinoids in urine, using several testing methods and cutoffs, and concluded that drug detection times (the period of time after drug exposure that an individual is likely to test positive) using older (higher) cutoffs are shorter than previously assumed (Huestis, Mitchell, & Cone, 1995). This study noted that although a recent reduction in the cannabinoid cutoff used by military and federally mandated programs increased detection times and increased sensitivity, cannabinoid immunoassay using the newer cutoff (50 ng/mL) provides only a 1-2 day window of detection following single acute doses (cf. Niedbala et. al, 2001). Proprietors of commercial cannabinoid UA systems frequently claim the rate of false positives is insignificant, although some rate of false negative results is expected. Exposure to “secondhand” marijuana smoke is extremely unlikely to result in a positive UA, even using the low cutoff of 20 ng/mL (Schwartz & Hawks, 1985).

School Academic achievement and the perception of being a good student have consistently been shown to be inversely related to delinquency and substance use (Agnew, 1985; Chavez, Oetting, & Swaim, 1994; Hagan, 1991; Patterson & Dishion, 1985; Seydlitz & Jenkins, 1998), regardless of race (Jensen, 1976), attitude toward school (Mann, 1981), or gender (Elliott & Voss, 1974; Rankin, 1980). School failure has been shown to have a strong relationship to delinquency (Gold, 1978; Joseph, 1996; Siegel & Senna, 1988). However, differences exist, by gender and ethnicity, in the relationship between delinquency and adolescents' attitudes toward school. Attachment and commitment to school, and perceptions of opportunities, have greater effects on inhibiting delinquency for females than for males (Krohn & Massey, 1980; Rankin, 1980). Academic self-esteem, in turn, has been found to be a unique predictor of school disengagement for girls, while academic achievement was found to be a unique predictor for boys (Castro, 1999). Perceived blocked opportunities are a better predictor of delinquency for whites than for African Americans (Cernkovich & Giordano, 1979). Levels of academic performance (Jessor, 1976; Robins, 1980) and school bonding (Cernkovich & Giordano, 1992) are predictive of adolescent drug abuse.

Psychological Delinquents have been characterized as being more impulsive, hyperactive, aggressive, anxious, extroverted, and less goal oriented than are nondelinquents (Binder, 1988). A relationship has been reported between low self-esteem and higher levels of depression, hopelessness, and suicidal ideation, and an increased likelihood of having previously attempted suicide (Overholser, Adams, Lehnert, & Brinkman, 1995). The findings for the relationship between self-esteem and

drug use have been mixed, and some studies have found the correlation to be low (see, for example, Kaplan, Martin, & Robbins, 1982; White, Johnson, & Horwitz, 1986).

A recent study (Fitterer, 1998) examined adolescent Hispanic females, many of whom were delinquent and/or gang-affiliated. Although the results of this study may have been an artifact of the particular psychometric instruments used, no differences were found in psychological characteristics (labeled autism, denial, repression, withdrawal, and value orientation) between core, fringe, delinquent-nongang, and nondelinquent-nongang members. Among the social variables examined, alienation, manifest aggression, and social maladjustment significantly differentiated delinquent (core, fringe, and delinquent-nongang) from nondelinquent-nongang members, while the immaturity and social anxiety variables failed to differentiate. Seven of 14 behavioral scales significantly differentiated delinquent from nondelinquent-nongang members, including social control versus attention-seeking, unobtrusiveness versus obtrusiveness, rapport versus alienation, friendliness versus hostility, enthusiasm versus depression, conformity versus nonconformity, and anger control versus hypersensitivity.

A study (Rounds-Bryant et al., 1998) that made gender comparisons among a national sample of adolescent drug treatment clients found that males and females were similar in the proportion that reported feeling depressed in the year prior to treatment. However, females qualified for a formal diagnosis of clinical depression at nearly three times the rate of males (17% versus 6%), and females reported suicide attempts at four times the rate of males (28% versus 7%). In this sample, there were no gender differences in diagnosis of ADHD, conduct disorder, overanxious disorder, or panic disorder (using DSM-III-R diagnostic criteria).

Trauma/Abuse Individuals are reportedly five times more likely to be a substance abuser if they have been sexually assaulted, and three times more likely if physically assaulted (Berenson, San Miguel, & Wilkinson, 1992). Childhood victimization by physical or sexual abuse, or by neglect, is a significant predictor of adult arrests for alcohol and/or drug-related offenses (Travis, 1995). In the Travis study, the relationship between childhood victimization and juvenile arrests for these arrests was not significant, but childhood maltreatment was a significant predictor of other forms of delinquency. Travis found a difference by gender in these relationships: females victimized as children were significantly more likely to have alcohol or drug arrests in adulthood than control females, but no differences were found between male groups. There was also a difference by ethnicity: childhood victimization increased the probability of alcohol or drug-related arrest in adulthood for whites, but not for blacks. The Rounds-Bryant et al. (1998) study found that female respondents reported more past and current sexual abuse, while males respondents reported more past and current physical abuse. The combined rates of reported current physical and sexual abuse among girls (36%) was more than twice the rate reported by boys (16%).

Youth who were either abused or neglected before age 12 are more likely to report committing violent acts, compared with youth who were not abused or neglected (Snyder & Sickmund, 1995b). Evidence from self-reports as well as arrest records indicate violence increases with exposure to more types of violence, including spousal violence, child or sibling maltreatment, and a family climate of hostility (Thornberry, 1994). Of abused or neglected children, 26% eventually had a juvenile arrest record, compared with 17% of children who were not abused or neglected. Compared with a

control group, abused or neglected children had a first arrest at a younger age, committed more offenses, and were arrested more frequently. Research by Trottier (1991) found that juvenile sexual offenders reported more instability in their home life, and lack of positive emotional relationships with their caretakers, compared with juvenile nonoffenders.

### Current problem

This study describes and compares Latino (Mexican-American and Spanish-American) and WnH incarcerated adolescents, across gender and ethnicity, on selected psychosocial variables associated with serious delinquency. It examines some of the same data on incarcerated girls used in the Gingerich (1998) study, and asks some of the same or similar questions, allowing some comparisons to the Gingerich results. However, in contrast to the Gingerich study, the present study focuses solely on incarcerated youth, of both genders, and divides the Gingerich "Latino" category into two large subgroups (Mexican-American and Spanish-American). This study also tests some hypotheses that follow from the delayed-onset model (Silverthorn, 1998; Silverthorn, & Frick, 1999) of a developmental pathway toward antisocial behaviors in adolescent girls.

Variables The independent (categorical) variables used in this study are Gender and Ethnicity. Given the variables contained within the data set to be used, and the ways these variables have been formed into scales and clusters of scales in prior research (for example, Gingerich 1998), the dependent (continuous) variables used in this study have been classified as follows:

1. **Family background – including questionnaire items regarding family stability, parental school support, drug sanctions, caring/relationships/obedience, fighting with the family.**
2. **School variables - including items regarding school liking, school success, school deviance.**
3. **Social factors - including items regarding peer relations, religious identification, tolerance of deviance, and minor deviant behavior.**
4. **Psychological functioning - including items regarding blame, alienation, anger, anxiety, and depression.**
5. **Trauma/Abuse - including items regarding physical and sexual abuse history.**
6. **Drug Use – including items about use of alcohol and other drugs during the past month.**

**Expected differences** Based on prior research, some of the results we can expect to emerge from this study's comparisons can be stated as the following hypotheses:

**Hypothesis 1: There is a significant difference, by gender, in family background variables. Silverthorn (1998) stated the family backgrounds of female delinquents are much worse than the backgrounds of male delinquents. Silverthorn specifically included level of mother-child conflict/hostility, level of parental supervision, and level of sanctions against antisocial behavior.**

**Hypothesis 2: There is no significant difference, by ethnicity, in school variables. This expectation follows from the Gingerich (1998) study, which used a subset of the same data as will be used in the present study. Gingerich found no significance difference, by ethnicity, among incarcerated and in-school girls. The present study will**

only examine incarcerated adolescents, but will include both genders in the sample. Differences not seen in the Gingerich study may emerge, by ethnicity, when boys are included in the analysis.

Hypothesis 3: There is a significant difference, by ethnicity, in social variables. Gingerich (1998) found a small difference, among Latina and White girls, in religious identification. Differences may emerge, by ethnicity, when boys are included in the analysis.

Hypothesis 4: There is no significant difference, by ethnicity, in psychological variables. Gingerich (1998) found no difference, among Latina and White girls, although her cluster of psychological scales did not include ethnic identification.

Hypothesis 5: There is a significant difference, by gender, in physical and sexual abuse variables. Silverthorn (1998) states that rates of physical and sexual abuse among antisocial girls are higher than for adolescent male offenders.

Hypothesis 6: There is a significant difference, by ethnicity, in sexual abuse variables. Gingerich (1998) found a higher percentage of detained White non-Hispanic girls who had been sexually assaulted as compared to the incarcerated Latinas in her sample. It is unknown whether this effect will also be true in boys across ethnicity, or in interaction between gender and ethnicity.

Hypothesis 7: There is no significant difference, by ethnicity, in deviance variables. Gingerich (1998) found no difference in deviance variables, among Latina and White girls.

Hypothesis 8: Finally, these data allow comparisons, by gender and ethnic group, of the accuracy of reporting, by comparing self-reports about recent drug use with urine

analyses (UAs ). A literature search on accuracy of self-reporting revealed little or nothing on which to base a prediction, relevant to the present study, regarding possible differences between population subgroups in the accuracy of self-reported drug use. It appears this question has not been thoroughly examined, even though it might be useful to know whether identified subgroups vary significantly in the accuracy of their self-reports about drug use and possibly other delinquency or health-related issues. Therefore Hypothesis 8 is that there are no significant differences, by gender or ethnicity, in agreement between self-reports about recent drug use and UAs.

## CHAPTER 2

### Method

#### Subjects

The data used in this study are from the "Delinquency" dataset collected by the Tri-Ethnic Center for Prevention Research at Colorado State University. (For grant information, see footnote below.<sup>1</sup>). These data were primarily collected in 1990. All data were collected in a large city in the Southwestern United States, with a population of 400,000. Over half the population in this city is Latino, and this city's demographic characteristics are similar to those of many other southwestern cities with large Latino populations. Data from subjects who did not self-identify as either Latino/a or White non-Hispanic (WnH) were not used.

All respondents were incarcerated adolescents, and all were surveyed within a few days of being arrested and incarcerated. Though most subjects were 15-17 years old, ages of the female subjects ranged from 13 to 18 years, while ages of the males ranged from 12 to 19 years. The mean age for girls was 15.39 years ( $SD = 1.22$ ), while the mean age for boys was 15.68 years ( $SD = 1.25$ ). Thirty percent of respondents were female.

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Three ethnic groups were examined: White non-Hispanic (WnH), Mexican-American, and Spanish-American. Of the 515 subjects included in this study, 115 respondents (22%) identified themselves as WnH, 112 respondents (22%) self-identified as Mexican-American, and 288 (56%) identified themselves as Spanish-American (see Table 1). Subjects had been arrested on charges ranging from homicide to relatively minor offenses such as liquor law violations, running away from home, and refusal to obey. The most common offenses included probation/parole revocation, larceny shoplifting, burglary, battery, criminal trespass, and weapons violations. For both males and females, the majority of respondents were repeat offenders.

#### Survey Procedure

The Human Research Committee (the federally mandated Institutional Review Board) at Colorado State University approved the original data collection procedures used in generating this delinquency dataset. Adolescent respondents were randomly selected for invitation to participate from among detainees at a detention center. Both parental and juvenile consent was obtained for each participant under age 18, and those few participants over the age of 18 gave consent without additional parental consent. Participants were escorted by facility staff to a small counseling room at the detention center and given verbal instructions for filling out the surveys, including the instruction to not write their names on the surveys or otherwise compromise their anonymity. A facility staff member remained in the room during survey administration, but was instructed to face away from the participant or to read or do paperwork, so that the participant's responses could not be read. Upon completing the surveys, participants

placed them in stamped envelopes, and sealed the envelopes. Surveys were then mailed directly to the Tri-Ethnic Center for Prevention Research at Colorado State University for data entry and analysis.

### Instruments

Each respondent completed a large survey packet. Questions used in the current study came from several of the instruments included in this packet, including the American Drug and Alcohol Survey™ (the ADAS, including supplementary insert, form S89A) (Oetting, Beauvais, & Edwards, 1990), the CDAS, "Drugs Last Week", the "Dropout Survey", and the Symptom Checklist 90 (Revised) (SCL-90-R; Derogatis, 1975). Information was also used from the cover sheet (information about dates of arrest, survey response, and urine analysis, and offense histories), and the results of the urine analysis.

The ADAS, CDAS, "Drugs Last Week", and "Dropout Survey" were all developed by the Tri-Ethnic Center for Prevention Research at Colorado State University. Numerous scales have been developed and validated using items from these instruments, and in their use in multiple studies these items and scales have demonstrated good validity and reliability (Chavez, Oetting & Swaim, 1994; Oetting, Beauvais, Edwards & Waters, 1986). Most items on the ADAS (including the insert) and CDAS are in the form of Likert Scales. Items on the ADAS cover drug use in general, experiences and attitudes regarding drugs and alcohol, and the use of individual drugs. The ADAS insert (form S89A) covers a variety of social, attitudinal and delinquent behavior items. The CDAS asks about self-perceptions and emotions. The "Dropout Survey" asks about living

arrangements and conditions, delinquency in self and friends, experiences of trauma or abuse, descriptions of friends, and school experiences. The SCL-90-R is a well-known symptom checklist yielding scores on scales for individual areas of psychopathology and more global indicators of distress.

The following 6 scales were used: Family Background, School, Social, Psychological, Trauma/Abuse, and Drug use. These scales consisted of subscales and/or individual survey items. Family Background scales included Family Caring, Family Stability, Family Support for Education, and Family Drug Sanctions. School scales included School Success, School Deviance, and School Liking. Social scales included Peer Relations, Religious Identity, Tolerance of Deviance, and Minor Deviance. Psychological scales included Blame, Alienation, Anger, Anxiety, and Depression. Trauma/Abuse scales included Sexual and Physical abuse scales. Drug use was represented by six items, each dealing with use of a particular drug in the past month (alcohol; marijuana; anything "sniffed" or "huffed" besides cocaine; uppers; cocaine; and heroin).

## CHAPTER 3

### Results

Data were examined as follows: First, reliabilities for scales were examined, and in some cases minor changes were made to the item compositions of scales, relative to previous uses of these scales. Second, general descriptive statistics were examined for those survey items to be used in subsequent analyses. The examination included a comparison of item and scale means for participants who self-reported their ethnicity as either Mexican-American or Spanish-American, using independent samples T-tests. This comparison of means for Mexican-Americans and Spanish-Americans was warranted out of concern these ethnicity categories may not represent objective differences, given possible social pressure to claim particular ethnic identities. It was decided in advance of this comparison that if few differences were found between these two groups, they would be combined into the larger grouping "Latino".

Data were next analyzed, for each of the six clusters of variables (family, social, school, psychological, trauma/abuse, and drug use), in the following sequence. Multivariate analyses of variance (MANOVAs) were conducted (including power analyses and determination of effect sizes), to determine whether ethnicity, gender, or an interaction of ethnicity and gender accounted for variability in six sets of psychosocial variables. Significant multivariate effects were then examined further using univariate analyses. Where univariate analyses found significant effects for ethnicity, post-hoc

analyses were conducted in order to specify which pairs of means, among the three ethnicities examined, had significant differences. Multivariate effect sizes were assessed using Wilk's Lambda ( $\lambda$ ), and univariate effect sizes by eta squared ( $\text{Eta}^2$ ). Qualitative evaluation of effect size used Cohen's (1988) criteria:  $\text{Eta}^2$  of .01-.04 = small effect size, .05-.14 = moderate effect size, and  $> .14$  = large effect size.

In the final stage of data analysis, logistic regressions were run in order to examine level of agreement, across ethnicity and gender, between self-reported use of marijuana in the previous month and results of urine analysis (UA). Logistic regression was chosen in order to obtain probability estimates, indicating whether gender or ethnicity are useful predictors of the probabilities of agreement or disagreement between self-reports and UA results. Note that there are two kinds of possible agreement between self-report and UA results: either both self-report and UA are positive or both are negative. Similarly, there are two kinds of possible disagreement, since self-report and UA can each be either positive or negative. Therefore, four separate kinds of agreement can be assessed, and probability of belonging to particular agreement classifications can be calculated.

### Scale Reliabilities

The 15 alpha coefficients for scale reliabilities averaged .81, and ranged from .93 to .53. Reliability for School Deviance (.53) was the single alpha below .67, and in this context was considered acceptable. Scales and scale reliability coefficients appear in Table 2. Three concepts (Family Stability, Family Support for Education, and Drug Use)

were represented by individual survey items, and therefore no reliabilities are reported for these concepts.

### Comparing item means between Mexican-Americans and Spanish-Americans

The 94 dependent variables, to be used in subsequent analyses, were entered into independent samples T-tests, in order to compare item means between Mexican-Americans and Spanish-Americans. Of these 94 items, 11 showed a significant difference between means. Next, T-tests were run on all 24 variables to be entered into subsequent MANOVAs, in order to compare scale means between Mexican-Americans and Spanish-Americans. Of the 24 variables tested, 6 subscales showed a significant difference between means. Table 3 shows the relationships between scales and subscales, and indicates those subscales and items whose means were significantly different between Mexican-Americans and Spanish-Americans. The 6 significantly different subscales were as follows: School Deviance (Spanish-Americans reported higher school deviance), School Liking (Mexican-Americans reported more school liking), Minor Deviance (Spanish-Americans reported higher minor deviance), Alienation (Mexican-Americans reported higher levels of alienation), Physical Abuse (Mexican-Americans reported higher levels of physical abuse), and Heroin (Spanish-Americans reported higher levels of heroin use in the past month). Based on the results of these T-tests, a decision was made to analyze self-reported Mexican-Americans and Spanish-Americans as two separate ethnicities, rather than combining these subgroups into a single "Latino" ethnic grouping, in order to preserve information unique to each of these two groups.

### General Descriptive Statistics

For each of the six ethnicity by gender groups (WnH males, WnH females, Mexican-American males, Mexican-American females, Spanish-American males, and Spanish-American females), general descriptive statistics for the scales used in subsequent analyses are presented in Table 4.

### Responses to Selected Items

Responses to several representative survey items were examined in order to gain a preliminary understanding of the personal histories reported by the subjects in this study. For the Family Caring items, mean responses to questions such as "Does your family care about you?" and "Are you close to your family?" were between "a lot" and "some". Most subjects reported they lived with their parents, and nearly half reported their parents were divorced. Questions about the strength of family sanctions against drug use yielded average responses between "a lot" and "some". A majority of subjects reported having been suspended and kicked out of school, as well as having flunked a year of school. Mean responses to questions regarding how strongly subjects like school and feel their teachers like them were between "some" and "not much". A majority of respondents reported that their best friends had had the following experiences: gotten a traffic ticket, had their driver's license taken away, stolen a car, failed a grade, dropped out of and/or were kicked out of school, stolen "big stuff", gone to jail or a juvenile home, and been on probation for a crime. However, when asked whether "any of your close friends (those friends that you spend most of your time with)" had had any of the preceding experiences, modal responses to this category were "no" for all the above experiences

except "driver's license taken away" and "stolen a car". Since "best friend" would probably usually be included among the larger set of "close friends", it could be expected that "close friend" responses would be equal or higher than "best friend" responses, rather than lower. This unexpected but observed pattern of responses perhaps reflects some level of misinterpretation of survey instructions. The modal responses to "Do you take part in your religion?" and "Are you religious?" were "some", though the mean response value was nearly midway between "some" and "not much". Interestingly, mean response to "How important is religion in your life?" was also in this same range, but much closer to "some" than "not much". Tolerance of deviance questions, such as whether it is bad to cheat, lie, or steal, yielded mean responses consistently between "a lot" (suggesting low tolerance for deviance) and "some", though closer to "some". Average involvement in minor deviance, such as lying, cheating in school, and stealing, was reportedly "some" to "not much". The actual distribution of responses was more complex than average response values suggest, though, with modal responses varying from "some" (on "I do bad things") to "no" (on "I cheat in school" and "I steal"). Mean responses to items from Psychological subscales (Blame, Anger, Anxiety, and Depression) were nearly all in the range between "not much" and "some". Exceptions were a few items at or above the level of "some", including "I'm quick tempered", "I get mad", and "I worry about things". Modal responses to Psychological items suggested many subjects frequently feel anger and anxiety. Average responses to items from the Psychological subscale "Alienation", such as "Other people my age make fun of me" and "I am left out of things", were lower, generally falling between "no" and "not much". When asked how many times they had ever been raped or sexually assaulted, the modal response was "none" for males and

females alike. However, response distributions for this item appeared to differ by gender, with 92% of males responding "none", and 66% of females responding "none". Seven percent of males reported having been victimized in this way 1-2 times, in contrast to 24% of females. Though less than 1% of males endorsed higher rates of sexual victimization, 6% of females reported having been victimized 3-9 times, and 4% of females reported having been sexually assaulted 10 or more times. Twenty-eight percent of males and 44% of females reported having been beaten by parents at least once. As for having been beaten up and hurt badly by an older kid, 55% of males and 31% of females reported this experience, while having been beaten up and hurt badly by an (unspecified) adult was reported by 43% of males and 41% of females. For the items asking about drug use in the past month, mean responses indicated most subjects denied using anything "sniffed", uppers $\beta$  cocaine, or heroin. However, a majority of subjects reported using alcohol and marijuana between 1-2 times and 3-9 times a month. The modal response was 3-9 times a month for both alcohol and marijuana.

### Examination of Psychosocial Variables

Family Background Variables. A 2 X 3 (gender by ethnicity) MANOVA examined family background variables. Dependent variables used in the analysis included Family Caring, Family Stability, Family Support for Education, and Family Drug Sanctions. Means for gender and ethnicity (WnH, Mexican-American and Spanish-American) are displayed in Tables 5 and 6, respectively. Results included a significant multivariate main effect for gender (Wilk's  $\lambda = .961$ ,  $F(4, 427) = 4.283$ ,  $p < .002$ ,  $\underline{Eta}^2 = .039$ ), and for ethnicity (Wilk's  $\lambda = .940$ ,  $F(8, 854) = 3.340$ ,  $p < .001$ ,  $\underline{Eta}^2 = .030$ ). There

was not a significant multivariate effect for the interaction (gender by ethnicity). The significant multivariate main effects for gender and ethnicity were further examined. For gender, significant univariate tests were demonstrated for the Family Caring and Family Stability scales. For the Family Caring scale, males scored lower than females ( $F(1,430) = 11.62, p < .001, \underline{Eta}^2 = .03$ ). Males also scored lower on the Family Stability scale ( $F(1,430) = 12.13, p < .001, \underline{Eta}^2 = .03$ ). For ethnicity as well, significant univariate tests were demonstrated for the Family Caring ( $F(2,430) = 8.50, p < .000, \underline{Eta}^2 = .04$ ) and Family Stability ( $F(2,430) = 7.79, p < .000, \underline{Eta}^2 = .04$ ) scales. Subsequent post-hoc analysis, using the Tukey HSD test, showed WnHs scoring higher than either Mexican-Americans or Spanish-Americans on both the Family Caring and Family Stability scales.

Silverthorn's Family Background Variables, by Gender. A 2 X 3 (gender by ethnicity) MANOVA was used in order to retest the first hypothesis of the present study, this time using ten family background variables of delinquents as specified in the works by Silverthorn (1996/1997) and Silverthorn and Frick (1999). The first hypothesis stated that a difference, by gender, would be observed in these specific background variables. A set of ten items was analyzed, and means for gender are displayed in Table 7. The multivariate main effect for gender was significant ( $Wilk's \lambda = .939, F(10, 429) = 2.79, p = .002, \underline{Eta}^2 = .06$ ). The significant multivariate main effect for gender was further examined, and significant univariate tests were demonstrated for the following items. For the item "would your family try to help you stay in school", males scored lower than females ( $F(1,438) = 5.11, p < .024, \underline{Eta}^2 = .01$ ). Males also scored lower than females on the item "how well do you get along with your mother" ( $F(1,438) = 20.64, p < .000, \underline{Eta}^2 = .045$ ).

**School Variables.** A 2 X 3 (gender by ethnicity) MANOVA examined school variables. Dependent variables used in the analysis included School Success, School Deviance, and School Liking. Means for gender and ethnicity (WnH, Mexican-American and Spanish-American) are displayed in Tables 8 and 9, respectively. Results included a significant multivariate main effect for ethnicity (Wilk's  $\lambda = .963$ ,  $F(6, 948) = 3.02$ ,  $p < .05$ ,  $\text{Eta}^2 = .02$ ). There was not a significant multivariate effect for gender or the interaction (gender by ethnicity). The significant multivariate main effect for ethnicity was further examined. For ethnicity, a significant univariate test was demonstrated for the School Deviance scale ( $F(2, 476) = 6.70$ ,  $p < .001$ ,  $\text{Eta}^2 = .03$ ). Subsequent post-hoc analysis, using the Tukey HSD test, showed Spanish-Americans scoring significantly higher on the School Deviance scale than either Mexican-Americans or WnHs.

**Social Variables.** A 2 X 3 (gender by ethnicity) MANOVA examined social variables. Dependent variables used in the analysis included Peer Relations, Religious Identity, Tolerance of Deviance, and Minor Deviance. Means for gender and ethnicity are displayed in Tables 10 and 11, respectively. Results included a significant multivariate main effect for ethnicity (Wilk's  $\lambda = .933$ ,  $F(8, 856) = 3.75$ ,  $p < .000$ ,  $\text{Eta}^2 = .03$ ). There was not a significant multivariate effect for gender or the interaction (gender by ethnicity). The significant multivariate main effect for ethnicity was further examined. A significant univariate test was demonstrated, for ethnicity, for the Religious Identity scale ( $F(2, 431) = 5.95$ ,  $p < .003$ ,  $\text{Eta}^2 = .027$ ). Subsequent post-hoc analysis, using the Tukey HSD test, showed that both the Mexican-American and the Spanish-American groups scored lower than WnHs on Religious Identity.

**Psychological Variables.** A 2 X 3 (gender by ethnicity) MANOVA examined psychological variables. Dependent variables used in the analysis included Blame, Alienation, Anger, Anxiety and Depression. Means for gender and ethnicity are displayed in Tables 12 and 13, respectively. Results included a significant multivariate main effect for gender (Wilk's  $\lambda = .965$ ,  $F(5, 466) = 3.34$ ,  $p < .01$ ,  $\underline{Eta}^2 = .035$ ). There was not a significant multivariate effect for ethnicity or the interaction (gender by ethnicity). The significant multivariate main effect for gender was further examined. Subsequent univariate tests indicated small but significant gender effects for Anxiety ( $F(1,470) = 4.34$ ,  $p < .05$ ,  $\underline{Eta}^2 = .009$ ) and Depression ( $F(1,470) = 8.75$ ,  $p < .01$ ,  $\underline{Eta}^2 = .02$ ). Males scored lower than females on both the Anxiety and Depression scales.

**Trauma/Abuse Variables.** A 2 X 3 (gender by ethnicity) MANOVA examined abuse variables. Dependent variables used in the analysis included Sexual Trauma/Abuse and Physical Trauma/Abuse. Means for gender and ethnicity are displayed in Tables 14 and 15, respectively. Results included a significant multivariate main effect for gender (Wilk's  $\lambda = .883$ ,  $F(2, 467) = 30.98$ ,  $p < .001$ ,  $\underline{Eta}^2 = .117$ ) and for ethnicity (Wilk's  $\lambda = .966$ ,  $F(4, 934) = 4.09$ ,  $p < .003$ ,  $\underline{Eta}^2 = .017$ ). The significant multivariate main effects for gender and ethnicity were further examined. For gender, a significant univariate test was demonstrated for the Sexual Trauma/Abuse scale ( $F(1, 468) = 57.72$ ,  $p < .001$ ,  $\underline{Eta}^2 = .110$ ), with males scoring lower than females. For ethnicity, a significant univariate test was also demonstrated for the Sexual Trauma/Abuse scale ( $F(2, 468) = 4.97$ ,  $p < .01$ ,  $\underline{Eta}^2 = .021$ ), as well as the Physical Trauma/Abuse scale ( $F(2, 468) = 4.24$ ,  $p < .001$ ,  $\underline{Eta}^2 = .018$ ). Subsequent post-hoc analysis, using the Tukey HSD test, showed that on the Sexual Trauma/Abuse scale, Spanish-Americans scored lower than WnHs, while on the

Physical Trauma/Abuse scale Spanish-Americans scored lower than both WnHs and Mexican-Americans.

Drug Use Variables. A 2 X 3 (gender by ethnicity) MANOVA examined drug use variables. Dependent variables used in the analysis included six individual survey questions, each one of which asked how often the respondent had used a particular drug during the past month. These items asked about the following drugs: alcohol, marijuana, anything "sniffed" (glue, gas, sprays, etc., but excluding cocaine), uppers, cocaine, heroin. Means for ethnicity are displayed in Table 16. Results included a significant multivariate main effect for ethnicity (Wilk's  $\lambda = .928$ ,  $F(12, 954) = 3.01$ ,  $p < .001$ ,  $\underline{\text{Eta}}^2 = .036$ ). There was not a significant main effect for either gender or the interaction (gender by ethnicity). The significant multivariate main effect for ethnicity was further examined. A significant univariate test for ethnicity was demonstrated for the uppers ( $F(2, 482) = 5.49$ ,  $p < .01$ ,  $\underline{\text{Eta}}^2 = .022$ ) and cocaine ( $F(2, 482) = 4.02$ ,  $p < .05$ ,  $\underline{\text{Eta}}^2 = .016$ ) scales. Subsequent post-hoc analysis, using the Tukey HSD test, showed that on the cocaine scale, Spanish-Americans scored higher than WnHs. For the uppers scale none of the pairs of means (by ethnicity) were significantly different.

Additional analysis of self-reported levels of marijuana use in the previous month revealed the following statistics. Fifty-three percent of males reported some level of marijuana use in the previous month, while 61% of females reported some use. A t-test found the difference, across genders, in mean self-reported marijuana use scores to be insignificant ( $t(455) = -1.36$ ,  $p = .18$ ). The modal level of self-reported marijuana use, for both genders, was in the category of 1-2 times in the past month. Some level of marijuana use was reported by 41% of WnHs, 57% of Mexican-Americans, and 60% of

Spanish-Americans. Mean levels of use varied from WnH (1.72) to Mexican-American (2.22) to Spanish-American (2.33). T-tests found significant differences in mean levels of self-reported use between WnHs and Mexican-Americans ( $t(186) = -2.98, p = .003$ ), and between WnHs and Spanish-Americans ( $t(245) = -4.63, p = .000$ ), but not between Mexican-Americans and Spanish-Americans ( $t(358) = -.70, p = .487$ ).

Deviance Variables. A 2 X 3 (gender by ethnicity) MANOVA examined deviance variables, as operationalized in the Gingerich (1998) study, in order to test the third hypothesis in the present study. This hypothesis stated that no difference, by ethnicity, would be observed in these deviance scales. Scales for Deviant Behavior, School Deviance, and Tolerance of Deviance were analyzed. Means for ethnicity are displayed in Table 17. The multivariate main effect for ethnicity was not significant (Wilk's  $\lambda = .982, F(6, 1006) = 1.54, p = .162, \underline{Eta}^2 = .009$ ). When this analysis was rerun, with females excluded, ethnicity was again non-significant (Wilk's  $\lambda = .978, F(6, 704) = 1.31, p = .25, \underline{Eta}^2 = .011$ ). The multivariate main effect for gender, though close to significance, was also not significant (Wilk's  $\lambda = .985, F(3,503) = 2.57, p = .054, \underline{Eta}^2 = .005$ ).

#### Level of Agreement Between Self Report and UA.

As reported in the previous Drug Use Variables section, 53% of males and 61% of females reported some marijuana use. Twenty-three percent of males had positive UAs for marijuana, while 18% of females had positive marijuana UAs. The t statistic for the comparison of mean UA scores, across genders, was not significant ( $t(455) = -1.23, p = .22$ ). In terms of ethnicity, 41% of WnHs, 57% of Mexican-Americans, and 60% of

Spanish-Americans reported some marijuana use. The t statistic for the comparison of mean self-reported marijuana use scores between WnHs and Mexican-Americans was significant ( $t(186) = -2.98, p = .003$ ). Percentages of positive UAs, by ethnicity, was as follows: WnH (8%), Mexican-American (25%), and Spanish-American (26%). The t statistic for the comparison of mean UA scores between WnHs and Mexican-Americans was significant ( $t(164) = 3.38, p = .001$ ). Odds ratios were estimated for gender and ethnicity, with Male and WnH being the referent groups in these analyses. Gender had borderline statistical significance as a predictor of agreement classification, though it was only significant when entered alone (i.e., without ethnicity) into the logistic regression. The odds ratios and alpha coefficients for gender were very similar whether gender was run with ethnicity (alpha = .051, odds ratio = .665) or alone (alpha = .049, odds ratio = .662). Ethnicity was not a significant variable in these analyses. The Mexican-American/WnH and Spanish-American/WnH analyses resulted in the following respective statistics: (alpha = .65, odds ratio = .873) and (alpha = .43, odds ratio = .825). Mean values for gender and ethnicity by agreement classification appear in Table 18, along with associated t statistics. Table 19 shows the logistic regression summary table.

## CHAPTER 4

### Discussion

This study used information from a large data set to examine relationships between psychosocial variables, gender and ethnicity among incarcerated adolescents. An unusual and valuable aspect of this data set was that it allowed description of a seldom studied and therefore not well understood subpopulation: incarcerated youth. Their state of incarceration suggests that overall these are unambiguously delinquent adolescents, and as such may provide insight into a larger set of delinquent youth in the United States. This data set has another unusual asset: it represents a sufficient number of young women to allow gender-based comparisons. In addition, the data included strong representations of Mexican-American, Spanish-American, and WnH youth, providing the statistical power to compare groups defined by gender, by ethnicity, and by gender and ethnicity combinations. Finally, each subject responded to a large number of survey items, and underwent urine analysis, allowing many and diverse hypotheses to be tested. For example, some aspects of the Silverthorn and Frick (1999) proposed model of delinquency development in girls could be translated into predictive hypotheses that could be tested within this data set.

### Limitations of the study

The data used in this study come from a single location: one city in the southwestern United States. As such, it may not reasonably represent delinquent youth from other locations and levels of urbanization. Another limitation is that these data were collected about ten years ago, and some characteristics of the current generation of teenagers are known to be different from those of the previous decade. For example, methamphetamine use by adolescents has greatly expanded in the past ten years. The fact that this dataset was cross-sectional, rather than longitudinal, imposed major limitations on the ability to make developmental and causal inferences. Longitudinal research designs are the only suitable designs for accurately assessing individual differences in behavioral development over time, relative to psychosocial risk and protective factors (Cairns & Cairns, 1994; CCHD, 1996, Farrington, 1988). In addition, individuals from only three specific ethnicities were examined. It is difficult to know how well these data represent delinquent youth from other times, places, and ethnic identities. Finally, there is some question as to the meaningfulness of self-reported ethnicity in the Mexican-American and Spanish-American adolescents in this study, as there may be social pressure to publicly claim or not claim particular ethnic identities. However, as reported in the previous chapter, significant differences in the dependent variables were observed between Mexican-American and Spanish-American adolescents, and therefore these two groups were examined separately.

## Relationships Between Psychosocial Variables, Gender and Ethnicity

Family Background Variables. Silverthorn (1996/1997) and Silverthorn and Frick (1999) asserted that the family backgrounds of female delinquents tend to be worse than those of male delinquents. Their assertion formed the basis for the first hypothesis of this study, which stated that there is a significant difference, by gender, in family background variables. This hypothesis was tested in two ways: by comparing a broad set of background variables (as discussed in the present section), and by comparing a more limited set of background variables that were specifically mentioned by Silverthorn and Frick in making their assertion. This second analysis is discussed in the following section, "Silverthorn's Family Background Variables". In the present analysis of a broad range of family variables, gender accounted for a relatively modest (though statistically significant) portion of the variance (4%) in Family Background variables. Differences by gender were found in the Family Caring and Family Stability scales, and using Cohen's (1988) criteria there were small gender effect sizes (3% and 3%, respectively) for these two scales. For both scales, males reported higher levels of family caring and family stability than females reported. This finding supported the present study's first hypothesis. Ethnicity also had a small (3%) effect size on Family Background variables, due to small effects involving the Family Caring (4%), and Family Stability (4%) scales. WnHs reported less family caring and less family stability than did Mexican-Americans or Spanish-Americans.

Silverthorn's Family Background Variables. Some specific aspects of the family backgrounds of the adolescents in the present study were compared, by gender, in a separate analysis in order to retest the first hypothesis. This second analysis of family

background variables specifically named by Silverthorn and Frick (1999) included mother-child relations, level of parental supervision, and sanctions against antisocial behavior. The postulated difference in family background, by gender, was found in the present analysis. The overall difference was due to significant differences in the means of just two of the full set of ten items. These two significant items addressed level of parental supervision of school attendance, and mother-child relations. For both items, females reported worse conditions. Females reported less support from their families for school attendance, and poorer relationships with their mothers.

School Variables. Gender did not account for a significant portion of the variance in School variables. There was a small effect size (2%) for ethnicity, due to a small amount of variance (3%) accounted for by the ethnicity difference on the School Deviance scale. Spanish-Americans reported significantly higher levels of school deviance than did either Mexican-Americans or WnHs. In other words, Spanish-Americans reported higher frequencies of having ever flunked or been kicked out or suspended from school. This study's second hypothesis, based on the prior work by Gingerich (1998), was that there would be no differences, by ethnicity, in School variables. This hypothesis was not confirmed, due to the ethnic difference observed in School Deviance.

Social Variables. Among the Social variables, gender did not account for a significant portion of the variance. Ethnicity accounted for a small (3%) portion of the variance in the Social Variables, due to a small effect (3%) on the Religious Identity scale. Both Mexican-Americans and Spanish-Americans reported having stronger religious identities than did WnHs. The third hypothesis of the present study, based on

Gingerich's (1998) work, was that there would be a difference, by ethnicity, in Social variables, and this hypothesis was confirmed. This hypothesis was based on the expectation that the Mexican-Americans and Spanish-Americans in the present study would tend to have stronger religious affiliations than the WnHs, since Gingerich found that the Latina group she examined (consisting primarily of Mexican-Americans and Spanish-Americans) reported higher religious affiliation than did female WnHs. In the present study, it appeared that the strength of religious identity decreased among females from Mexican-American, to Spanish-American, to WnH, yet was more uniform among males. The observation that religious values vary by ethnicity among these delinquents contributes to a more complex understanding of the overall Mitchell, Dodder and Norris (1990) conclusion that church attendance predicts lower levels of delinquency.

Psychological Variables. There was a small effect for gender on the Psychological variables, accounting for 4% of the variance. This effect arose from a significant gender effect on the Depression (2%) and Anxiety (1%) scales. On the Depression scale, males agreed, at a lower average level, with a set of self-statements such as "I feel low" and "I am depressed". On the Anxiety scale, males were less likely to endorse self-descriptions such as "I worry about things" and "I am anxious". There was not a significant effect for ethnicity on this set of psychological variables. This last finding supports the fourth hypothesis of the present study, which was predicated on similar findings in the Gingerich (1998) study.

Trauma/Abuse Variables. Gender accounted for a moderate proportion (12%) of the variance in the overall Abuse variable. This was due to males having lower scores on the Sexual Abuse scale. In other words, males tended to report lower rates of having ever

been raped or sexually assaulted. Gender accounted for 11% of the variance on the Sexual Abuse scale. This finding of a difference in abuse histories, by gender, supports the fifth hypothesis of the present study. This hypothesis was based on the Silverthorn and Frick (1999) model of delinquency development, which states that delinquent females tend to have experienced more abuse (both physical and sexual) than delinquent males. Therefore the present observation lends some support to that model. Note that the percentage of males reporting any history of sexual abuse (8%) was higher than the rate (2%) reported in the Viale-Val and Sylvester (1993) study of delinquents, while the percentage of females reporting sexual abuse histories (34%) was lower than the 43-75% range reported across several other studies of antisocial girls (Bureau of Justice Statistics, 1997; Calhoun, Jurgens & Chen, 1993; Lewis et al., 1991; Snell, 1994; Viale-Val & Sylvester, 1993). These same sources reported that 42-62% of delinquent girls had been physically abused, while the present study found that 44% reported having been beaten by a parent, and 41% reported having been beaten by an unspecified adult. The Viale-Val and Sylvester (1993) study reported that 23% of delinquent boys had physical abuse histories, while the present study found that 28% reported having been beaten by a parent, and 43% reported having been beaten by an unspecified adult. Overall, the delinquent sample in the present study appears to report higher levels of sexual and physical abuse among males, compared to rates reported in the cited works, while rates of either kind of abuse among females were at the low end or lower than previously reported rates.

Ethnicity also accounted for a small portion of the variance (2%) in the Abuse variables, due to differences in the Sexual Abuse scale (accounting for 2% of the

variance) as well as the Physical Abuse scale (which also accounted for 2% of the variance). Spanish-Americans scored lower than WnHs on the Sexual Abuse scale. Spanish-Americans scored lower than WnHs or Mexican-Americans on the Physical Abuse scale. The sixth hypothesis of the present study, predicated on the Gingerich (1998) findings, was that there would be differences by ethnicity in sexual abuse histories of these adolescents. Gingerich found more reports of sexual abuse among her WnH (female) subjects than among Latinas. The present study provided a more complex ethnic categorization, and found WnH subjects reporting more sexual abuse histories than one of the Latino subgroups (Spanish-Americans), but not the other (Mexican-Americans).

Drug Use Variables. This study made no predictive hypotheses regarding drug use variables. Gender did not play a role in accounting for variance in the Drug Use variables. However, ethnicity was responsible for a moderate (4%) portion of this variance. On the cocaine use scale, WnHs reported less use than Spanish-Americans.

Gingerich's Deviance Variables. As hypothesized (Hypothesis 7), ethnicity did not play a significant role in accounting for variance in the deviance scale [i.e., the deviance scale as implemented by the Gingerich (1998) study]. Note that this deviance scale was constituted somewhat differently from the previously discussed Tolerance of Deviance and Minor Deviance scales, among the Social variables. The finding of an insignificant ethnicity difference resembled the Gingerich result among adolescent females (in WnH and Latino, incarcerated and in school subgroups), but again the present study used a more nuanced approach to ethnic categorization since it examined differences between WnH, Spanish-American or Mexican-American ethnic subgroups.

### Accuracy of Self-Reported Drug Use.

The data set used in the present study allowed examination of level of agreement between self-reported drug use and the objective criterion of UA (urine analysis) results. Self-reported marijuana use in the previous month was chosen for this comparison, in part due to the reliability with which cannabinoids and associated metabolites are detected in UA's over this time span (Horrigan, Piazza, & Weinstein, 1996), and in part due to the relatively high frequency of reported use. Overall, a majority of subjects (55%) reported using marijuana during the previous month, and a minority of subjects (22%) had positive marijuana UAs. Interestingly, this result is similar to that found in the Horrigan, Piazza, and Weinstein study (1996), which also compared self-reports to toxicology screens, and found that UAs identified only 42% of admitted users of alcohol or other drugs. However, in the present study the self-report and UA percentages varied by gender and ethnicity. A series of logistic regressions were run in order to assess agreement between self-reported marijuana use in the prior month and the objective criterion of urine analysis for cannabinoids. Levels of agreement were assessed by comparing the odds ratios for groups defined by either gender or ethnicity. As reported earlier, ethnicity was not a significant variable in this analysis. Gender had borderline statistical significance as a predictor of agreement classification. Results for gender, when considered in isolation from ethnicity, suggest that females are more likely than males to be in the disagreement group (wherein positive self-report was in disagreement with negative UA results) than to be in the agreement group (wherein self report and UA results were either both positive or both negative). One possible explanation for these

results is that females are more likely to overstate their actual marijuana use. To do so may be perceived by many females as conferring social benefits, such as enhancing attractiveness or "belongingness" with peers. Another possible explanation is that the females in this study may have simply been more accurate in their self-report. Alternatively, females may have different experiences than males with the police and judicial systems, which could result in longer delays between last use of marijuana and undergoing urine analysis. Finally, although a literature review found no mention of explicitly gender-based differences in marijuana detection times, there may be significant physiological differences that contribute to differences by gender in agreement between self-reports and UA results.

As noted by Snyder and Sickmund (1999), self-report studies can capture information on behavior that is otherwise missed by official records. For example, self-report studies find a much higher proportion of juveniles involved in delinquent behavior than is documented in official record research, which merely describe the cases handled by the justice system. These authors state (p. 52) that "to the extent there is bias in the types of crimes or offenders that enter the justice system, official records distort the attributes of juvenile crime". However, the preceding results appear to provide a counterexample, in which the self-reports of some adolescent delinquents, and perhaps especially females, may exaggerate actual levels of marijuana use.

### Gender

Significant differences were found in four out of eight analyses that examined possible differences by gender. Gender accounted for a moderate proportion of variance

in the analyses of "Silverthorn's Family Background Variables" and "Trauma/Abuse Variables". Gender accounted for a small proportion of variance in the analyses of "Family Background Variables" and "Psychological Variables". In each of these four analyses with significant gender differences, females reported more problematic experiences and conditions in their lives than males did:

- females reported less support from their families for school attendance
- females reported poorer relationships with their mothers
- females tended to report higher rates of having ever been raped or sexually assaulted
- females reported lower levels of family caring and family stability
- females agreed, at a higher average level, with a set of self-descriptions on the Depression and Anxiety scales such as "I feel low", "I am depressed", "I worry about things", and "I am anxious".

An example of the practical significance of these observations of differences by gender is that the females in this study appeared to react to situational and relationship stressors such as abuse victimization more strongly and negatively than the males did. This finding suggests these females may especially benefit from mental health services, in settings such as school and juvenile detention facilities, in order to help them respond to stressors in relatively healthy ways. In addition, the data revealed that among the WnH females, a drop in GPA provided a unique warning of dropout risk. This finding implies that extra benefits for WnH females would come from close monitoring of their academic GPAs, and that if grades drop appropriate interventions are made to help them stay in school and deal with stressors at home. A final example of the practical

significance of these observations of differences by gender appears in the later section, "Silverthorn and Frick Models of Delinquency Development: Applications from the current study".

### Ethnicity

Significant differences were found in five out of eight multivariate analyses that examined possible differences by ethnicity. Ethnicity accounted for a small proportion of variance (2-4% of variance) in the analyses of "Family Background Variables", "School Variables", "Social Variables", "Trauma/Abuse Variables", and "Drug Use Variables". The pattern of results created by these five analyses with significant ethnic differences was complex. Within seven univariate analyses of significant multivariate effects for ethnicity, five analyses revealed WnHs reporting more problematic experiences and conditions in their lives than at least one other ethnic group. Compared to the Mexican-American and Spanish-American subgroups, WnHs reported less family caring, less family stability, and less religious affiliations or identities. WnHs also reported more sexual trauma/abuse than did Spanish-Americans, and WnHs together with Mexican-Americans reported more physical trauma/abuse than did Spanish-Americans. The two exceptions to this generalization (of WnHs reporting more problematic experiences and conditions) were that Spanish-Americans reported engaging in more school deviance than did WnHs or Mexican-Americans, and Spanish-Americans reported using more cocaine in the prior month than did WnHs. The deviance scale as implemented by Gingerich and duplicated for the present study, as well as the Tolerance of Deviance and Minor Deviance scales, did not show significant differences by ethnicity. The frequent finding

of statistical significance for ethnicity in this study contrasted with the scarcity of ethnic differences seen in the Gingerich (1998) study, and this difference may be due to the present study's replacement of Gingerich's "Latino" category with "Mexican-American" and "Spanish-American" categories. Note, however, that in the current study ethnicity never accounted for more than a small proportion of variance in any of the variables examined, and therefore does not appear to be a particularly useful variable in understanding or intervening in these variables. For example, given the small proportion of total variance accounted for by ethnicity, differential prevention or intervention programs may not be justified on the basis of the ethnic differences observed. It is unclear whether there were any systematic motivations for participants to claim particular ethnic identifications, such as "Mexican-American" versus "Spanish-American".

#### Silverthorn and Frick Models of Delinquency Development: Applications From the Current Study

Publications by Silverthorn (1998) and Silverthorn and Frick (1999) propose a gender-based model of delinquency development. Their model contains many testable assertions, and some of these assertions have been translated into hypotheses tested in the present study. This study's first and fifth hypotheses were based on the Silverthorn and Frick model, and they predicted differences by gender in family background and trauma/abuse variables. The first hypothesis was tested in two different ways (as described in the previous "Family Background Variables" and "Silverthorn's Family Background Variables" sections). Silverthorn and Frick specifically predicted that

female delinquents would tend to come from more problematic, more pathogenic backgrounds and personal histories. In the two ways the first hypothesis was tested, and in the test of the fifth hypothesis, the predicted differences were in fact observed. However, in each case, the observed differences by gender were based on small subsets of all items entered into the analysis. For example, rather than finding a higher incidence of both physical and sexual abuse in girls, this difference was only found for sexual abuse. Similarly, in the analysis of ten items representing Silverthorn's family background variables (mother-child relations, parental supervision and sanctions against antisocial behavior), the overall significant difference between genders was driven by merely two of the ten items. This observation justifies some support for the Silverthorn and Frick model, though certainly not conclusive evidence. Again, the present study examines the self-reports of youths at one moment in their developmental histories, and therefore inferences about causation and developmental sequences are risky. Another limitation of this study for the assessment of their model is that it only examines delinquent youth, without consideration of non-delinquent peers. The differences between male and female delinquents asserted in the Silverthorn and Frick model, and those observed in the present study, may reflect differences by gender that are similarly observed among non-delinquent youth as well. After all, typical adolescent boys and girls engage in some minor rebellious or mildly antisocial activities, at different rates, that would not be classified as significantly deviant or delinquent (Krueger et al., 1994; McDermott, 1996). More powerful tests of the Silverthorn and Frick model would require descriptive information taken from delinquent and non-delinquent individuals, over portions of the lifespan that included earlier childhood stages (to learn more about

onset of delinquent behavior) as well as far enough into adulthood to know more about adult outcomes. Descriptive data would ideally include assessments of cognitive and neuropsychological deficits, impulse control, and interpersonal style. Such a database would allow testing of not only Silverthorn and Frick's proposed "delayed-onset" pathway to female delinquency, but also their assertion that "much clearer support of the (current two-trajectory) model would be obtained in samples limited to boys" (p. 123, Silverthorn and Frick, 1999).

### Future Directions

The current study raises several questions that justify future consideration. An important question is how the responses of these delinquents would compare with those of their non-delinquent peers. Such a comparison is needed in order to test more fully the relationships between delinquency and associated psychosocial variables. One of the questions such a comparison might answer is whether the relationships between these variables are different for delinquents, or whether delinquents merely grow up with higher levels of predisposing factors. For example, there remains an unclear relationship between sexual and physical trauma and delinquency.

Another question is how generalizable the present results are. Would there be similar findings in other regions of country, at different levels of urbanization, and among different ethnic groups? How different is the current generation of delinquent adolescents from these youth? Have the relationships between the variables examined changed during the past decade?

If the difference by gender in agreement between reported marijuana use and UA results is observed with more certainty in future studies, what accounts for this difference? Can support be found for the suggestion that the two genders may have different motivations to appeal to peers by exaggerating their levels of marijuana use? Would similar differences be found in self-reports regarding use of other drugs and for other delinquent behaviors? Are there any analogous differences in self-reporting about non-delinquent behaviors, such as prosocial behaviors or values in agreement with mainstream values?

There remain questions about the importance of motivation to self-report particular ethnic affiliations, and how such motivations might vary across groups. Related to these issues are questions about the effects of acculturation on psychosocial variables (such as religious identity) that appear to have relationships with delinquency.

Future research is likely to pursue clearer elucidation of developmental pathways, and will ideally use longitudinal data and path models to support more inferences about causal relationships. Such research may yield results with the potential for practical application. Continued discovery and understanding of unique developmental pathways can lead to more effective prevention and intervention programs. Similarly, pursuit of knowledge about differences between subgroups, based on age, gender, etc., may allow the tailoring of prevention and intervention programs to match characteristics of each relevant group.

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**Table 1. Sample sizes, with Mean Ages, by Gender and Ethnicity**

Gender	<u>Ethnicity</u>									
	<u>WnH</u>			<u>Mexican-American</u>			<u>Spanish-American</u>			<u>Total n</u>
	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	
Male	77	15.71	(1.30)	86	15.64	(1.29)	195	15.68	(1.21)	358
Female	38	15.45	(1.11)	26	15.54	(1.30)	93	15.32	(1.24)	157
Total	115			112			288			515

**Table 2. Scale Reliabilities**

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<b>Scale</b>	<b>Reliability coefficient</b>
Family Caring	.86
Family Drug Sanctions	.90
School Success	.83
School Deviance	.53
School Liking	.88
Peer Relations	.91
Religious Identity	.87
Tolerance of Deviance	.77
Minor Deviance	.75
Blame	.86
Alienation	.73
Anger	.84
Anxiety	.76
Depression	.93
Physical Trauma/Abuse	.67

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**Table 3. Relationships between scales and subscales, indicating significantly different scales and items**

<b><u>Scale</u></b>	<b><u>Subscale</u></b>	<b><u>Significant Items</u></b>
Family Background:	Family Caring	
	Family Stability	
	Family Support for Education	
	Family Drug Sanctions	
School:	School Success	
	<u>School Deviance</u>	"Ever been kicked out of school?"
	<u>School Liking</u>	"I like school" "School is fun"
Social:	Peer Relations	
	Religious Identity	
	Tolerance of Deviance	"Is it bad to do things that parents don't want you to do?"
	<u>Minor Deviance</u>	"I lie" "I cheat in school"
Psychological:	Blame	"when things go wrong at school I get blamed"
	<u>Alienation</u>	"peers make fun of me"
	Anger	
	Anxiety	
	Depression	
Trauma/Abuse:	Sexual Trauma/Abuse	
	<u>Physical Trauma/Abuse</u>	"ever been beaten up and hurt badly by a kid your own age?" "ever been beaten up and hurt badly by an older kid?"
Drug Use:	Alcohol (last month)	
	Marijuana (last month)	
	Sniffed (last month)	
	Uppers (last month)	
	Cocaine (last month)	
	<u>Heroin (last month)</u>	"used heroin in last month?"

Notes: Underlining indicates those subscales whose means were significantly different between Mexican-Americans and Spanish-Americans. The 11 items whose means were significantly different are inserted adjacent to and immediately below the subscales to which they contributed.

**Table 4. Means and Standard Deviations for Scales, for Each Ethnicity by Gender Group**

Variable	WM		WF		MM		MF		SM		SF	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Family Caring	0.29	3.48	2.58	4.72	-0.62	2.77	-0.05	2.98	-0.62	2.86	0.39	3.19
Family Stability	0.22	1.79	1.20	1.59	-0.29	1.58	0.35	2.28	-0.32	1.44	0.09	1.80
Family Support Education	0.03	0.99	0.32	1.08	-0.04	0.95	0.02	0.84	-0.17	0.73	0.02	1.19
Family Drug Sanctions	-0.36	5.11	1.93	6.97	-0.17	5.28	-1.81	3.22	-0.64	4.80	-0.36	4.66
Family School Support	-0.04	0.95	0.32	1.08	-0.06	0.94	0.15	0.97	-0.14	0.82	0.04	1.17
Get drunk: family care?	0.06	1.04	0.42	1.26	0.12	1.16	-0.12	0.69	-0.04	0.95	-0.16	0.84
Use marijuana: family care?	-0.05	1.05	0.09	1.06	-0.08	0.9	-0.4	0.34	-0.05	0.93	0.03	1.03
Use drugs other than marijuana: family care?	-0.01	0.99	0.05	1.0	0	0.99	-0.31	0.26	-0.04	0.98	0.06	1.07
Marijuana: family try to stop use?	-0.22	0.82	0.15	1.16	-0.09	0.89	-0.31	0.57	-0.03	0.97	0.07	1.02
Cocaine: family try to stop use?	-0.07	0.95	0.19	1.25	0.07	1.08	-0.12	0.87	-0.1	0.88	-0.01	0.96
Sniff glue/gasoline: family try to stop use?	0.01	1.05	0.33	1.32	0.09	1.12	-0.28	0.28	-0.11	0.87	-0.08	0.82
Getting drunk: family try to stop use?	-0.12	0.91	0.46	1.3	0.08	1.03	-0.15	0.86	-0.08	0.93	0	0.98
Your mother: how much you care about?	0.26	1.37	0.68	1.43	-0.07	0.85	-0.03	0.75	-0.02	0.82	0.01	0.79
Your mother: how well you get along with?	0.3	1.08	0.55	0.99	-0.29	0.81	0.12	0.79	-0.12	0.86	0.39	1.1
School Success	-0.09	2.10	-0.11	1.63	0.10	1.96	-0.32	1.73	-0.08	1.74	0.27	1.93
School Deviance	-0.47	2.47	-0.73	2.28	-0.24	2.33	-0.23	1.85	0.54	1.87	0.07	2.17
School Liking	0.57	3.42	0.06	3.53	-0.50	3.22	-0.73	3.7	-0.17	3.33	0.85	3.61

**Table 4. Means and Standard Deviations for Scales, for Each Ethnicity by Gender Group (continued)**

Variable	WM		WF		MM		MF		SM		SF	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Peer Relations	2.83	10.1	0.54	9.74	-2.12	11.52	-1.98	12.58	-1.25	11.13	-0.14	9.31
Religious Identity	0.37	2.86	1.06	2.35	-0.20	2.35	-0.92	1.78	-0.31	2.46	-0.07	2.39
Tolerance of Deviance	-0.08	3.41	0.59	3.98	-0.08	3.44	-1.75	2.31	0.47	3.38	-0.30	3.15
Minor Deviance	0.12	3.04	0.23	3.23	0.71	3.32	0.57	3.07	0.01	3.00	-0.65	2.53
Blame	0.67	3.77	1.03	4.13	0.22	3.53	0.43	4.08	-0.53	3.95	0.14	4.20
Alienation	0.55	2.40	0.11	2.78	0.47	2.26	0.07	2.34	-0.23	2.37	-0.19	2.44
Anger	0.3	3.62	0.59	4.14	-0.32	4.16	0.37	3.84	0.4	3.79	-0.42	3.7
Anxiety	0.2	2.89	0.82	2.85	-0.03	2.93	0.77	2.62	-0.35	3.02	0.26	2.46
Depression	0.98	6.0	2.76	6.2	-0.23	5.78	1.58	5.42	-1.31	5.68	0.94	5.8
Sexual Abuse	-0.18	0.77	0.98	1.68	-0.24	0.49	0.41	1.44	-0.23	0.54	0.33	1.31
Physical Abuse	0.89	4.84	0.46	4.25	0.72	4.64	1.0	4.92	-0.47	3.27	-0.44	3.99
How often alcohol, last month	2.34	1.31	2.49	1.15	2.51	1.2	2.64	1.18	2.64	1.26	2.69	1.24
How often marijuana, last month	2.01	1.65	2.3	1.51	2.42	1.67	2.86	1.64	2.68	1.68	2.48	1.58
How often sniffed, last month	1.09	0.49	1.16	0.37	1.13	0.43	1.18	0.59	1.18	0.61	1.25	0.58
How often uppers, last month	1.16	0.46	1.49	1.04	1.15	0.55	1.0	0	1.14	0.55	1.1	0.43
How often cocaine, last month	1.12	0.49	1.08	0.28	1.29	0.69	1.27	0.88	1.26	0.61	1.38	0.84
How often heroin, last month	1.0	0	1.0	0	1.01	0.11	1.0	0	1.05	0.37	1.1	0.57

**Table 4. Means and Standard Deviations for Scales, for Each Ethnicity by Gender Group (continued)**

Variable	WM		WF		MM		MF		SM		SF	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Deviant Behavior (Gingerich)	0.62	3.74	0.13	3.67	0.56	3.94	0.36	3.67	-0.05	3.39	-0.62	3.19
School Deviance (Gingerich)	0.49	1.76	0.06	1.72	0.17	2.03	0.32	2.02	-0.19	2.21	-0.06	2.12
Tolerance of Deviance (Gingerich)	0.29	2.84	0.002	3.18	-0.11	3.02	1.22	2.16	-0.48	2.97	0.55	2.76

Note: WM = WnH Male  
 WF = WnH Female  
 MM = Mexican-American Male  
 MF = Mexican-American Female  
 SM = Spanish-American Male  
 SF = Spanish-American Female

Note: For all items and scales, higher scores indicate presumably more problematic states (for example, less family caring, more family instability, less family support for education, less school success, weaker religious identification, etc.).

Note: Means for scales are presented as standardized scores (M = 0, SD = 1.00).

**Table 5. Family Background Scales: Main Effect for Gender**

Scale	Gender				Univariate Group Effect F (1, 430)	Effect Size Eta <sup>2</sup>
	Male		Female			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Family Caring	-.41	3.03	.69	3.57	11.62**	.03
Family Stability	-.17	1.58	.39	1.85	12.13**	.03
Family Support for Education	-.06	.91	.13	1.13	2.71	.006
Family Drug Sanctions	-.30	5.34	.06	5.2	.26	.001

\*\*p < .05

**Table 6. Family Background Scales: Main Effect for Ethnicity**

Scale	<u>Ethnicity</u>						<u>Univariate Group</u>	
	<u>Effect WnH</u>		<u>Mex-Am</u>		<u>Span-Am</u>		<u>Effect</u>	
	<u>Size</u>							
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>F (2, 430)</u>	
Family Caring	1.02	4.04	-.49	2.81	-.33	2.98	8.50**	.04
Family Stability	.53	1.78	-.16	1.76	-.20	1.56	7.79**	.04
Family Support for Education	.12	1.02	-.03	.92	-.12	.89	2.27	.11
Family Drug Sanctions	.37	5.83	-.52	4.95	-.56	4.75	2.79	.06

\*\*p < .05

**Note:** WnH refers to White non-Hispanic, Mex-Am refers to Mexican-American, Span-Am refers to Spanish-American.

**Table 7. Family Backgrounds of Delinquents Scales: Means for Gender**

Item	Gender				Univariate Group Effect F (1, 438)	Effect Size Eta <sup>2</sup>
	Male		Female			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Family try to keep you in school?	-.10	.88	.13	1.11	5.11	.01
Get drunk: family care?	.02	1.02	-.00	.97	.06	.000
Use marijuana: family care?	-.06	.95	-.02	.97	.10	.000
Use drugs other than marijuana: family care?	-.02	.98	-.01	.96	.03	.000
Marijuana: family try to stop you using?	-.09	.92	.02	1.00	1.18	.003
Cocaine: family try to stop you using?	-.05	.95	.02	1.02	.48	.001
Sniff glue/gasoline: family try to stop?	-.04	.98	-.01	.94	.08	.000
Getting drunk: family try to stop you?	-.05	.95	.09	1.07	1.90	.004
Your mother: how much do you care about?	.03	.98	.18	1.03	2.10	.005
Your mother: how well get along with?	-.07	.92	.39	1.03	20.64	.045

**Table 8. School Scales: Main Effect for Gender**

Scale	Gender				Univariate Group Effect F (1, 476)	Effect Size Eta <sup>2</sup>
	Male		Female			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
School Success	-.04	1.87	.08	1.83	.021	.000
School Deviance	.13	2.18	-.18	2.16	1.01	.002
School Liking	-.09	3.34	.41	3.63	.06	.000

**Table 9. School Scales: Main Effect for Ethnicity**

Scale	Ethnicity						Univariate Group Effect F (2, 430)	Effect Size Eta <sup>2</sup>
	WnH		Mex-Am		Span-Am			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
School Success	-.09	1.95	.01	1.91	.03	1.80	.56	.002
School Deviance	-.56	2.40	-.24	2.23	.39	1.98	6.70*	.027
School Liking	.40	3.45	-.55	3.32	.16	3.45	2.26	.009

\*  $p < .05$

**Note:** WnH refers to White non-Hispanic, Mex-Am refers to Mexican-American, Span-Am refers to Spanish-American.

**Table 10. Social Scales: Main Effect for Gender**

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Scale	<u>Gender</u>				<u>Univariate Group Effect F (1, 431)</u>	<u>Effect Size Eta<sup>2</sup></u>
	<u>Male</u>		<u>Female</u>			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Peer Relations	-.51	11.10	-.12	9.93	.08	.000
Religious Identity	-.14	2.62	-.02	2.38	.05	.000
Tolerance of Deviance	.24	3.43	-.51	3.36	2.22	.005
Minor Deviance	.17	3.09	-.23	2.77	.42	.001

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**Table 11. Social Scales: Main Effect for Ethnicity**

Scale	Ethnicity						Univariate Group Effect F (2, 430)	Effect Size Eta <sup>2</sup>
	WnH		Mex-Am		Span-Am			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Peer Relations	2.12	9.97	-2.09	11.71	-.91	10.60	2.54	.012
Religious Identity	.58	2.72	-.38	2.24	-.24	2.39	5.95**	.027
Tolerance of Deviance	.13	3.59	-.49	3.27	.23	3.32	2.73	.012
Minor Deviance	.16	3.09	.67	3.25	-.19	2.87	2.83	.013

\*\*  $p < .01$

Note: WnH refers to White non-Hispanic, Mex-Am refers to Mexican-American, Span-Am refers to Spanish-American.

**Table 12. Psychological Scales: Main Effect for Gender**

Scale	Gender				Univariate Group Effect F (1, 470)	Effect Size Eta <sup>2</sup>
	Male		Female			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Blame	-.08	3.83	.43	4.18	.86	.002
Alienation	.11	2.37	-.06	2.54	.96	.002
Anger	.08	3.88	.12	3.75	.01	.000
Anxiety	-.16	2.97	.49	2.57	4.34*	.009
Depression	-.54	5.83	1.51	5.80	8.75**	.018

\*p < .05  
 \*\* p < .01

**Table 13. Psychological Scales: Main Effect for Ethnicity**

Scale	Ethnicity						Univariate Group Effect F (2, 470)	Effect Size Eta <sup>2</sup>
	WnH		Mex-Am		Span-Am			
	M	SD	M	SD	M	SD		
Blame	.78	3.87	.26	3.64	-.32	4.03	2.45	.01
Alienation	.41	2.52	.38	2.27	-.22	2.39	2.17	.009
Anger	.39	3.78	-.16	4.08	.15	3.77	.49	.002
Anxiety	.39	2.88	.15	2.87	-.16	2.87	1.45	.006
Depression	1.54	6.09	.18	5.72	-.63	5.80	4.25	.018

**Note:** WnH refers to White non-Hispanic, Mex-Am refers to Mexican-American. Span-Am refers to Spanish-American.

**Table 14. Abuse Scales: Main Effect for Gender**

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Scale	Gender				Group Effect F (1, 468)	Univariate Effect Size Eta <sup>2</sup>
	Male		Female			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Sexual Abuse	-0.22	0.59	0.51	1.45	57.72***	.110
Physical Abuse	0.10	3.95	-0.02	4.05	.009	.000

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\*\*\*p < .001

**Table 15. Abuse Scales: Main Effect for Ethnicity**

Scale	Ethnicity						Univariate Group Effect F (2, 468)	Effect Size Eta <sup>2</sup>
	WnH		Mex-Am		Span-Am			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Sexual Abuse	.19	1.26	-.09	.84	-.06	.89	4.97**	.021
Physical Abuse	.75	4.64	.78	4.68	-.46	3.50	4.24*	.018

\* p < .05

\*\* p < .01

Note: WnH refers to White non-Hispanic, Mex-Am refers to Mexican-American, Span-Am refers to Spanish-American.

**Table 16. Drug Use Scales: Main Effect for Ethnicity**

Scale	Ethnicity						Univariate Group Effect F (2, 482)	Effect Size Eta <sup>2</sup>
	WnH		Mex-Am		Span-Am			
	M	SD	M	SD	M	SD		
Alcohol	2.39	1.26	2.54	1.19	2.65	1.25	1.41	.006
Marijuana	2.11	1.61	2.51	1.66	2.61	1.65	2.70	.011
"Sniffed"	1.12	.46	1.14	.47	1.20	.60	1.08	.004
Uppers	1.27	.72	1.12	.49	1.13	.52	5.49**	.022
Cocaine	1.11	.43	1.28	.73	1.30	.69	4.02*	.016
Heroin	1.00	.00	1.01	.10	1.07	.45	2.57	.011

\*p < .05

\*\* p < .01

**Note:** WnH refers to White non-Hispanic, Mex-Am refers to Mexican-American, Span-Am refers to Spanish-American.

**Table 17. Deviance Scales: Main Effect for Ethnicity**

Scale	Ethnicity						Univariate Group Effect F (2, 505)	Effect Size Eta <sup>2</sup>
	WnH		Mex-Am		Span-Am			
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Deviant Behavior	.46	3.72	.51	3.86	-.23	3.33	2.31	.009
School Deviance	.35	1.75	.20	2.02	-.15	2.18	1.83	.007
Tolerance of Deviance	.19	2.94	.19	2.89	-.15	2.94	.96	.004

**Note:** WnH refers to White non-Hispanic, Mex-Am refers to Mexican-American, Span-Am refers to Spanish-American.

**Table 18. Mean Values for Predictor Variables as a Function of Agreement Classification**

<u>Variable</u>	<u>Agree</u>		<u>Disagree</u>		<u>t</u>	<u>(df)</u>
	<u>M</u>	<u>n</u>	<u>M</u>	<u>n</u>		
Gender <sup>a</sup>	1.282	287	1.373	161	1.94	(312)
Ethnicity <sup>b</sup>	2.310	290	2.372	164	.766	(452)

<sup>a</sup> Gender Data Values: Male = 1, Female = 2

<sup>b</sup> Ethnicity Data Values: WnH = 1, Mexican-American = 2, Spanish-American = 3

**Table 19. Summary of Logistic Regression Analysis Predicting Agreement Classification**

<b><u>Variable</u></b>	<b><u>B</u></b>	<b><u>SE</u></b>	<b><u>Odds Ratio</u></b>	<b><u>Wald Statistic</u></b>
Gender: Male	--	--	-referent-	--
Gender: Female	-.41	.21	.665	3.802
Ethnicity: White-non-Hispanic	--	--	-referent-	--
Ethnicity: Mexican-American	-.14	.30	.873	.208
Ethnicity: Spanish-American	-.10	.12	.825	.611