¡HACIENDO TRAVESURAS CON VATOS LOCOS COMO YO! A LOW-SELF CONTROL APPROACH TO GANG VIOLENCE, GANG MEMBERSHIP, AND CRIMINAL OFFENDING--VIOLENT VICTIMIZATION AMONG GANG MEMBERS

by

EGBERT ZAVALA

B.A., The University of Texas at El Paso, 2005
M.A., Kansas State University, 2007

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Sociology, Anthropology, and Social Work
College of Arts and Sciences

KANSAS STATE UNIVERSITY
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Abstract

Criminologists have traditionally studied criminal offending and violent victimization separately. Extant studies, however, demonstrates that criminals and victims overlap to some degree, hinting that a common underlying trait explains both criminal offending and violent victimization. This study tests whether Gottfredson and Hirschi's self-control theory explains the overlap in criminal offending and violent victimization exposure among gang members. Using cross-sectional survey data from the *Evaluation of the Gang Resistance Education and Training (GREAT) Program in the United States, 1995-1999*, results from the regression models show that low self-control is to some degree correlated with criminal offending and violent victimization. Gang members were more likely than non-gang members to participate in some forms of criminal activities, but they were not more likely to be victimized. When variables stemming from social learning and social bonding are included in the regression models, results show that associating with delinquent peers had the strongest effect in predicting criminal offending, contradicting Gottfredson and Hirschi's claim that self-control is the only cause of criminal behavior. In concert with previous studies that have found a link between low self-control and violent victimization, results show that youths with low self-control were somewhat more likely than youths with higher self-control to report being victimized. The results of the study, as well as venues for future research, are discussed.

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Third, I would like to thank the members of my committee for their support and encouragement. I especially want to thank Dr. W. Richard Goe, my committee chair, for stepping up when my original committee chair moved on. Not originally trained as a criminologist, Dr. Goe did not hesitate to be my new chair even though he knew this study would be in criminology. He has displayed extreme professionalism over his role as mentor and his work ethic has been nothing short of astonishing. Dr. Goe taught me more outside the classroom than he did inside. Our trips to Ulysses, Lyons, Sublette, Hesston, and Emporia, Kansas during the summer of 2010 gave me the opportunity to conduct research beside a respected rural sociologist. And as such, he taught me more than any book could. I would also like to thank Dr. Don L. Kurtz and Dr. Chardie L. Baird for their contributions for this project. *Igualmente quiero dar un millón agradecimientos a* Dra. María Theresa Martínez-Ortiz. After explaining to her how important it is for me to have a Latino member serving on my committee she did not hesitate to join my committee. These scholars all provided substantial efforts to improve this dissertation.

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I have realize along my journey the value of hard work, patience, persistence, friendship, hope, and continuing education for a lifetime, despite what some may say to the contrary. It is very enriching and fulfilling to maintain our friendships and remember where we came from, and at the same time, move forward towards our career goals of service to our families and our communities.

Dedication

To my father and mother—my heroes and more,
Jimmy and Alicia Zavala

To my brothers—my best friends,
Ricky and Eric Zavala

To my niece—the mamas,
Lea Nineveh Zavala

Para mi "hermana"—the sister I never had
Beatriz Jimenez

"The rain and thunder
The wind and haze
I'm bound for better days
It's my life and my dream
Nothing is going to stop me now."

Preface

As an American, a Latino-a Mexican-American, first generation, bilingual, bicultural, and deeply rooted in this great nation; every year, everyday, and every moment, in some way I celebrate my Hispanic Heritage because I see it in the faces of my peers, my family, and my own. It matters because as an immigrant nation—not doing so would be….well, un-American.

CHAPTER 1 - Introduction

Statement of the Problem

An impressive body of literature has been produced by criminologists attempting to test the propositions of Gottfredson and Hirschi's (1990) *A General Theory of Crime*. More commonly known as the *low self-control* theory, this theoretical framework has been used to explain serious crime/delinquency and other "analogous" behaviors among sampling frames that includes the general population (Grasmick, Tittle, Bursik, and Arneklev, 1993; Forde and Kennedy, 1997; Keane, Maxim, and Teevan, 1993; Welch et al., 2008; Tittle, Ward, and Grasmick, 2003b; 2004; Burton et al., 1994; Boutwell and Beaver, 2010), working adults (Piquero, Scoepfer, and Langton, 2010), birth cohorts (Wright, Caspi, Moffit, and Silva, 1999), college students (Cochran, Woods, Sellers, Wilkerson, and Chamlin, 1998; Gibbs and Geiver, 1995; Sellers, 1999; Holtfreter et al. 2010; Nofziger, 2010; Clodfelter et al., 2010), criminal offenders (Cauffman, Steinberg, and Piquero, 2005; DeLisi, Hochstetler, and Murphy, 2003; Longshore, Turner-Rand, and Stein, 1996; Piquero, MacDonald, Dobrin, Daigle, Cullen, 2005; Kerley, Hochstetler, and Copes, 2009; Beaver et al., 2009; Kissner and Pyrooz, 2009), female offenders (Stewart, Elifson, and Sterk, 2004), homeless street youths (Baron, 2003), specific racial or ethnic groups (Vazsonyi and Crosswhite, 2004; Ozbay, 2008; Miller et al., 2009; Cheung and Cheung, 2008; Alvarez-Rivera and Fox, 2010; Cheung and Cheung, 2010), working adults (Piquero, Schoepfer, and Langton, 2010) and citizens from other countries (Tittle and Botchkovar, 2005; Vazsonyi et al., 2004; Vazsonyi et al., 2001; Vazsonyi and Klanjsek, 2008; Seipel and Eifler, 2010; Nakhaie, Silverman, and LaGrange, 2000; Meldrum, Young, and Weerman, 2009; Rebellon, Straus, and Medeiros, 2008; Ribeaud and Eisner, 2006).

These studies have found that low self-control is associated with force and fraud (Grasmick et al., 1993), drunk driving (Piquero and Tibbetts, 1996; Keane, Maxim, and Teevan, 1993), cheating and cutting class by college students (Cochran et al., 1998; Gibbs and Geiver, 1995; Gibbs, Geiver, and Martin, 1998), binge drinking (Piquero, Gibson, and Tibbetts, 2002), intimate partner violence (Sellers, 1999; Kerley, Xu, and Sirisunyaluck, 2008), shoplifting (Piquero and Tibbetts, 1996), speeding, smoking, gambling, excessive alcohol use, and other imprudent behaviors (Arneklev, Grasmick, Tittle, and Bursik, 1993; Evans, Cullen, Burton, Dunaway, and Benson, 1997; Paternoster and Brame, 1998; Forde and Kennedy, 1997; Hope and

Chapple, 2005; Keane, Maxim, and Teevan, 1993; Nofziger, 2010; Baker, 2010), digital piracy or other computer crimes (Wolfe and Higgins, 2009; Higgins, 2005; Higgins, Fell, and Wilson, 2006; Moon, McCluskey, McCluskey, 2010) and various forms of criminal victimization (Forde and Kennedy, 1997; Schreck, 1999; Piquero et al., 2005; Holtfreter, Reisig, and Pratt, 2008; Stewart, Elifson, and Sterk, 2004; Kerley, Xu, and Sirisunyaluck, 2008; Nofziger, 2009; Higgins et al., 2009; Kerley, Hochstetler, and Copes, 2009; Holtfreter et al. 2010; Schreck, Stewart, and Fisher, 2006; Higgins, Ricketts, and Vegh, 2008; Fox, Gover, and Kaukinen, 2009; Bossler and Holt, 2010).

The popularity of low self-control theory can be attributed to its simple, straightforward explanation for criminal and deviant behavior: People commit crime and deviance because they lack self-control. Vigorously dismissing other social factors that contribute to criminal behavior, such as delinquent peers (Warr, 2002), social learning mechanisms (Akers, 1998), or strain-induced factors (Agnew, 2001), Gottfredson and Hirschi (1990) forcefully argue that low self-control explains all criminal behavior at all times, regardless of culture or context (also see, Hirschi and Gottfredson, 1995). A meta-analysis review conducted by Pratt and Cullen (2000) on the empirical status of Gottfredson and Hirschi's general theory of crime demonstrated that a lack of self-control was always positively and significantly associated with criminal behavior and other analogous acts, regardless of the self-control measure used to test the theory. However, it was not always the strongest predictor of criminal and analogous behavior (Pratt and Cullen, 2000).

Largely due to the large scores of empirical studies, Gottfredson and Hirschi's (1990) *A General Theory of Crime* has been one of the most influential books in the criminological literature (Cohn and Farrington, 1999; Goode, 2008). However, this is not to say that the theory is not without its criticisms (Geis, 2000; 2008; Tittle, 1995; but see Hirschi and Gottfredson, 2000) as a number of criminologists have questioned its true usefulness (Akers, 1991; Barlow, 1991; Benson and Moore, 1992; Brownfield and Sorenson, 1993; Tittle, 1995; Stylianou, 2002; Redmon, 2003; Cretacci, 2008; Miller and Burack, 1993; Iovanni and Miller, 2008). While over fifty empirical studies have demonstrated that low self-control is associated with crime and deviance, these same studies reveal that self-control theory is not *the* explanation of criminal and deviant behavior (Tittle, Ward, and Grasmick, 2004; Cohn and Vila, 1996; Tittle and Grasmick, 1997; Tittle, 1991; Benson and Moore, 1992; Gibbs, Giever, and Martin, 1998; Reed and

Yeager, 1996; Welch et al., 2008; Wolfe and Higgins, 2009; Alvarez-Rivera and Fox, 2010). The large amount of evidence produced by criminologists suggests heavy refinements to the theory if it is to perform at the high levels purported by Gottfredson and Hirschi (1990).

A decade ago a new interest in the theory was generated by Schreck (1999) when he proposed the use of the theory as an explanation for criminal and violent victimization (also see, Nofziger, 2009). At the heart of his argument, Schreck (1999) proposes that individuals with low self-control are likely to engage in criminal activities and other analogous behaviors that in return will increase the person's chances of becoming a victim. On face value, Schreck's (1999) argument makes sense. For example, low self-control is linked to binge drinking (Piquero and Tibbetts, 1996) and a person intoxicated can become an attractive victim for a street robbery or mugging. Self-control has also been linked to promiscuous sex (Hope and Chapple, 2005), which can increase the chances of a person becoming a victim of a sexual assault. Street gamblers, by winning and carrying large amounts of money, may become attractive targets to others. Drug dealers, selling drugs from their home, increase their odds of a house burglary.

To date, a small but growing number of studies have been carried out to test the link between low self-control and violent victimization. For example, Schreck (1999), using a sample of college students, found that students with low self-control were at a greater risk for victimization when they were involved in criminal offending. In another study, using a sample of male youth paroled in California, Piquero, MacDonald, Dobrin, Daigle, and Cullen (2005) examined the link between low self-control and homicide victimization. Information about the offender's criminal history and subsequent arrest records were gathered and analyzed. Their results showed that low self-control was positively and significantly related to homicide victimization. More specifically, low self-controlled male youths were more likely to commit a violent offense once paroled and, for some, led to their homicide victimization. Holtfreter, Reisig, and Pratt (2008), using 922 respondents from the state of Florida, found that low self-control significantly increased the chances of fraud victimization. Specifically, individuals with low self-control found fraud offending attractive, which in return place themselves at a greater risk for fraud victimization (also see Holtfreter et al., 2010). Stewart, Elifson, and Sterk (2004), using 466 drug-using African-American females from Atlanta, Georgia, reported that women with low self-control were more likely to become victimized on the streets.

These studies, combined with other studies examining the relationship between involvement in crime and the experience of victimization, have led several criminologists to argue that the same correlates of crime are also the same correlates for victimization (Schreck, 1999; Schreck, Wright, and Miller, 2002; Piquero and Hickman, 2003; Nofziger, 2009). Clearly, these studies suggest that offenders and victims are usually the same person. Further, the hint at a common trait underlying both criminal offending and violent victimization; that is, low self-control.

While we should applaud these criminologists for their efforts in examining the link between low self-control and violent victimization, these studies have either focused on assault and property offenses committed by college students (Schreck, 1999), examined selective samples of street criminals (Piquero et al., 2005), or examined samples specific to one geographic location (Nofziger, 2009). Furthermore, the theory is very limited in addressing the influence of gang membership, and gang offending on victimization (Kissner and Pyrooz, 2009). This is an important omission in the literature as research has demonstrated: (a) the public holds a high level of fear concerning gang violence (Lane and Meeker, 2003; Lane, 2002; Lane and Meeker, 2000); and (b) youths are more likely to be victimized by their own peers (Nofizger and Stein, 2006; Schreck, Wright, and Miller, 2002; Schreck and Fisher, 2004; Schreck, Fisher, and Miller, 2004). In addition, several studies have documented that gang members are responsible for a disproportional share of criminal perpetration in society (Esbensen and Huizinga, 1993; Thornberry et al., 2003; Gordon et al., 2004).

Although a reasonably large body of literature has been produced by criminologists examining the extent of gang members perpetrating violence and other criminal activities (Taylor et al. 2007), research has yet to fully examine the extent to which gang members are victimized by their own peers and by the crimes they commit, using a theoretical framework that has been shown to explain both criminal offending and violent victimization (i.e. low self-control). Simply put, a theory is needed that not only offers an explanation for gang membership and criminal perpetration, but criminal victimization as well. In response to this need, Gottfredson and Hirschi's (1990) low self-control theory will be utilized in this research to explain gang membership, criminal perpetration, and criminal victimization.

Criminologists have traditionally studied offenders and victims separately. However, this changed when several studies found that offenders and victims are frequently the same person

(Mustaine and Tewksbury, 2000). More recently, research has indicated that offenders and victims may share similar risk characteristics such as low self-control (Baron, Forde, and May, 2007). The purpose of the current study is to conduct an additional examination of the link between low self-control and violent victimization. More specifically, this study will test the link between low self-control and violent victimization to a nationally representative sample of high school youths across the United States who have participated in the *G*ang *R*esistance *E*ducation and *T*raining (GREAT) program. Even though Nofziger (2009) examined this link using a non-representative sample of high school students, this study goes beyond this by answering her call for a test using a larger, nationally representative sample. In addition, this study focuses on criminality and violent victimization in a gang context.

No topic in the history of criminology has received more attention than the problems presented by street gangs (Short and Hughes, 2006). Although some criminologists have claimed that street gangs are made up of loosely organized, neighborhood kids (Kornhauser, 1978), other studies have documented the highly organized nature of street gangs that participate in illegal enterprises, with membership now reaching the thousands (Klein, 1995). The introduction of illegal drugs in inner cities and the youth homicides that occurred as a result have been attributed to youth gangs (see Howell, 1999; Klein, Maxson, and Cunningham, 1991). Criminologists have provided reasons for such behavior. Historically, criminologists have relied on social disorganization/socio-cultural theories to explain gang formation, gang behavior, and gang criminality (Thrasher, 1927; Whyte, 1943; Cohen, 1955; Spergel, 1964; Cloward and Ohlin, 1960; Vigil, 1988; 2002). These studies argue that gangs form naturally and function as a response to the privations of low-class life. Gangs are a status-generating medium for youths whose goals and aspirations cannot be accomplished through normal means.

With a few exceptions (i.e. Thornberry et al., 1993; Kissner and Pyrooz, 2009), criminologists have yet to apply other criminological theories to explain gang formation, gang criminality, and violent victimization in gangs. While some studies have examined the factors that are associated with violent victimization (Zavala, 2010), the role of low self-control is still absent in the literature. This study tests Gottfredson and Hirschi's (1990) general theory of crime to explain gang membership, criminal behavior, and victimization among gang members.

In the remainder of this study, I will demonstrate how self-control theory can be applied to explain both criminal perpetration and violent victimization within a gang context. Chapter

Two provides a comprehensive review of Gottfredson and Hirschi's (1990) theory, highlighting the specific elements of the theory. Studies that have been carried out to test these elements are discussed. Next, a review of the gang literature will be provided, with emphasis on the literature demonstrating a connection between criminal activity and violent victimization in gangs. Hypotheses generated by the literature review will also be presented here. Chapter Three provides a description of the data used to test the hypotheses. A description of how the variables are measured in the current study will be discussed. Chapter Four presents the study results, followed by discussion and conclusions. Finally, the study's limitations are discussed and directions for future research presented in Chapter Five.

CHAPTER 2 - Literature Review

Gottfredson and Hirschi's A General Theory of Crime

Criminologists have long been interested in determining why some people are more inclined to commit crime than others. Although many other criminologists have long proposed theories to explain criminal and deviant behavior, Gottfredson and Hirschi (1990) *A General Theory of Crime* has had a major impact on understanding the causes of crime and deviance (Pratt and Cullen, 2000). The theory argues that a one-dimensional personality trait, which they call *low self-control*, predisposes males and females (adults or juveniles) to commit criminal/deviant acts. Counter arguing many previous theories, such as social learning (Akers, 1998) and social bonding theories (Hirschi, 1969), which are based on external social factors influencing human behavior, Gottfredson and Hirschi's (1990) theory emphasizes internal factors affecting individual behavior.

Gottfredson and Hirschi (1990) hypothesize that a person's level of self-control is the underlying cause of *all* criminal and deviant acts, regardless of context or culture. If this theory is correct, then existing criminal theories may create unnecessary and convoluted explanations regarding the causes of crime (Pratt and Cullen 2000). Rather than looking at external factors or social conditions for answers, the primary cause of criminal behavior and deviance is theorized to lie within the individual. Low self-control relies on the assumption that there are "no inter-individual differences in the motivation to commit crimes (or to perform analogous acts), since such motivation is a basic feature of the human personality" (Romero et al. 2003: 62). Arguing that control theories are predicated on the notion that criminal motivation is universal and similar across different people, there is thus little reason to develop theories about the causes of variation in motivation, according to Gottfredson and Hirschi (1990). Instead, individuals are theorized to possess varying levels of self-control which, rather than being a source of motivation, refers to an individual's ability to refrain from engaging in crime when faced with an opportunity to commit crime.

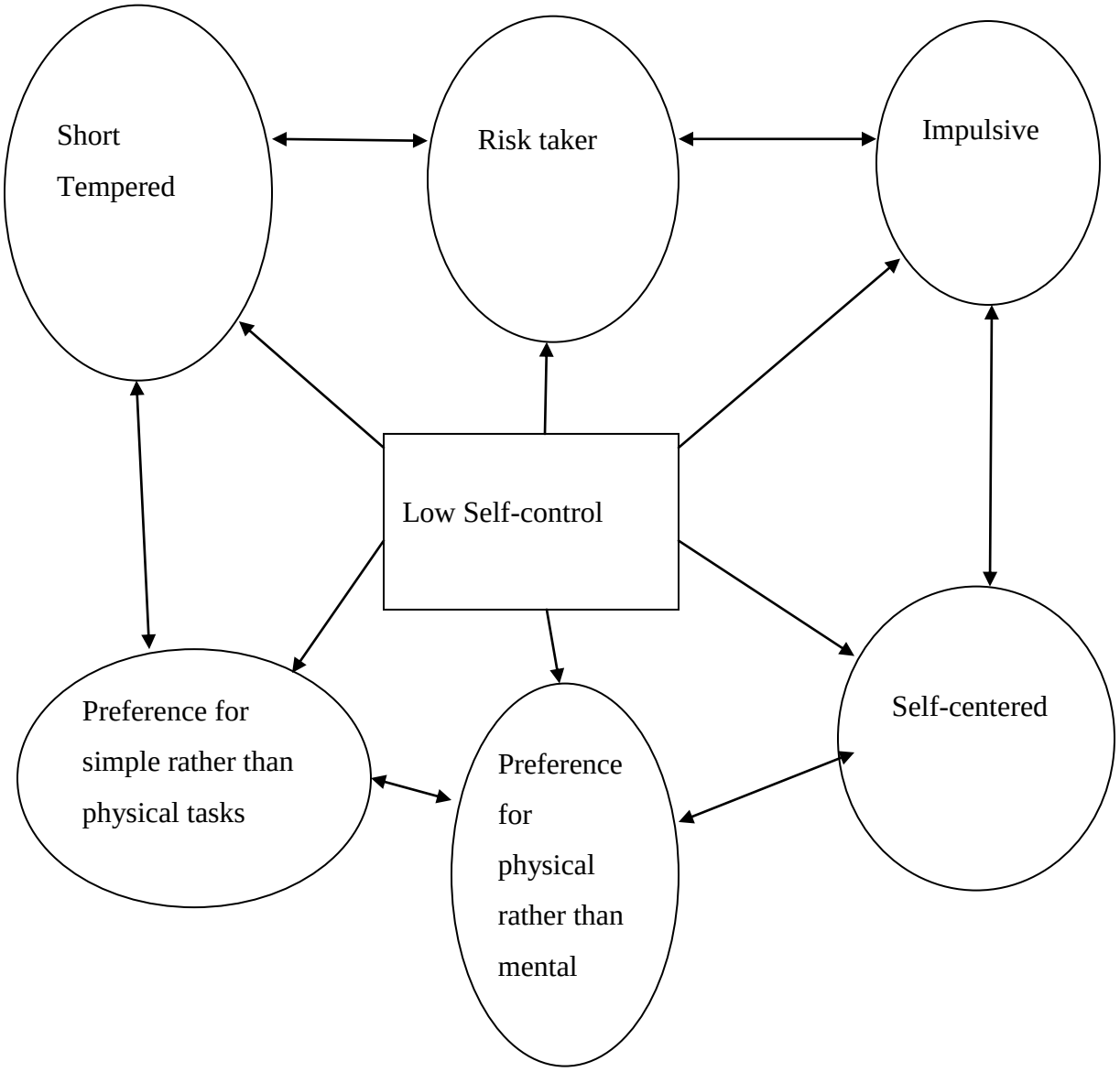
Thus, Gottfredson and Hirschi (1990) argue that there is a strong association between crime and criminality, which refers to any type of predisposition to commit crimes, such as low self control. As criminal predispositions increase in intensity, they are predicted to yield an increase in criminal behavior. Although everyone is attracted or motivated to crime equally,

differential levels of self-control will translate into differential levels of criminal behavior because they reflect criminal predispositions (Tittle and Botchkovar, 2005). Lower levels of self-control increase the likelihood that people will give in to the seductive or utilitarian qualities of crime. Low self-control, then, constitutes a personality trait varying from individual to individual, that not only has a direct effect on crime, but which is argued by Gottfredson and Hirschi (1990) to be the *only* cause of crime (for a contrasting perspective, see Tittle, Ward, and Grasmick, 2004; Welch et al., 2008).

Elements of Self-Control

Gottfredson and Hirschi (1990) conjure up self-control as a one-dimensional personality trait made up of several different components that combine to form a single latent trait. Gottfredson and Hirschi (1990) spell out six elements that comprise this underlying trait: impulsivity, preference for simple rather than complex tasks, risk taking, preference for physical rather than mental activity, self-centeredness, and being short tempered. Impulsivity refers to the tendency to respond to tangible stimuli in the immediate environment, to have a concrete here and now orientation, as opposed to deferring gratification (Gottfredson and Hirschi 1990: 89). Preference for simple rather than complex tasks reflects the "lack [of] diligence, tenacity, or persistence in the course of action," where individuals seek out the easy or simple gratifications of desires (Gottfredson and Hirschi 1990: 89). Risk taking refers to the tendency for individuals to be "adventuresome," as opposed to being "cautious" (Gottfredson and Hirschi, 1990: 89). The preference for physical rather than mental activity consists of the desire to be physically active and on the move (Gottfredson and Hirschi, 1990: 89). Individuals possessing this trait do not seem to have much interest in activities requiring cognitive skills. People with low self-control are also argued to be "self-centered, indifferent, or insensitive to the suffering and needs of others" (Gottfredson and Hirschi, 1990: 89). This is not to argue that these people are deliberately mean, but rather that they think primarily of themselves first. Their actions are a reflection of a focus on personal gains or self interest. Finally, Gottfredson and Hirschi (1990: 90) argue that people with low-self-control are short tempered and have "minimal tolerance for frustration and little ability to respond to conflict through verbal rather than physical means." A visual representation of Gottfredson and Hirsch's (1990) theory is presented in Figure 1.

Figure 1: A Visual Depiction of Gottfredson and Hirsch's Self-Control



With these characteristics in mind, levels of self-control will decrease to the extent that individuals are impulsive, prefer simple tasks, take risks, prefer physical activities, are self-centered and short-tempered (see also Barlow 1991; Grasmick et al. 1993). The six elements of low self-control are argued to be associated with each other and, therefore, can be conceptualized as representing the various parts of the larger latent trait. In addition to the association between low self-control and crime, criminologists have also studied several important theoretical and empirical issues related to low self-control theory: (1) the definition of crime and analogous behaviors; (2) the causes of low self-control; (3) whether self-control is a single concept or multidimensional; (4) whether an individual's level of self-control is stable throughout the life course; (5) whether self-control directly affects crime or if it is better viewed as interacting with criminal opportunity; (6) whether the generality of self-control is applicable across all races/ethnicities; and (7) the issue of theoretical tautology. These issues and relevant empirical findings are discussed below.

Crime and Analogous Behaviors

Different from many other criminological theories, Gottfredson and Hirschi's (1990) general theory of crime contains a specific conceptualization of crime, which represents the foundation of the theory. For Gottfredson and Hirschi (1990: 15), crime refers to behavior undertaken in the pursuit of pleasure and avoidance of pain and is defined as "acts of force or fraud undertaken in the pursuit of self-interest." To advance the generality of their theory, Gottfredson and Hirschi (1990) do not define crime in terms of law violation. This was done to avoid the problem of their theory not being applicable across various contexts or cultures, where laws will differ. Furthermore, through the inclusion of fraudulent acts in this definition, the theory seeks to explain white-collar crime, a topic missing from many prior theories (Grasmick et al. 1993). Therefore, low self-control theory argues that an individual with low-self control is more likely to commit forceful or fraudulent acts.

Gottfredson and Hirschi (1990) contend that the characteristics of low self-control are consistent with those of criminal acts. Criminal acts are said to provide immediate gratification of desires which coincides with the argument that individuals with low self-control are impulsive and posses a "here and now orientation" (Gottfredson and Hirschi, 1990: 89). Commensurate with a preference for simple tasks, crimes also provide "easy or simple gratification of desires"

(Gottfredson and Hirschi, 1990: 89) with "little risk of detection and little risk of resistance (Gottfredson and Hirschi, 1990: 13). In addition, crimes provide few, if any, long-term benefits and thus require little skill or planning (Gottfredson and Hirschi, 1990: 89). There is no future orientation due to the fact that criminal acts interfere with long-term commitments. These criminal acts require no special skills. Furthermore, criminal acts often result in pain or loss for the victim which mirrors the low self-control element of self-centeredness.

Low self-control theory is intended to not only explain criminal behavior, but also what Gottfredson and Hirschi (1990) term analogous or imprudent behaviors. Acts that are analogous to crime can be viewed as representing types of deviant behavior that are not acts of force or fraud and not a violation of any written law. These behaviors include, but are not limited to, cutting or skipping class, being unable to keep steady employment, having multiple intimate relationships, and engaging in reckless behaviors such as promiscuous sexual behavior. Gottfredson and Hirschi's (1990) theory can explain analogous/criminal acts because participation in these activities provides the same easy and immediate gratification of desires as do acts of force and fraud. In addition, analogous and imprudent acts may be viewed as similar to deviant behaviors, actions which are often viewed as wrong or in violation of social norms, but which are not criminalized by the governing body.

Many studies have been conducted regarding self-control in relation to imprudent and analogous acts. Keane, Maxim, and Teevan (1993) examined the relationship between self control and driving under the influence of alcohol. Their analysis of the data collected from the 1986 Ontario Survey of Nighttime Drivers provided support for this relation. DUI behavior can be seen as impulsive, risky, hedonistic, and short-term oriented, in that the individuals seem to fail to appreciate (or care about) the potential consequences of their actions (Kean, Maxim, and Teevan 1993). Gibbs and Giever (1995) also found strong support for this relationship. Using a cluster sample of undergraduate university students, the authors administered a survey to examine the connection between self-control and drinking and class cutting. Their study demonstrated that self-control was highly correlated with both drinking and skipping class (Gibbs and Giever, 1995).

In contrast, Arneklev et al. (1993) found mixed results. Using a simple random sample of adults, surveys were administered to examine self-control in relation to smoking, drinking, and

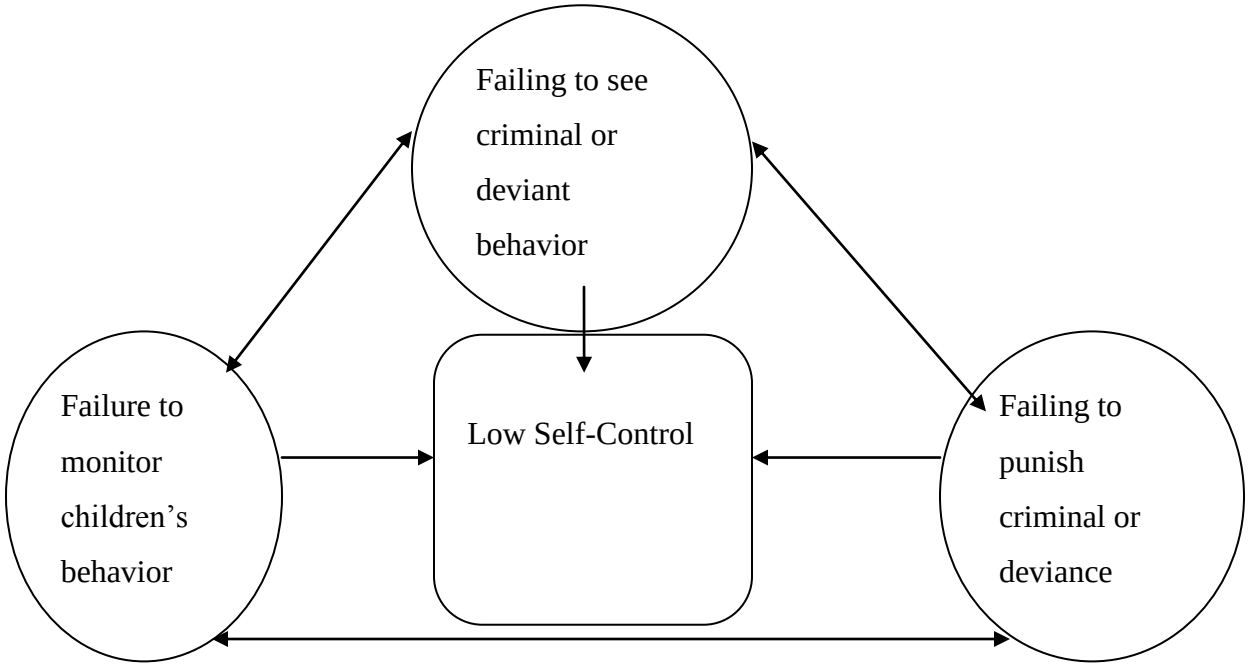
gambling. It was shown that smoking appeared to be unaffected by self-control. Furthermore, they found some components of self-control to have more predictive power than others.

Causes of Low Self-Control

Gottfredson and Hirschi's (1990) theory posits that low self-control is established in early childhood by ineffective parenting, although other research finds otherwise (Teasdale and Silver, 2009). Pratt and Cullen (2000) argue that people committing crimes and analogous behaviors in adolescence and in adulthood start manifesting conduct problems early in life. This emphasis on early childhood socialization is unique in that it departs from many prior criminal theories which are unable to explain why crime is often prevalent among children long before they are exposed to any of the social conditions specified by these theories to affect crime (Pratt and Cullen 2000).

Gottfredson and Hirschi (1990: 97) state that the major cause of low self-control is ineffective child rearing by parents (see, Boutwell and Beaver, 2010a; 2010b). Low self-control stems from a family where parents do not sufficiently monitor their child's behavior, do not consistently recognize deviant behaviors, and fail to punish such behaviors when they occur. Poor socialization tends to increase low self-control in children because the pattern of deviant behavior will not be corrected (Boutwell and Beaver, 2010a; 2010b). Alternatively, Gottfredson and Hirschi (1990) argue that parents who are strongly attached to their children tend to be better able to monitor, recognize, and punish their children's misbehavior thereby building strong self-control into their children. A visual representation of the causes of low self-control according to Gottfredson and Hirschi (1990) is presented in Figure 2. Although not discussed very much in the literature, this part of the theory carries a misogynistic tone. In criticizing this perspective, Miller and Burack (1993) contended that Gottfredson and Hirschi (1990) fail to realize that mothers have historically been the primary caretakers of children, regardless if children are raised by both of his or her biological parents (also see Iovanni and Miller, 2008). If low self-control is caused by poor parenting practices, and low self-control is the cause of criminal behavior, then the theory grossly blames mothers for society's crime problem (Miller and Burack, 1993). The general theory of crime essentially becomes a woman-blaming theory of crime, and suggests that crime can be eliminated if only mothers better cared for their children (Iovanni and Miller, 2008).

Figure 2: A Visual Depiction of the Causes of Low Self-Control



Using longitudinal data collected on approximately 750 African American children and their primary care givers, Burt, Simmons, and Simmons (2006) examined the relationship between the quality of parenting and involvement in delinquent behavior. Their findings neither consistently support nor refute Gottfredson and Hirschi's (1990) assertions. Other factors interacting with this relationship were brought to light in their research. Parental behavior influences an individual's risk for delinquency in more ways than simply through its impact on self-control (Boutwell and Beaver, 2010). Another study by Hay (2001) used data collected from a sample of urban high school students to examine this relationship. The author found moderate support for the claim that both parental monitoring and discipline combined are negatively related to low self-control. However, Hay (2001: 726) also found that "despite a strong effect of low self-control on delinquency, low self-control only partially mediates the effects of parental monitoring-discipline on delinquency." This refutes the claim that low self-control should mediate all or virtually all of the effects. In general, his findings support the theory, but with certain limitations (also see Boutwell and Beaver, 2010a; 2010b).

Gottfredson and Hirschi (1990) point out that family size is crucial in the acquisition of self-control. As the number of children in the family increases, the likelihood that each of these children will be delinquent increases as well (see also, Hope, Grasmick, Pointon, 2003;

Schroeder, Osgood, and Oghia, 2010). Gottfredson and Hirschi (1990) argue that families with a larger number of children place a strain on the parents that diminishes their ability to monitor and punish their children. Therefore, children that come from a larger family should be less likely to acquire high levels of self-control. The same argument can be applied to single-parent families (Hope, Grasmick, Pointon, 2003). With one parent, the necessary parental resources to instill high self-control in their children are inadequate, according to the authors. They suggest that children from single-parent families have lower levels of self-control than children in two-parent families. Gottfredson and Hirschi (1990) argue that remarriage, by either the mother or father, does not solve this problem. They argue that most stepparents are not actively involved in raising their stepchildren. Children in stepfamilies, therefore, should mirror children from single-parent families in terms of levels of low self-control (Gottfredson and Hirschi, 1990). As it should be clear, Gottfredson and Hirschi (1990) seem to suggest that conservative public policies regulating family practices would solve the crime problem.

Testing these assumptions, Hope, Grasmick, and Pointon (2003) found that children whose parents exerted strong supervision and attachment reported higher levels of self-control than children whose parents did not have strong attachment or supervision. Children from stepparent families reported less attachment to their stepparent than children from intact families, suggesting less supervision and lower levels of self-control (Hope, Grasmick, and Pointon, 2003).

Recent studies have also suggested that poor parenting practices may not be the only causes of low self-control. The neighborhood where a youth lives, and whether their parents also have low self-control, have be found to influence a juveniles' self-control. Teasdale and Silver (2009), for example, argue that a youth's neighborhood also contributes to the development of low self-control. Youths who live in economically disadvantages neighborhoods will be exposed to unconventional lifestyles, will experience little informal social control by other residents of the neighborhood that may curtail criminal behavior, and will be less likely to participate it community activities. Using data from the *National Longitudinal Study of Adolescent Health*, Teasdale and Silver (2009) reported that disadvantage neighborhoods, residential mobility, and social integration all influence self-control, net of family factors, social regulation, and demographic variables.

Boutwell and Beaver (2010a) tested the hypothesis that parents with low self-control can "pass" this trait unto their children--a transmission across generational lines. Using data collected from the *Fragile Families and Child Wellbeing*, Boutwell and Beaver (2010a) found that maternal and parental levels of self-control significantly predicted their children's level of self-control. Parents with low levels of self-control do not have the necessary skills to properly instill high self-control in their children. Having low self-control themselves, these parents find parenting daunting, time consuming, and requiring large amounts of attention. With their ineffective parenting practices, these parents are less likely to monitor their children's behavior, recognize their child's misbehavior, and less likely to punish bad behavior when it occurs. As a result, their children will mature into adults with low self-control (Boutwell and Beaver, 2010a). These adults are then expected to pass this trait to their children in a never-ending cycle (also see, Beaver, Ferguson, and Lynn-Whaley, 2010).

Dimensions of Self-Control

There has been a lot of debate over the issue of dimensionality or whether low self-control really represents a single or multi-dimensional construct (Ward et al., 2010). Several studies concur with Gottfredson and Hirschi (1990) that the dimensions of low self-control combine to form a single one-dimensional trait in factor analyses (see Grasmick et al. 1993; Gibbs and Giever 1995; Burton et al. 1998). Gottfredson and Hirschi (1990: 90-91) state that "there is considerable tendency for these traits to come together in the same people, and since the traits tend to persist through life, it seems reasonable to consider them as comprising a stable construct useful in the explanation of crime." But, other studies have found multi-factor solutions, concluding that self-control is a multidimensional trait (e.g. Romero et al. 2003; Vazsonyi et al. 2004; Vazsonyi et al. 2001). Based on factor analyses done in these studies, the elements of self-control have been found in some cases to represent a single factor while in others to represent multiple factors. Based on these discrepancies, the issue of dimensionality continues to be unresolved today (Ward et al., 2010).

Stability of Self-Control

The theory further argues that once established, an individual's level of self-control remains relatively stable over the life course and is relatively unaffected by any social institutions. Self-control thus becomes a stable, internal restraint mechanism directing behavior

over the person's life course. This stability argument has received criticism by recent studies. An individual's level of self-control has not been found to remain stable over the life course as stated by Gottfredson and Hirschi (1990). Researching this claim, Hay and Forrest (2006: 763) state that "our findings suggest not simply that self-control can change during adolescence, but that once gained, it can be lost."

Using data from a national probability sample, Turner and Piquero (2002) examined the stability of self-control over the age period of 7 to 19 years. Their results indicated moderate stability, thus offering mixed support for the theory's stability claim. There is at least partial evidence that levels of self-control are in a state of flux in childhood and relatively fixed thereafter. Another study by Burt, Simons, and Simons (2006) used longitudinal data collected on African American children to examine this proposition. Their results indicated that "low self-control is neither solely an outcome of parental control in the early years nor stable and insensitive to social influences after age 10" (Burt, Simons, and Simons, 2006: 381). Although far from conclusive, the results thus far appear to indicate that self-control is not completely stable.

The stability of self-control is further threatened by Sampson and Laub's (1993) *age-graded theory.* Conducting a follow-up study of delinquent boys, Sampson and Laub (1993) identified "life events" that help delinquent boys to desist from criminal behavior as they matured. Two crucial life events that help these men stop committing criminal behavior were marriages and careers. A youth with a past history of crime can stop committing crime if they can find good jobs and sustain a long career. Once they obtained a good job, these men did not want to run the risk of losing their jobs by committing more crime (Sampson and Laub, 1993). As a result, they stop committing crime. Marriages also helped delinquents from continuing criminal behavior. Sampson and Laub (1993) argued that once married, these delinquent boys spent less and less time with their deviant peers. Spending time with their spouses and children reduced the opportunity to be involved in criminal behavior (see, Warr, 1998). Supporting their wives and children were more important than criminal behavior. Overall, Gottfredson and Hirsch's (1990) contention that nothing can influence low self-control once it is instilled is simply not supported (Sampson and Laub, 1993; Warr, 1998).

Self-Control and Opportunity

Although not specifically stated, Gottfredson and Hirschi (1990) allude to the idea that an individual's level of self-control interacts with criminal opportunity to affect crime (Hirschi and Gottfredson 1993). Grasmick et al. (1993: 10) stated that "in the presence of an opportunity to commit a crime, individuals with low self control are likely to commit it whereas individuals with high self-control are not. Crime, then, is an interactive function of self-control and crime opportunity." Gottfredson and Hirschi (1990), however, do not fully develop this argument writing elsewhere that self-control and opportunity may interact for some crimes, but are generally independent (Hirschi and Gottfredson, 1993).

One criticism regarding the criminal opportunity argument is the inconsistency involving risks. Individuals with low self-control are said to be risk takers. Yet, one characteristic of criminal opportunity is that there is little risk of detection. Those with low self-control, by Gottfredson and Hirschi's (1990) definition, should not be attracted to situations involving little risk (Grasmick et al. 1993). Others have argued that this lack of attention to criminal opportunity is a crucial mistake due to the possibility that social conditions may affect the presence of criminal opportunity (Grasmick et al. 1993; Pratt and Cullen 2000).

Generality of Self-Control as the Cause of Crime

Gottfredson and Hirschi's (1990: 149-151) theory strongly contends that it is a general theory, applicable not only to all types of crime and deviance, but also to all races/ethnicities, genders, ages, and across all times and places. Therefore, despite the multitude of complexities varying from individual to individual, varying levels of self-control are argued to represent the cause of criminal or deviant behavior. Gottfredson and Hirschi (1990: 153) argue that "there are differences among racial and ethnic groups (as there are between the sexes) in levels of direct supervision by family, and thus there is a crime component to racial differences in crime rates, but, as with gender, differences in self-control probably far outweigh differences in supervision in accounting for racial or ethnic variations." Thus, racial/ethnic/sex/age differences in crime and deviance are due to differences in self-control among these groups, rather than other factors. This "generality claim" may be simply tested by assessing the association between low self-control and crime in various contexts. Several studies have been conducted to test this empirical question. For example, using Russian citizens, Tittle and Botchkovar (2005) found support for

the effect of low self-control. Vazsonyi et al. (2004) used a sample of Japanese adolescents and found that low self-control was consistently related to various measures of deviance. However, in comparison to a similar sample of U.S. adolescents, Vazsonyi (2004: 209) found an exception: "Contrary to expectations, low self-control was negatively related to alcohol use in this sample of Japanese late adolescents."

Morris, Wood, and Dunaway (2006), however, found no evidence to support the generality claim. Using a sample of White and Native American high school students, Morris, Wood, and Dunaway (2006: 588) found that "self-control differentially influences at least certain types of substance use, which goes against the generality argument posited by Gottfredson and Hirschi."

The Question of Theoretical Tautology

Critics of Gottfredson and Hirschi (1990) have levied the charge of tautology against the theory (Akers, 1991; Barlow, 1991; Akers and Sellers, 2009, Geis, 2000). These critics claim that the concept of self-control seems to be defined by the very thing it hypothesizes to explain, *crime*; thus, forming a circular argument which could never be proven false (Akers, and Sellers, 2009). Gottfredson and Hirschi (1990) do not identify operational measures of low self-control as separate from the very tendency to commit crime that low self-control is supposed to explain (Akers and Sellers 2009). Hirschi and Gottfredson (1993) contend that the better (or preferred) measure of self-control would be a behavioral index (but see, Tittle, Ward, and Grasmick, 2003b). Yet, this is the same measure used for crime or analogous behavior (Akers and Sellers, 2009). Thus, both self-control and crime are measured by the same thing. In this sense, low self-control is said to cause low self-control or, alternatively, analogous acts cause crime. Since no operational definition of self-control is given, we cannot know that a person has low self control unless he or she commits crimes or analogous behavior (Akers 1991; see also Barlow 1991). Hirschi and Gottfredson (1993; 2000) deny this charge and emphasize a distinction between the two. For these reasons, it is important to take into consideration Gottfredson and Hirschi's (1990) definition of self-control, as well as crime, so as to develop a valid measure of self-control and avoid a charge of tautology.

Sex and Low Self-Control

The relationship between sex and crime is one of the strongest (and least disputed by criminologists) correlates of crime. It was been well documented that regardless of time and place, men engage in more crime than women. When looking at a specific crime like interpersonal violence, a recent study has shown that there was little or no change in the sex gap in terms of offending from 1980 through 2003 (Steffensmeier et al., 2006). However, despite this obviously historical trend, no satisfactory explanations exist to offer an insight into this gender gap in crime. Feminist and other criminologists have criticized the over usage of traditional gender-neutral theories to explain female criminality, and have argued for the creation of gender-specific theories in order to truly understand female criminality. Gottfredson and Hirschi (1990) argue that their theory is a gender neutral theory and capable of explaining the gender gap on crime. Theoretically, males and females with similar levels of self-control will commit similar crimes and other analogous acts. Because males commit more crime than females, Gottfredson and Hirschi (1990) assert that females have higher levels of self-control; thus they commit less crime.

According to Gottfredson and Hirschi (1990: 145), "men are always and everywhere more likely than women to commit criminal acts." This has been historically true. Regardless of analyzing data from the Federal Bureau of Investigation (FBI) Uniform Crime Report, National Crime Victimization Survey, or self-reported surveys, men are consistently found to be involved in more crime and delinquency than females (Steffensmeier et al., 2006; Tittle and Paternoster, 2000; Steffensmeier and Allen, 2000; Tittle, Ward, and Grasmick, 2003; Mears, Ploeger, and Warr, 1998). However, juvenile females are much more likely to be arrested for status offenses such as running away and prostitution (Chesney-Lind and Shelden, 2004).

Why males and females differ in their involvement in crime and other deviant behaviors continues to be a debated in criminology. Reasons for why men commit more crime than women include differences in exposure to familial attachment (Heimer and DeCoster, 1999), opportunity or supervision differences (Adler, 1975; Heimer, 1996; Heimer and DeCoster, 1999), gender role socialization (Hagan, Simpson, and Gillis, 1987), biological differences (Campbell, Muncer, and Bibel, 2001), and different delinquent peer associations (Mears, Ploeger, and Warr, 1998). Whether males or females offend for the same reasons has also generated debate in criminology.

Gottfredson and Hirschi (1990) talk little about the sex gap in general. When they do talk about the sex gap, Gottfredson and Hirschi (1990: 147) simply state that the "gender differences for all types of crime are established early in life and that they persist throughout life. This fact implies a substantial self-control difference between the sexes." Several studies have been carried out to determine the different levels of self-control between boys and girls. Girls have higher levels of self-control than boys according to the studies by Burton et al., (1998), Hayslett-McCall, and Bernard (2002), Hope and Chapple (2005), LaGrange and Silverman (1999), Tittle, Ward, and Grasmick (2003), Turner and Piquero (2002), Chapple and Johnson (2007), Winfree, Taylor, He, Esbensen (2006), Mason and Windle (2002), and Nofziger (2010). It is important to point out, however, that Higgins and Tewksbury (2006) found that while self-control predicated delinquency by both boys and girls, the theory more strongly predicted male delinquency than female delinquency. Despite this Gottfredson and Hirschi's (1990) theory tends to predict crime and delinquency regardless of sex. This body of literature, then, suggests that boys and girls acquire self-control differently.

In accordance with other social control theories (see Hirschi, 1969 and Kornhauser, 1978), Gottfredson and Hirschi's (1990) general theory of crime argues that all people are equally hedonistic and naturally seek pleasure. Self-control is instilled into children by effective parenting and, therefore, is associated with parenting practices (Pratt, Turner, and Piquero, 2004; Turner, Piquero, and Pratt, 2005; Chapple and Johnson, 2007; Nofziger, 2008). Even though Gottfredson and Hirschi (1990) clearly point out that females have higher self-control than males, they *never* state why levels of self-control are different between sexes. Chapple and Johnson (2007) recently shed light into this gap and their study demonstrated that the association between discipline and self-control and attachment and self-control were substantially different by sex. It appears that self-control is a product of gendered socialization which, in turn, produces different self-control in boys and girls.

Regardless of the type of victimization or crime, research has clearly established that men are more likely than women to be arrested, charged with a crime, and be sentenced and incarcerated in jails or prisons. When examining victimization, research has shown that both men and women tend to be victimized by specific types of crime. Women tend to report higher levels of intimate partner violence, stalking, and sexual assault whereas men tend to report higher rates of street robbery, assault, and violent victimization in general.

Joining a Gang as an Analogous Behavior

Although not mentioned by Gottfredson and Hirschi (1990), joining a street gang can be seen as an analogous behavior as specified by their theory. Lynskey et al. (2000) point out that joining a gang may satisfy a low self-control juvenile's desire for risk-taking behaviors. Membership itself can increase their desire for other things, such as criminal activity, getting into trouble with parents and/or other authorities, as well as being in company of other like-mind youths. Those with low self-control may also fail to consider the mental or emotional risks associated with gang membership such as the negative social consequences associated with the label "gang member," the possibility of isolation from family and other non-gang youths, and potential problems at school that can disrupt future success. Numerous gang activities may be attractive to low self-control juveniles as these activities can bring immediate gratification with little effort. Alcohol and illicit drug use may bring immediate pleasure to the person while theft or larceny may bring immediate benefits. Lynskey et al. (2000) also point out that gangs serve as a "surrogate family." This fact may attract youths with low self-control. Because the theory states that self-control is acquired through family socialization, those with weak or no parental guidance may turn to the gang as a substitute for parental or familial interaction in their lives (Lynskey et al., 2000).

Low Self-Control and Victimization

The heart of the theory argues that people who lack strong self-control are predisposed toward criminal and analogous behaviors because these behaviors are acts that result in temporary benefits by enhancing pleasure or eliminating pain. This theory is largely grounded on the assumption of natural hedonism, which states that humans are pleasure seeking and pain aversive creatures. Those with low self-control will succumb to the temptation of the moment, which they think will bring pleasure or pain avoidance. Strong self-control is the guard that controls or restrains people from acting on "natural" tendencies of satisfying pleasure and needs. Again, Gottfredson and Hirschi (1990) argue that people with low self-control are impulsive, shortsighted, risk takers, prefer physical, as opposed to mental, insensitive, and easily frustrated.

Gottfredson and Hirschi (1990) developed their theory in order to explain why individuals commit crime and other analogous behaviors. Their theory was not intended to explain victimization. Although a general theory of crime is used to explain offending, Schreck

(1999) demonstrated how their theory could also be used to explain victimization. Schreck (1999) took the six characteristics of low self-control and explained how these elements could also lead to victimization. First, as stated by Gottfredson and Hirschi (1990), individuals with low self-control are impulsive. These people seek immediate gratification compared to individuals with high self-control who are more inclined to defer rewards or immediate gratification. Individuals with low self-control are more likely to seize opportunities to have fun and seek pleasure without thinking about the consequences or potential dangers involved in their behavior.

Second, those with low self-control tend to lack tenacity, diligence, or persistence. These individuals will prefer simple activities or tasks that require little commitment and involvement. Schreck (1999) argues that it is possible that these people will fail to take proper precautions against personal victimization which will allow an offender to make a quick low-risk effortless gain.

Third, individuals with low self-control will seek risky activities. People with low self-control are drawn to activities that are adventurous, adrenaline rushing, and exciting. These people do not like environments that require discipline and, therefore, will tend to "gravitate to the streets" to seek adventure (Gottfredson and Hirschi, 1990: 157). Individuals who seek excitement place themselves in high-risk situations that can be dangerous and will increase their chances for victimization.

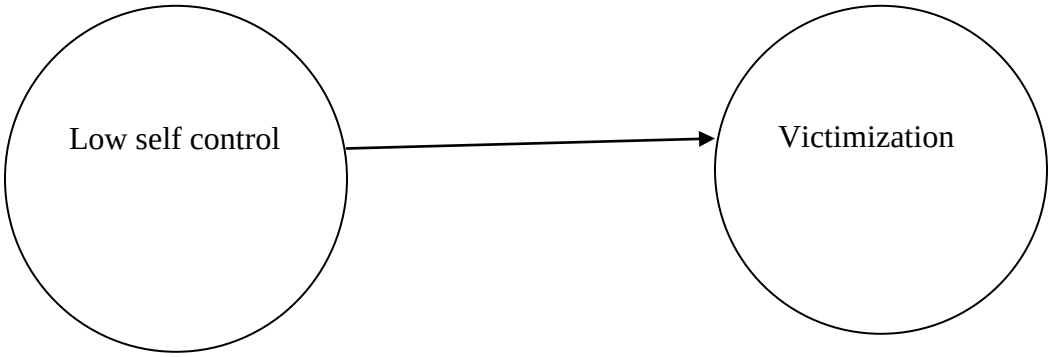
Fourth, people with low self-control prefer physical activities instead of contemplation or conversation. People who prefer physical activities may be less likely to mentally evaluate a dangerous situation and solutions to the problem at hand. These people may engage in physical violence which will increase their chances of victimization.

Fifth, people with low self-control will be insensitive to needs of others. These individuals are self-centered and are less likely to have social bonds with their neighbors or friends. As such, their guardianship and social support decreases and thus increases their chances for victimization. Gottfredson and Hirschi (1990) point out that people with low self-control have a hard time making and keeping friends. Their ability to create strong social bonds is weakened.

Finally, people with low self-control are poor in handling frustration and prefer to handle conflicts through confrontation. They are easily angered and show behaviors that can be seen as

hostile, belligerent, and antisocial. These behaviors can lead to victimization through a counter attack and thus a person can be both an offender and victim within a single physical altercation. A visual representation of the link between low self-control and victimization is presented in Figure 3.

Figure 3: A Visual Depiction of Low Self-Control and Victimization



Taken altogether, the similarities between criminals and victims suggest that victims may also contain low levels of self control (Nofziger, 2009). Specifically, the six characteristics of low self-control as stated by Gottfredson and Hirschi (1990) not only explain all forms of crime at all times, but also may explain criminal victimization as well (Schreck, 1999; Nofziger, 2009). As Schreck (1999) and Nofziger (2009) explain, people who are impulsive, short-sighted, physical, and risk-seeking may be more likely to participate in activities that are adventurous or outright dangerous without considering the potential negative consequences. Participating in these types of activities can expose potential victims to other potential offenders and may put them at a higher risk for criminal victimization. Furthermore, people with low self-control are easily angered and may react with force in stressful or unpleasant situations which can create confrontations with other individuals that may result in victimization. In addition, Stewart et al (2004) point out those self-centered or insensitive individuals may incite or provoke others which can increase the odds of physical retaliation against that person. It is obvious that threatening behavior could put that person at an increase risk of victimization. Therefore, it becomes clear that examining the amount to which victims are non-verbal, physical, short-sighted, risk-seeking, insensitive, or impulsive is key for determining whether low self-control is a risk factor associated with victimization.

Other Explanations for Violent Victimization

Routine Activities Theory, Deviant Lifestyles, and Victimization

The most popular explanation for criminal victimization is Cohen and Felson's (1979) routine activities theory. Also known as the *lifestyle theory of victimization*, this theoretical framework argues that the routine lifestyles of some individuals put them more at a risk than others for becoming crime victims. Routine activities theory stress that for victimization to occur, three elements must be present: there must be an attractive target (person or property), there must be a motive offender (the actual criminal), and there must be an absent "guardianship." When these three elements emerge at the same time, the possibility of victimization is said to increase significantly (Cohen and Felson, 1979). For example, a person highly intoxicated (attractive target) comes in contact with a stranger (motive offender) in an area where no one is around (lack of guardianship) increases their possibility of becoming a victim. Similarly, an owner of a liquor store (attractive target) who leaves his or her business unattended (lack of guardianship) will experience a robbery if a robber (motivated offender) happens to be there at the same time. Cohen and Felson (1979) argue that taking away any of these three elements decreases the chances of victimization. A sober individual, accompanied by a large group of friends, becomes an unattractive target to a motivated offender, which decreases the chances of victimization. Similarly, a store with security cameras or other protective devices becomes an unattractive target to a motivated offender, again decreasing the chances of a robbery.

Criminologists have also studied the way individuals' deviant lifestyle increases or decreases their chances of become a victim. Generally termed the *deviant lifestyles theory*, criminologists have found that individuals that spend a lot of time outside their homes, and spend time in bars or nightclubs, increase their chances of becoming a victim. Analyzing data collected from nine college campuses, Mustaine and Tewksbury (1998) reported that students who frequently ate outside generally reported higher rates of theft. More in line with deviant lifestyles theory, they also reported that students that smoked marijuana were more likely to report something stolen from them (Mustaine and Tewksbury, 1998). A bigger study using data collected from twelve college campuses echoed this finding. Fisher et al. (1998) reported that students that partied frequently were more likely to report violent victimization. Students who

reported smoking marijuana or frequent use of hashish/cocaine reported higher levels of victimization than non-smokers or users. Similarly, students who reported spending money on nonessential items reported higher levels of theft, suggesting that these items made them attractive targets to motivated offenders. Zavala (2010) found that those who were victimized as a result of their deviant lifestyles were less likely to report the incident to police compared to individuals who were randomly victimized. Presumably, those intoxicated or under the influence of some narcotic did not want to reveal their own criminal behavior to police (Zavala, 2010).

The Importance of Social Bond, Social Learning and Differential Association

Although Gottfredson and Hirschi (1990) argue that their theory is the only theory needed to explain criminal and deviant behaviors, other criminological theories have been proposed. In particularly, Hirschi's (1969) social bond, Akers' (1998) social learning, and Sutherland's (1947) differential association theories have gained prominence in the criminological literature (Akers and Sellers, 2009; Cao, 2004).

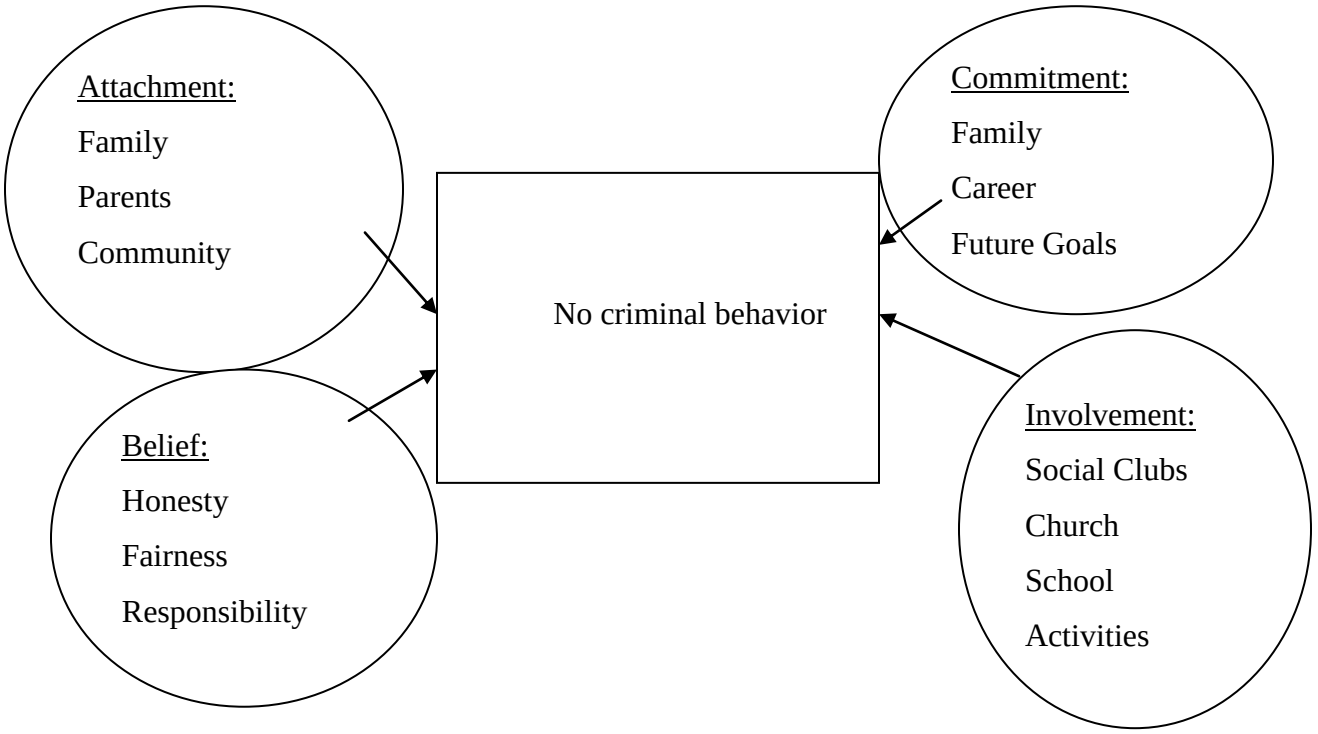
Hirschi's Social Bonding Theory

Criminologists taking the social control perspective argue that people should not be asking why people commit crime, but instead should be asking why everyone does not commit crime. Control theory assumes that everyone is capable of committing crime and no special motivation or learning is needed. In 1969, Hirschi formulated his social control theory. Hirschi (1969) argues that cause of criminal behavior lies in the *strength* of the relationship (social bonds) a child forms with conventional individuals or groups (the family, school, and other social institutions). If these social bonds are broken, individuals will be *free* to violate the law, and these individuals lack commitment to social norms (Hirschi, 1969). The heart of Hirschi's theory is that all people have the potential to commit crime because all crimes are pleasurable. Individuals will refrain from committing criminal and deviant behavior if they are kept in check by their social bonds to society. If the bonds are weakened, then people will be *free* to commit criminal and deviant behavior.

Hirschi's (1969) contends that an individual's social bond to society has four elements. These are *attachment, commitment involvement,* and *belief.* Attachment refers to the degree to which youths care about the opinions of their parents, teachers, and other significant others. The theory argues that youths with strong attachment to these individuals are less likely to commit

deviant and criminal behavior because he or she does not want to hurt or disappoint them. A youth refusing to participate in a criminal activity because he or she is afraid of what his or her parents might think or say exemplifies strong parental attachment. The chances that this person commits a criminal or deviant behavior decrease. A visual depiction of Hirschi's social bond is presented in Figure 4.

Figure 4: A Visual Depiction of Hirsch's Social Bond Theory



Commitment refers to the amount of importance youths place on conventional pursuits, such as getting good grades, achieving goals, or sustaining a good reputation. The more commitment an individual has in these senses, the more the individual has to lose if he or she breaks the law. The importance of conformity is encouraged by a general fear of losing what an individual already has or expects to acquire in the future. Youths with low commitment to conventional pursuits are more likely to commit criminal or deviant behavior, while youths with strong ambitions are less likely to commit crime.

Involvement refers to the amount of time a youth spends on conventional activities. The theory argues that youths who participate in school sports, religious activities, or participate in some community organization will find less to time to commit criminal or deviant behavior.

Youths whose time is occupied with these conventional activities will have no time to be delinquent.

Belief refers to the youth's perception of what is right or wrong. Youths who believe that criminal laws are to be obeyed are less likely to commit criminal or deviant behavior. In contrast, those who disagree with the law will violate them.

Numerous studies have been conducted by criminologists attempting to test the theory's proposition. While a number of studies have found relatively weak support for the theory's propositions (Agnew, 1985; 1991), the notion that youths with strong parental attachment, who indicated that they like their teachers, value their education, take part in school activities, and believe in the laws of society report lower levels of delinquency has been well supported (Krohn and Massey, 1980; Wiatrowski, Griswold, and Roberts, 1991; Wells and Rankin, 1988; Rankin and Kern, 1994; Krohn, Lanza-Kaduce, and Akers, 1982). It is generally expected that youths that have strong parental attachment, are committed to conventional pursuits, are involved in conventional activities, and believe on the acceptance of the laws of a society are less likely to be involved in criminal behavior.

Sutherland's Differential Association and Aker's Social Learning Theory

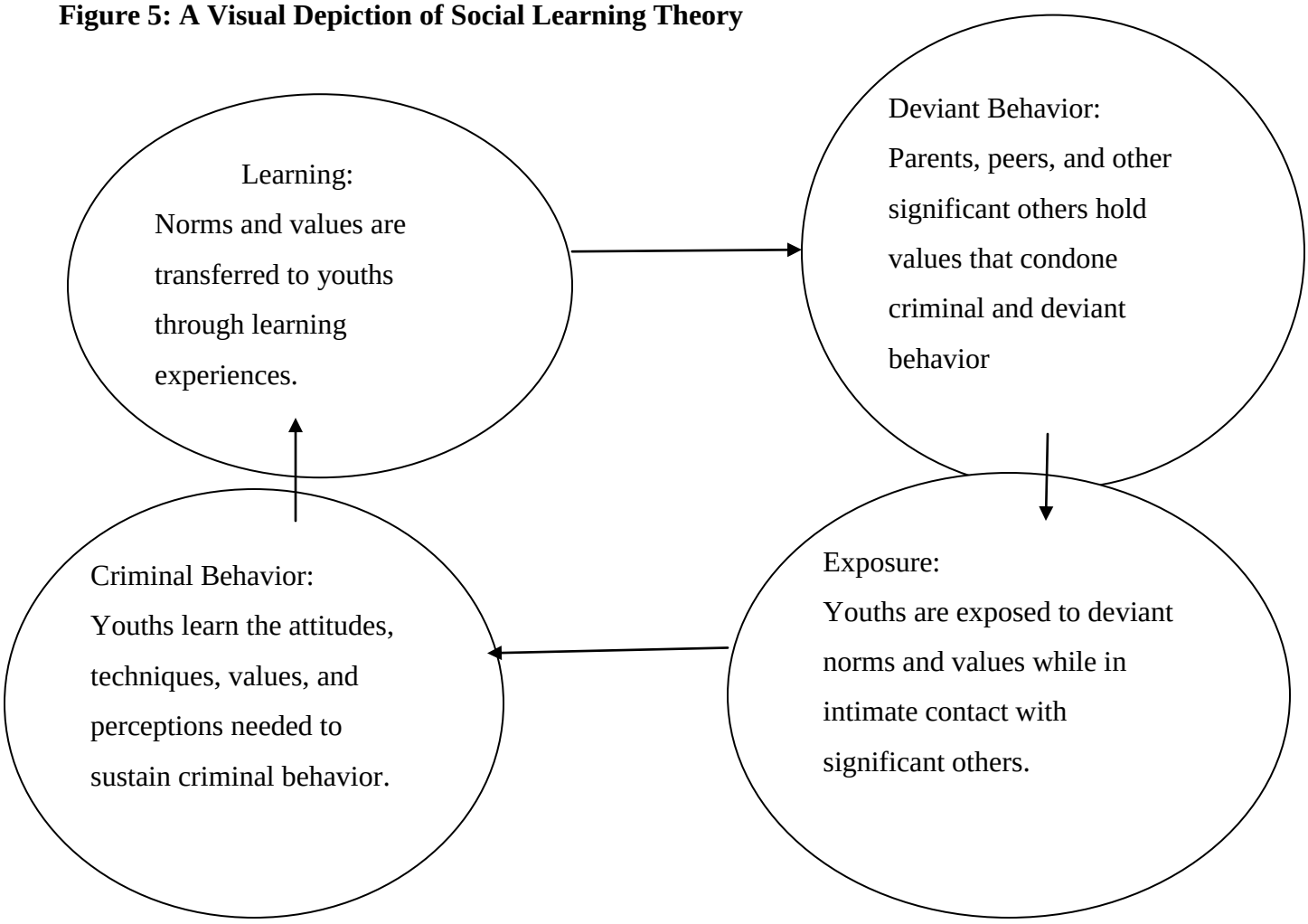
Criminologists taking the social learning perspective argue the criminal behavior is learned just like any other human behavior (Akers, 1998; Sutherland, 1947). Social learning theories hold that people (when they are little kids) learn to be criminal. Social learning involves the techniques of crime such as how to steal a car (Sutherland, 1947), the techniques to deal with the guilt (see, Sykes and Matza, 1957), and introduction to deviant behaviors such as underage drinking and smoking cigarettes (Akers, et al., 1979). The first social learning theory was proposed by Sutherland (1947) who stated that, when children are socialized, they are expose to (and learn) both pro-social and anti-social attitudes and behavior (Akers, 1998). Sutherland (1947) argued that if the pro-delinquency definitions children have learned outweigh the anti-delinquency definitions, children will be vulnerable to choosing criminal activity over conventional norms. Sutherland (1947) outlined nine propositions to his theory:

1. Criminal behavior is learned.
2. Criminal behavior is learned in interaction with other persons in a process of communication.

3. The principal part of the learning of criminal behavior occurs within intimate personal groups.
4. When criminal behavior is learned, the learning includes (a) techniques of committing the crime; and (b) the specific directions of motives, drive, rationalization, and attitudes.
5. The specific direction of motives and drive is learned from the definitions of the legal codes as favorable or unfavorable.
6. A person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of law.
7. Differential association may vary in frequency, duration, priority, and intensity
8. The process of learning criminal behavior by association with criminal and anti-criminal patterns involves all of the mechanisms that are involved in any other learning.
9. While criminal behavior is an expression of general needs and values, it is not explained by these general needs and values, since noncriminal behavior is an expression of the same needs and values.

Burgess and Akers (1966) later refined the theory and introduced the *differential association-reinforcement theory* (also see, Akers, 1998). They agreed with Sutherland (1947) that criminal behavior is learned, but argued that individuals continued their criminal behavior only if that behavior was reinforced and rewarded. Integrating *operant conditioning*, Burgess and Akers (1966) argued that when the rewards for criminal behavior outweigh the rewards for conventional behavior, differential reinforcement occurs, and criminal behavior is learned. Akers (1998) would later keep refining differential association theory by adding more operant and respondent conditioning. In particularly, Akers (1998) pointed out four elements that helped shape criminal behavior: *differential association, definitions, differential reinforcement,* and *imitation*. Differential association refers to the notion that youths will associate with individuals that will teach them definitions that are either favorable or unfavorable to the law. These two elements are processed in social interactions. Differential reinforcement is the process in which youths are either rewarded or punished for engaging in criminal behavior. If rewarded, the criminal behavior will continue. If punished, criminal behavior desists. Finally, imitation refers to the idea that youths can also see criminal behavior firsthand, which may encourage imitating that behavior, particularly if that behavior is positively reinforced. A visual depiction of Akers' social learning theory is shown in Figure 5.

Figure 5: A Visual Depiction of Social Learning Theory



In general, research on social learning theory has produced consistent support for the theory's main propositions (Sellers and Winfree, 1990; Akers and Lee, 1996; Winfree, Sellers, and Clason, 1993; Coa, 2004; Winfree, Mays, and Vigil-Backstrom, 1994; Warr, 2002; Winfree, Vigil-Backstrom, and Mays, 1994). People commit crime because they have learned to be criminals through the process described above (Akers and Sellers, 2009). In addition, studies that have compared the explanatory power of social learning theory to other criminal theories (competing models) have found that social learning models receive the most empirical support (Deschenes and Esbensen, 1999; Esbensen and Deschenes, 1998; but see Burton et al., 1994). With these studies in mind, it is generally expected that youths with no delinquent peers, peers that are involved in pro-social activities, or peers with positive commitment will be less likely to engage in criminal or deviant behavior and less likely to be victimized.

Who Joins Gangs? Factors Associated with Gang Membership

Historically, criminologists have looked at age, sex, race, and ethnicity to determine the characteristics of gang members. Traditionally, most street gangs are composed of males and early studies on gangs focused heavily on them (see Thrasher, 1927; Whyte, 1943). Although criminologists continue today to heavily focus on male gangs (Vigil, 1988; 2002), more recent studies have concentrated on either male and female gang members (Glover, Jennings and Tewksbury, 2009) or completely on female gangs (Miller, 1998; 2001; Miller and Decker, 2001). Recent research suggests that about one-third of gang members are females (Glover, Jennings and Tewksbury, 2009).

Traditionally, females have been involved in gang activities in generally three ways: as auxiliaries to male gangs, as members of sex-mixed gangs, or in autonomous gangs (see, Moore, 1991). Auxiliary gangs are a "feminized" version of male gangs. For example, the female members of the Los Angeles all male street gang the "Devil's Disciples" are named the "Lady Disciples of the Devil's Disciples." These are two distinct groups forming one large street gang. In other gangs, both male and female members are integrated into the same gang with no such distinction. In these sex-mixed gangs, females are invited or recruited to join in order to fight other sex-mixed gangs. It is generally unacceptable for male members to personally attack rival female members. Female members of the gang are given that task. Autonomous gangs are made up solely of female members. Some research has indicated that these types of gangs are gaining popularity among female members (Moore, 1991; Campbell, 1984; Curry, 1998).

Whether females join gangs for the same reasons as males has also be documented by criminologists. Some research has documented that females join street gangs in order to establish a sense of sisterhood, independence, and solidarity (Diaz-Cotto, 2006). Once inside the gang, some women reported feeling more empowered, trustworthy, and a stronger sense of courage. Other studies show that females are forced to join where they are later sexually exploited by male members (Laidler and Hunt, 1997). Interviewing Latinas incarcerated in prison, Diaz-Cotto (2006) found that some of these women were being re-victimized. Many women reported being sexually and physically abused at home, and joining a gang increased their frequency of violent victimization by being attacked by other rival gang members. Regardless of the reasons why females join gangs, research has indicated that female gangs are less violent than male gangs, and are more likely to commit theft (Curry, 1998). Such pattern

has suggested that females are more concern about improving their social status rather than simply committing violent offenses for trivial reasons. The number of female gang members is rising. Results from the GREAT evaluation project indicated that about 40 percent of gang members were females (Esensen, 1998). However, it should be noted that many police agencies could underreport female gang membership, and the true number of female gang membership could be higher than reported (Curry, 1998).

No demographic factors in gang research have received more empirical attention than race and ethnicity. Research examining specific racial or ethnic gangs have included Blacks (Cureton, 2002), Asians (Tsunokai and Kposowa, 2002), and Hispanics (Vigil, 1998; 2002). Traditionally, whites are less likely than Blacks or Hispanics to join gangs. However, research from the *G*ang *R*esistance *E*ducation and *T*raining (GREAT) project indicated that the composition of gangs across the U.S. was very similar across racial and ethnic groups with similar percentages of whites (25%), Blacks (31%), and Hispanics (25%) indicating they were currently in a gang. In contrast, much smaller percentages of Asians (5%) and "other" racial groups (15%) indicated they were in a gang (Esbensen and Winfree, 1998).

Explaining Gang Formation

Criminologists have traditionally used social disorganization and socio-cultural views to explain gang membership. Social disorganization posits that gangs are products of the social forces found in inner-city, low income areas, such as poverty, racism, high social mobility, and low social integration. Once formed, these gangs create a subculture in which unique set of values are established that collide with those of the mainstream. Early criminological work viewed the destructive socio-cultural forces in socially disorganized inner cites as the cause of gang formation. Pioneer studies have documented that the vast majority of youths who joined gangs came from dysfunctional families, family members with criminal records, and lacked education and positive role models (Cloward and Ohlin, 1960; Thrasher, 1927; Cohen, 1955, Vigil, 1988, 2002). These youths are pushed to join street gangs because of poverty, and gangs served as a mean to obtain personal reputations, peer group status, income, and other conventional norms. In addition to economic deprivations, Vigil (1988) also found that youths joined gangs to seek a sense of belonging, with some youths joining because of their desire to have a family-like relationship with other gang peers. This is especially true in female gangs

(Laider and Hunt, 1997). Laider and Hunt (1997) found that some females join gangs to obtain that family atmosphere that is largely absent in their lives. These females reported that they have limited or no-contact with their mothers or fathers, and gang membership provided that family-structure (Laider and Hunt, 1997). In general, social disorganization and socio-cultural views argue that gangs are a natural and normal response to poverty. Gangs help members achieve personal aspirations that cannot be realized through otherwise normal means.

Other criminologists have proposed a psychological view of gang formation. Klein (1995) found that the majority of gang members in some of Los Angeles' street gangs suffered from psychological and neuropsychological deficits. The youths reported problems with low self-concept, social disabilities, and low social skills. These youths displayed violent temperaments and showed early signs of antisocial behaviors. Klein (1995) reported that these behaviors are signs for later gang membership.

Yet, other criminologists have argued that youths join gangs only after careful consideration (Padilla, 1996; Sanchez-Jankowski, 1991). Some youths join gangs only after they have come to the conclusion that gang membership will benefit them in achieving a law-violating career or because it will provide a source of income. Studying a Latino gang in Chicago, Padilla (1996) found that joining a gang was a decision made only after carefully considering the economic opportunities presented to them by joining. Similar to the early gang studies, these members saw gang membership as an opportunity to achieve personal income when legitimate means were not available to them (Padilla, 1996). Sanchez-Jankowski (1991) also reported that youths joined gangs for protection, a decision made through careful consideration. This is especially true if joining a gang is motivated by interracial conflict. Minority youths may chose to join a gang if they reside in the community dominated by a particular racial or ethnic group. Joining a gang similar to their racial or ethnic group can create a sense of protection. Finally, other studies have found that youths join gangs simply because they want to have fun and party with youths their own age (Spergel, 1995). A street gang provides such an outlet.

Factors Associated with Committing Crime and Becoming the Victim

There is a strong relationship between gang membership and committing crime or delinquency (Battin et al. 1998; Bjerregaard, 2002; Curry, Decker, and Egley, 2002; Decker,

1996). In addition, research has already established that crime perpetration can lead to criminal victimization (Lauritsen, Sampson, and Laub, 1991). These two different bodies of literature, therefore, suggest that the same demographic variables used to explain gang memberships can also explain criminal victimization and criminal perpetration. It is no surprise that the same characteristics of age, sex, race, and ethnicity are examined with regard to crime and victimization. For example, it is well established that males are more likely to come in contact with the police, more likely to be arrested and jailed, and more likely to be sentenced to prison for criminal behavior than females (Durose, Smith, and Langan, 2007; Durose and Langan, 2007; Sabol, Couture, and Harrison, 2007). Although males are more likely to commit crime, both males and females report being the victims of sex-specific crimes. Whereas males are more likely to be victims of street muggings, robbery, and stranger/aggravated assaults, females are more likely to be victims of rape, stalking, sexual harassment, and intimate partner violence (Dugan and Apel, 2003).

Past research has also established a strong pattern of findings in regard to criminal perpetration and victimization along difference racial and ethnic groups. Numerous studies, analyzing data from the *National Crime Victimization Survey*, have indicated that whites are less likely than Blacks to be victims of robbery, assaults, and theft. In addition, Hispanics are less likely than Blacks to be victims of the same crimes.

Sex and Its Association with Criminal Behavior and Victimization

It has been historically true that males are more likely to commit crime than are females. Furthermore, with a few exceptions, males tend to be victimized more often than females. Whether criminologists look at self-reported data (*National Crime Victimization Survey*) or official statistics (*Uniform Crime Report*) studies constantly shows that men commit (and are arrested more) than women. For example, analyzing data from the *National Crime Victimization Survey* and the *Uniform Crime Reports*, Steffensmeier et al., (2006) found that men were more likely than women to be arrested for violent crimes such as assault, rape, and homicide. When looking specifically at juvenile delinquency, females are more likely than boys to be handed over to juvenile court for status offenses, such as running away (Chesney-Lind, 1989; Chesney-Lind and Eliason, 2006).

Explaining why males commit more crime and why they are victimized more often than females has been approached in different ways. First, some scholars have offered a different socialization perspective (Chesney-Lind, 1989). Under this perspective, scholars have argued that parents socialize boys and girls differently. Whereas parents teach their boys to be strong, aggressive, and dominant, they also teach their girls to be gentle, less aggressive, and nurturing (Smart, 1978). Since being tough and aggressive are elements conducive to criminal behavior, men are more likely than females to fight and commit crime. Thus, they are arrested more for these types of offenses.

Second, other scholars argue that women have different opportunities than men to commit crime (Heimer and De Coster, 1999). Parents have traditionally monitored their daughters more closely than their sons. As such, boys have greater opportunities to commit crime. Heimer and De Coster (1999) argue that women are less likely to learn definitions favorable to law breaking than males; therefore they commit less crime. This explanation can also explain why males are victimized more often than females. Simply put, males have a better opportunity to be victims. Third, those taking the social control perspective have pointed out the degree to which boys and girls are attached to conventional norms such as school and to their parents. Because of socialization, girls are more likely than boys to be attached to parents and other conventional goals, which will inhibit them from committing crime and/or become victims. Hope and Chapple (2005) determined that girls indeed had stronger social ties to conventional norms than boys. These forms of attachment then reduce the likelihood for women to commit crime (Hope and Chapple, 2005). Finally, Mears, Ploeger, and Warr (1998) found that peer influences matter less to girls than to boys. The authors reasoned that because girls are more likely than boys to have strong attachment to their parents and other social institutions, girls are less vulnerable to negative peer influence, which decreases the odds of girls committing crime (Mears, Ploeger, and Warr, 1998) and presumably decreases their chances of violent victimization.

To truly understand women's offending and victimization, several criminologists have argued that the context in which women commit crime must be examined. Girls are more likely to be arrested for status offenses such as running away from home. Chesney-Lind (1989) reported that the vast majority of these girls were running away from abusive families. Conducting interviews with girls who have been transferred to adult court, Gaarder and Belknap

(2002) found that these women were victims of sexual abuse, sexism, and chemical dependency. Most of these girls committed crimes to escape abusive families. Leonard (2002) interviewed women who were arrested and convicted of killing their husbands. She found that these women had a history of spousal abuse, and their chronic maltreatment ultimately led to their husbands' homicide (almost all women killed their abusive husbands in self-defense). Finally, Chesney-Lind and Eliason (2006) report that woman who step outside traditional feminine roles are harshly punished by the criminal justice system; showing that a backlash exist in the criminal justice when it comes to protecting traditional gender roles.

Gang Members and Committing Crime

It has been well established that gang membership leads to criminal behavior (Thornberry et al., 2003). Self identified gang members report more criminal activities such as theft, drive-by shootings, homicide, and drug dealing than non-gang members (Huff, 1998). This has been historically true. Regardless of the methodological approach used, from the observational method (Miller, 1966; Vigil, 1988), to the use official statistics (Maxson and Klein, 1990), personal interviews (Decker and Van Winkle, 1996), and survey data (Thornberry et al. 1993), juveniles in gangs have been found to commit more crimes than youths not in gangs. However, despite this strong link between gang membership and crime perpetration, rarely do criminologists attempt to explain this phenomenon other than to report gang membership is associated with criminal activity. Thornberry et al. (1993) offer three explanations as to why gang members commit crime: selection model, social facilitation model, and the enhancement model. The selection model argues that youth with criminal tendencies prior to joining a gang will be attracted to gangs because of a common interest in criminal activity. The facilitation model argues that gang membership increases the odds of committing crime given group dynamics. The final model, the enhancement model, argues that once a youth with an already high tendency to commit crime joins a gang, and continues to exhibit a high level of interest in coming crime, the youth will continue to commit crime due to the influence of the gang (Thornberry et al., 2003). A series of test have been carried out to test these models. Analyzing data from the *Rochester Youth Development Study*, Thornberry and his colleagues reported no significant differences between gang members and non-gang members regarding criminal behavior before joining a gang. However, criminal activity increased once a youth joined a

gang. This finding provides support for the facilitation model as a good explanation for the gang membership/criminal activity link (Thornberry et al., 1993; 2003). A more recent study by Gordon et al. (2004) analyzed data from the *Pittsburg Youth Study* and found greater support for the selection model compared to Thornberry et al. (1993). Overall, the facilitation model has been most strongly supported by studies examining the gang memberships/criminal activity link (Gordon et al., 2004).

Gang Membership and Violent Victimization

Although a strong body of literature has documented the relationship between gang membership and criminal activity, the body of literature between gang membership and violent victimization is beginning to grow (Taylor et al., 2007). Several studies have indicated that people who commit crime are also likely to be victimized by crime (Schreck, 1999). With this in mind, gang members are not only more likely to commit crime, but are at greater odds to be victimized by crime. Taylor et al. (2007) point out that gang members are at greater odds for victimization because of their involvement in the use and sale of illicit drugs, the ever present danger of violent retaliation from rival gangs, and the increased odds of violence from members of their own gang.

Both qualitative and quantitative studies have been carried out to examine the link between gang membership and violent victimization. Not surprisingly, both types of research offer mixed results. However, the majority of studies show a strong association between gang membership and violent victimization. For example, in interviewing active gang members, Decker and Van Winkle (1996) found that the most common source of victimization came from within their own gang. Such violent victimization came in the form of initiation rituals or punishment (i.e. being jumped in). These gang members also reported being victimized by other rival street gangs (i.e. fights with rivals and drive-bys). Other forms of victimization have also been reported in the literature. Joe and Chesney-Lind (1995) interviewed both male and female gang members. These gang members describe violent victimization in the form of child maltreatment and sexual assault by their own family members. Highlighting the importance of victimization and gender, Miller (1998) found that female gang members use their gender to protect themselves from violence with other gangs. However, Miller (1998) notes that male

gang members see female gang members as weak. As a result, they are subject to different forms of victimization.

By and large, the vast majority of studies testing the link between gang membership and violent victimization have been quantitative studies; and, these studies have shown a strong link between the two. Peterson, Taylor, and Esbensen (2004) reported that gang members were more likely to be victimized than non-gang members. Taylor et al. (2007), using a sample of 8th graders, reported that the gang members were both more likely and more frequently victimized by crime compared to non-gang members. Using survey data from 4,500 high school students, Gover et al. (2009) reported that gang members are more likely to experience dating violence, sexual assaults, and violent victimization than non-gang members.

Putting Everything Together: Hypotheses Formation

Gottfredson and Hirschi (1990) argue that self-control is the barrier that stands between the individual and criminal/deviant behavior; and, it measures the person's ability to refrain from short-term gratification through considering the long-term negative consequences of that criminal/deviant behavior. Individuals that possess low self-control are less likely to think about the negative consequences and should be more likely to submit to deviant acts that produce short-term pleasures. Although the authors do not provide any evidence nor cite any research, Gottfredson and Hirschi (1990) spell out six elements that they argue represent the nature of criminal/deviant behavior, as well as an indication of a person's level of self-control. These six elements or human characteristics are said to coalesce in people with low self-control. All criminal and deviant behavior, they argue, can be explained by low self-control. Although a large body of studies has supported the link between low-self control and criminal/deviant behavior, a growing body of literature has suggested that low self-control can also explain violent victimization. However, whether low self-control can explain criminal behavior and violent victimization within a gang context remains unknown. Criminologists have a long tradition in studying gangs. With a few exceptions (i.e. Thornberry et al., 1993), few criminologists have attempted to apply sociological theory in explaining membership, criminal activity, and violent victimization within a gang context.

The current study tests several hypotheses that have been suggested by the literature review above. In addition, the literature reviewed also implies the potential for several

interaction effects involving sex differences between males and females. Therefore, the following hypotheses are will be tested.

H_1: Parental attachment is positively related to the degree of self-control.

H_2: Male juveniles will have lower self-control than female juveniles.

H_3: The degree of self-control will be negatively related to participation in criminal activities.

H_{3a}: Sex will interact with self-control in influencing participation in criminal activities.

H_4: Gang members will be more likely to participate in criminal activities.

H_{4a}: Sex will interact with gang membership in influencing participation in criminal activities.

H_5: Juveniles with low self-control will be more likely to be gang members.

H_{5a}: Sex will interact with self-control in influencing gang membership.

H_6: The degree of self-control will be negatively related to being a victim of violence.

H_{6a}: Sex will interact with self-control in influencing whether a juvenile is a victim of violence.

H_7: Male juveniles will report more incidents of violent victimization than female juveniles.

H_8: Gang members will report more incidents of violent victimization than non-gang members.

H_{8a}: Sex will interact with gang membership in influencing whether a juvenile is a victim of violence.

Furthermore, the literature review also suggests several hypotheses concerning the alternative theoretical perspectives above.

H_9: Association with delinquent peers is positively associated with criminal activities.

H_{10}: Strong social bonds are negatively related with criminal activities.

Given these hypotheses, in general, a juvenile's degree of self-control should be negatively related to criminal perpetration, violent victimization, and gang membership. At this point, it is important to note that the independent and dependent variables change, depending on what is being tested.

Conducting this study will expand the literature on criminal perpetration and violent victimization in at least two ways. First, this study specifically tests the low self-control criminal perpetration/violent victimization link with a gang framework. Numerous studies have been carried out demonstrating that gang membership increases both criminal perpetration and violent victimization. However, rarely have criminologists applied criminological theories to explain this phenomenon, both in terms of criminal perpetration and violent victimization. Second, although some studies have shown that low self-control contributes to victimization, these

studies have been mostly experimental, with samples ranging from college students to high school youths in one geographic location. This study provides another test using a multistate, multisite dataset to further explore the theory's explanatory power beyond convenience samples.

CHAPTER 3 - Research Methods

Data

Data for the current study comes from the *Evaluation of the Gang Resistance Education and Training (GREAT) Program in the United States, 1995-1999* (see Esbensen and Winfree, 1998). GREAT is a gang prevention program in which trained police officers in various cities conduct a nine-session classroom instructional program to middle school students informing them about the dangers of joining gangs and involvement in gang activities. A survey is also conducted that contains questions regarding gang activity in the students' schools, neighborhoods, and their communities, as well as their own involvement in criminal activities such as taking illegal drugs, shop lifting, and other criminal behavior (including their own violent victimization). In addition, questions regarding the students' family structure and their relationship with their parents were asked. This multisite, multistate cross-sectional survey was completed during the spring of 1995 and was administered to eighth-grade students, teachers, law enforcement officials, and parents. Using records provided by the agency overseeing the GREAT program (Bureau of Alcohol, Tobacco, and Firearms), the primary investigators selected cities that had one or more police officers certified to conduct GREAT classes prior to January 1994. To ensure geographic and demographic diversity, certain cities were excluded from consideration. With these two criteria in mind, a total of eleven cities were chosen to conduct the survey. These eleven cities are: Torrance, California; Pocatello, Idaho; Providence, Rhode Island; Will County, Illinois; Orlando, Florida; Milwaukee, Wisconsin; Kansas City, Missouri; Philadelphia, Pennsylvania; Phoenix, Arizona; Omaha, Nebraska; and Las Cruces, New Mexico. In these selected cities, only schools that offered the GREAT program in the previous two years were selected. Self-administrated questionnaires were handed out to all eighth graders who investigators were able to obtain parental consent at the day of the survey. This sampling technique yielded 5,935 eighth-grade students encompassing 315 classrooms in 42 different middle schools. The attendance rate for the day in which the survey was administered varied from a low of 75% to a high of 93%.

At this point, it is necessary to point out the limitations that plague most of school-based surveys and, this dataset is no exception. First, the current study did not capture private schools

and, therefore, it excludes private-school students. Second, the survey did not capture students that were sick, truant, or otherwise absent on the day of the survey. Third, there is always the possibility of potentially under-representing high-risk youths such as the homeless, those confined in juvenile detention centers, and those in the custody of Child Protective Services. Fourth, because the primary investigators set out to evaluate the GREAT program, the research collection becomes purposive rather than a random study. Generalizations cannot be extended to the youth population as a whole. Finally, as is the case with all cross-sectional studies, it is not possible to definitely establish the temporal ordering (concluding the cause) of study variables. The current study is, therefore, restricted in only discussing the correlates of low self-control and criminal victimization, criminal activity, and gang membership.

Sample

With the limitations in mind, the data is made up of almost all eighth-grade students in attendance on the day the survey was handed out. The eleven selected cities represent different types of communities that include large urban cities with a majority of students belonging to a racial minority (Philadelphia, Phoenix, Milwaukee, and Kansas City), cities that have a population between 100,000 and 500,000 with racial/ethnic heterogeneity (Providence and Orlando), cities predominately white, but with a visible minority population (Omaha and Torrance), a city with less than 100,000 inhabitant, but with racially/ethnically diverse population (Las Cruces), and a city (Pocatello) and one small rural community (Will County) that are both racially homogeneous (i.e. white).

The Measurements of Variables Used in the Analysis

Criminal Activity

An array of questions measuring respondents' criminal activity was asked. In particularly, each respondent was asked about criminal activities regarding property offenses, personal offenses, illicit drug sales, and illicit drug usage. Concerning *property offenses*, respondents were asked if they have ever "Stole or tried to steal something worth less than $50.00," "Stole or tried to steal something worth something worth more than $50.00," "Went into or tried to go into a building to steal something," and "Stole or tried to steal a motor vehicle." Respondents were allowed to answer either 1=Yes or 0=No to all of these questions.

If a respondents answered "yes" to any of the four questions above they were coded as 1=committed property offenses. Those who did not were coded 0=not commit property offenses.

Concerning *personal offenses*, respondents were asked if they have ever "Hit someone with the idea of hurting them," "Attacked someone with a weapon," "Used a weapon or force to get money or other things," and "Shot at someone because you were told to by someone." Respondents were allowed to answer either 1=Yes or 0=No to all of these questions. If a respondent answered "yes" to any of the four questions above they were coded as 1=committed a personal offense. Those who did not were coded 0=did not commit a personal offense.

Concerning *illicit drug sales*, respondents were asked if they have ever "Sold marijuana," and "Sold other illegal drugs such as heroin, cocaine, crack, or LSD." Respondents were allowed to answer either 1=Yes or 0=No to all of these questions. If a respondent answered "yes" to any of the two questions above they were coded as 1=sold illicit drugs. Those who did not were coded as 0=did not sell illicit drugs.

Finally, concerning *illicit drug usage*, respondents were asked if they have ever "Used tobacco products," "Used alcohol," "Used marijuana," "Paint, glue, or other things you inhale to get high," and "Used other illegal drugs." Respondents were allowed to answer either 1=Yes or 0=No to all of these questions. If a respondent answered "yes" to any of the questions above they were coded as 1=used illicit drugs. Those who did not were coded as 0=did not use illicit drugs.

It is important to note that respondents were asked to recall their experience with both violent victimization and criminal perpetration. Asking respondents to recall past events run into the problem of memory decay. While this is a limitation for any cross-sectional study asking respondents to recall certain past events, research has demonstrated that respondents can recall salient events (such as violent victimization) although precise details may still be fuzzy (Henry et al., 1994).

Violent Victimization

Violent victimization captures whether the respondent has ever been the victim of a violent crime. Three questions were asked to measure violent victimization in the current survey. In particularly, respondents were asked, "Have any of the following things ever happened to you:" "Have you ever been hit by someone trying to hurt you?" "Had someone use a weapon or force to get money or things from you?" and "Been attacked by someone with a weapon or by

someone trying to seriously hurt or kill you?" Respondents were allowed to answer either 1=Yes or 0=No for all three questions. *Serious victimization* was created by combining the last two questions. If respondents answered "yes" to any of the last two questions they were coded as 1= seriously victimized. Those who did not experience any of the types of serious victimization were coded as 0=not seriously victimized. *Minor victimization* was coded 1=Yes if the respondents answered yes to the first question, and 0=No if they indicated no.

Gang Membership

Gang membership was determined by asking respondents to self-identify themselves as gang members. As is the case with most social phenomenon, definitional issues arise (Esbensen et al., 2001). Asking youths to identify themselves as gang members adheres to law enforcement criterion for identifying "official" gang members. That is, in many law enforcement agencies, a gang member is a gang member if only he or she says they are. To capture gang members, the investigators asked respondents: "Are you in a gang now?" Respondents were allowed to answer either 1=Yes and 0=No. Those who answered "yes" are considered current gang members.

At this point, it is necessary to point out the measurement limitations of the current study. For example, gang membership relies heavily on self-identification as opposed to official recognition by law enforcement or by the actual gang itself. This may become a problem as respondents may potentially deny their gang membership or, otherwise, allow non-gang members to claim membership in order to claim status. Therefore, there is the possibility of underreporting or over-reporting gang membership. However, self-identification can be the most valid method for determining gang membership since many law enforcement agencies classify gang members as such only when the respondents claims to be in a gang (Ruddell, Decker, and Egley, 2006).

In addition to these primary variables of interest, variables from competing theories will be statistically controlled because prior research has demonstrated that these key risk factors are correlated with criminal behavior and violent victimization. These variables include negative peer commitment (social learning/differential association theory), positive peer commitment (social learning/differential association theory), pro-social peer involvement (social learning/differential association theory), delinquent peers (social learning/differential association theory), unsupervised leisure time, and the availability of alcohol and/or drugs (Agnew and

Peterson, 1989; Osgood et al. 1996; Osgood and Anderson, 2004; Maimon and Browning, 2010; Anderson and Hughes, 2009).

Negative Peer Commitment

To measure negative peer commitment, the primary investigators asked respondents how likely they were to hang around with their group friends if they exhibit bad behavior. In particularly, the respondents were asked three questions: "If your group of friends was getting into trouble at home, how likely is it that you would still hang out with them?" "If your group of friends was getting into trouble at school, how likely is it that you would still hang out with them?" and "If your group of friends was getting into trouble with the police, how likely is it that you would still hang out with them?" Respondents were allowed to answer by indicating 1) Not at all likely; 2) A little likely; 3) Somewhat likely; 4) likely; and 5) very likely. Scores on these questions were added together to form an index of negative peer commitment. A reliability analysis revealed a Cronbach's alpha of .84. Furthermore, it also indicated that removing any of the variables from the index wound not significantly increase the alpha level, indicating that the index has an acceptable degree of reliability. Scores range from 3 to 15 with higher scores indicating greater levels of commitment to negative peers.

Positive Peer Commitment

To measure positive peer commitment, respondents were asked two questions tapping into their likelihood they would listen to their group of friends if they were committing some criminal or deviant act. In particularly, respondents were asked: "If your friends told you NOT to do something because it was against the law, how likely is it that you would listen to them?" and "If your friends told you NOT to do something because it was wrong, how likely is it that you would listen to them?" Respondents were allowed to answer by indicating 1) Not at all likely; 2) A little likely; 3) Somewhat likely; 4) likely; and 5) very likely. These questions were added together to form the respondents' positive peer commitment. A reliability analysis revealed a Cronbach's alpha of .77. Scores range from 2 to 10 with higher scores indicating greater levels of commitment to positive peers.

Pro-Social Peer Involvement

To measure pro-social peer involvement, respondents were asked the types of activities in which their friends were more likely to engage. These are activities that would serve to protect respondents from victimization. In particularly, respondents were asked how many of their current friends: "Have been involved in school activities or school athletics?" "Got along well with teachers and adults at school?" "Have been thought of as good students?" "Have been involved in community activities such as scouts, athletic league, or others?" "Have been regularly involved in religious activities?" "Regularly took part in theory own family activities?" "Have been generally honest and told the truth?" and "Almost always obeyed school rules?" Respondents were allowed to answer by indicating 1) none of them; 2) few of them; 3) half of them; 4) most of them; 5) all of them. These questions were added together to form the respondents' level of involvement with peers who engage in pro-social activities. A reliability analysis revealed a Cronbach's alpha of .84. Furthermore, it also indicated that removing any of the variables from the index wound not significantly increase the alpha level, indicating that the index has an acceptable degree of reliability. Scores range from 8 to 40 with higher scores indicating greater levels of involvement with peers in pro-social activities

Delinquent Peers

To measure association with delinquent peers, respondents were asked how many of their current friends have committed various forms of criminal and deviant acts. In particularly, the respondents were asked how many of their current friends: "Skipped school without an excuse?" "Lied, disobeyed, or talked back to adults such as parents, teachers, or others?" "Purposely damaged or destroyed property that did not belong to them?" "Stolen something worth less than $50.00?" "Stolen something worth more than $50.00?" "Gone into or tried to go to a building to steal something?" "Stolen or tried to steal a motor vehicle?" "Hit someone with the idea of hurting them?" "Attacked someone with a weapon?" "Used a weapon or force to get money or things from people?" "Sold marijuana?" "Sold illegal drugs such as heroin, cocaine, crack or LSD?" 'Used tobacco products?" "Used alcohol?" "Used marijuana?" "Used other illegal drugs such as heroin, cocaine, crack or LSD?" Respondents were allowed to answer by indicating 1) none of them; 2) few of them; 3) half of them; 4) most of them; and 5) all of them. A reliability analysis revealed a Cronbach's alpha of .94. Furthermore, it also indicated that removing any of the variables from the index wound not significantly increase the alpha level,

indicating that the index has an acceptable degree of reliability. Scores range from 16 to 80 with higher scores indicating greater levels of involvement with peers who engage in delinquent behaviors.

Parental Attachment

To measure parental attachment, several questions were asked to measure the level of social bond a respondent had with his/her parents. Respondents were allowed to answer six ordinal measures of both mother/mother-figure and father/father-figure attachments. These six measures included "Can talk to mother/father about anything," "mother/father trusts you," "mother/father know your friends," "mother/father understands you," "ask for mother/father advice," "mother/father praises me." Respondents were told to indicate the level of bonding using a index from 1 to 7, where scores of 1 indicate low levels of attachment and 7 indicating high levels of attachment. These questions were added together to form the child's mother and father attachment index (one for their mother/mother-figure and another one for their father/father-figure). A reliability analysis revealed a Cronbach's alpha of .84 for the *mother/mother-figure attachment* and a Cronbach's alpha of .88 for the *father/father-figure attachment.* The reliability assessment analyses indicated that removing any of the variables from either index wound not significantly increase the alpha level, indicating that the index have an acceptable degree of reliability. Scores range from 6 to 42 on each index with higher scores indicating higher attachment to a parent.

Self-Control

To measure low-self control, the primary investigators utilized the self-control index developed by Grasmick et al. (1993) to measure impulsivity and risk-taking behaviors. In particularly, students were asked eight questions that tap into their risking-taking and impulsivity nature: "I often act on the spur of the moment without stopping to think." "I don't devote much thought and effort to preparing for the future." "I often do whatever brings me pleasure here and now, even at the cost of some distant goal." "I'm more concerned with what happens to me in the short run than in the long run." "I like to test myself every now and then by doing something a little risky." "Sometimes I will take a risk just for the fun of it." "I sometimes find it exciting to do things for which I might get in trouble" and, "Excitement and adventure are more important to me than security." Respondents were allowed to answer each question by indicating whether

they agreed or disagreed with each statement on a 5-point Likert scale (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, and 5=strongly agree). All items were coded so that a higher score indicated a higher level of self-control. Scores on the eight questions were then summed together to form the respondent's self-control index. A reliability analysis revealed a Cronbach's alpha of .80 and that removing any of the variables from the index would not significantly increase the alpha level. This indicates that the index has an acceptable degree of reliability. Scores on the index range from 8 to 40 with higher scores on the measure indicating higher levels of self-control.

Perhaps no part of the theory has generated more debate than the actual measurement of self-control (Akers, 1991; Grasmick et al., 1993; Delisi, Hochstetler, and Murphy, 2003; Longshore, Turner, and Stein, 1996; Piquero and Rosay, 1998; Longshore, Stein, and Turner, 1998; Higgins, 2007; Marcus, 2003; 2004; Ward, et al., 2010; Hirschi and Gottfredson, 1993). Because Gottfredson and Hirschi (1990) did not originally specify how to measure self-control, the development of methods to measure the concept has been left to other researchers (but see, Hirschi and Gottfredson, 1993). While the Grasmick et al., (1993) index is the most widely used measure of self-control (Pratt and Cullen, 2000), the index has been criticized (Marcus, 2003, 2004). In particular, the index's attitudinal nature fails to capture the behavioral dimension of low self-control (Marcus, 2003; 2004). Behavioral measures of self-control have been preferred by some researchers (Hirschi and Gottfredson, 1993; Marcus, 2003; 2004).

However, not all criminologists agree that using such measures is indeed the best way to test the theory. Those rejecting behavioral measures of self-control levy the charge of tautology because most behavioral measures are criminal or deviant acts themselves (Akers, 1991). If low self-control is a cause of crime and it is measured by participation in criminal acts, then low self-control is being used to explain low self-control (Akers, 1991). While other indexes have been produced by criminologists claiming to solve this problem (i.e. Marcus 2003; 2004), the primary investigators utilized Grasmick's et al., (1993) self-control index. The debate whether which is the best way to capture or measuring self-control will surely continue (see Ward et al., 2010). Nevertheless, Grasmick's et al., (1993) index continues to be used, and numerous studies have demonstrated that the index is a valid and reliable measure of self-control (Piquero and Tibbetts, 1996; Piquero and Rosay, 1998; Arneklev et al. 1999; Longshore, Turner, and Stein, 1996).

Control Variables

Sex

Sex is coded 1=male and 0=female

Age

Age was coded in years.

Race and Ethnicity

Race and ethnicity was measure using five dummy variables. *White* was coded 1 for respondents who self-identified themselves as white and 0 otherwise. *African-American* was coded 1 for respondents who self-identified themselves as African-American and 0 otherwise. *Hispanic* was coded 1 for respondents who self-identified themselves as Hispanic and 0 otherwise. *Asian* was coded 1 for respondents who self-identified themselves as Asian and 0 otherwise. *Other* was coded 1 for respondents who self-identified themselves as mixed or American Indian, and 0 otherwise. Other will serve as the reference group once the race/ethnicity variables are entered into statistical models.

Family Structure

Family composition was measured using several dummy variables. The primary investigators asked respondents whether they were currently living with their mother-only, father-only, with their biological parents, or other. In the current study, *intact family* is coded 1 if the respondent currently lives with both of his or her biological parents and 0 otherwise. *Mother-only* is coded 1 if the respondent lives with his or her mother only and 0 otherwise. *Father-only* is coded 1 if the respondent lives only with his or her father only and 0 otherwise. *Other* is coded 1 if the respondent lives with another adult not their biological mother or father (grandparents) and 0 otherwise. Other will serve as the reference group once the family structure variables are entered into statistical models.

Socio-Economic Status

The primary investigators did not ask respondents specifically about their family's socio-economic status. They did, however, ask about their parents' education, and, many studies

utilizing this dataset have used this measure as a proxy for socio-economic status (see, Deschenes and Esbensen, 1999; Esbensen, et al., 2001; Esbensen and Osgood, 1999; Miller, Esbensen, and Freng, 1999). Respondents were asked to indicate the highest level of schooling their father completed. They were allowed to either indicate 1) "grade school or less," 2) "Some high school," 3) "Completed high school," 4) "Some college," 5) "Completed college," 6) "More than college," or 7) "Don't know." Similarly, respondents were asked to indicate the highest level of schooling their mother completed. They were allowed to either indicate 1) "grade school or less," 2) "Some high school," 3) "Completed high school," 4) "Some college," 5) "Completed college," 6) "More than college," or 7) "Don't know." In the current study, *Mother's Education* is coded 1 if the she completed college or higher (responses 5 and 6) and 0 otherwise (responses 1 through 4). *Father's Education* is coded 1 if he completed college or higher (responses 5 and 6) and 0 otherwise (responses 1 through 4).

Unsupervised Leisure Time

To determine whether respondents spend any time with their peers without adult supervision, respondents were asked, "Do you ever spend time hanging around with your friends not doing anything in particular where no adults are present?" Respondents were allowed to answer either 1=Yes and 0=No.

Availability of Alcohol and/or Drugs

To determine whether respondents have access to alcohol and/or drugs whenever they are with their friends, respondents were asked, "Do you ever spend time getting together with your current friends where drugs and alcohol are available?" Respondents were allowed to answer either 1=Yes and 0=No.

Analytical Plan

The statistical analysis for the current study includes several steps. First, descriptive statistics for the variables used in the analysis were computed for the purpose of describing the general trends of self-control, gang membership, criminal activity, and violent victimization in the sample, as well as the demonstration characteristics of the sample in regard to sex and race/ethnicity, among other demographic traits. Next, a correlation matrix was generated among the variables used in the analysis. This was used to inspect the correlations between the study

variables and to spot any problems with multicollinearity (see additional discussion below). Finally, the study's hypotheses were tested using multivariate regression analysis. In particularly, hypotheses 1 and 2 were tested analyzed using ordinary least square (OLS) regression analysis and hypotheses 3 to 10 were tested using logistic regression analysis.

The regression models used to test hypotheses 1 and 2 were subjected to regression diagnostics in order to assess the extent to which key assumptions of the linear regression model have been met by the data (see, Fox, 1991). In particularly, partial regression residuals plots and component plus residual plots were used to assess the assumption of linearity. Variance inflation factor (VIF) coefficients were computed to assess the presence of multicollinearity among the independent variables. A plot of studentized residuals against the predicted value of the dependent variable and plots of residuals against the partial values of each independent variable were used to assess the assumption of constant error variance. Finally, a univariate analysis of the studentized residuals including the use of a normal probability plot and a stem & leaf plot were used to assess the assumption that the error term is normally distributed.

The following equations were used to estimate each full model needed to test the study's hypotheses. It should be noted that several variables that have been found to influence criminal behavior, violent victimization, and gang membership were not included in the following models because such measures were not available in the data set, but are captured by the error term.

Hypothesis 1: Parental attachment is positively related to the degree of self-control.

Hypothesis 2: Male Juveniles will have lower self-control than female juveniles.

$$Y=\alpha+\beta X_1+\beta X_2+\beta X_3+\beta X_4+\beta X_5+\beta X_6+\beta X_7+\beta X_8+\beta X_9+\beta X_{10}+\beta X_{11}+\beta X_{12}+\beta X_{13}+\beta X_{13}+\beta X_{14}+\beta X_{15}+\beta X_{16}+\beta X_{17}+\beta X_{18}+\beta X_{19}+\beta X_{20}+\beta X_{21}+\beta X_{22}+\beta X_{23}+\beta X_{24}+\beta X_{25}+\beta X_{26}+\beta X_{27}+\varepsilon_i$$

Where: Y=Self-Control

X_1=Mother Attachment

X_2=Father Attachment

X_3=Gang Membership

X_4= Serious Victimization

X_5=Minor Victimization

X_6=Property Offenses

X_7=Personal Offenses

X_8=Illicit Drug Sales

X_9=Illicit Drug Use

X_{10}=Intact Family

X_{11}=Mother-Only

X_{12}=Father-Only

X_{13}=Mother's Education

X_{14}=Father's Education

X_{15}=Negative Peer Commitment

X_{16}=Negative Peer Commitment

X_{17}=Positive Peer Commitment

X_{18}=Delinquent Peers

X_{19}=Unsupervised Leisure Time

X_{20}=Availability of Alcohol and/or drugs

X_{21}=Sex

X_{22}=Age

X_{23}=White

X_{24}=African-American

X_{25}=Hispanic

X_{26}=Asian

X_{27}=Sex X Self-Control

Hypothesis 3: The degree of self-control will be negatively related to participation in criminal activities.

Hypothesis 3a: Sex will interact with self-control in influencing participation in criminal activities.

Hypothesis 4: Gang members will be more likely to participate in criminal activities.

Hypothesis 4a: Sex will interact with gang membership in influencing participation in criminal activities.

$$Y_k=\alpha+\beta X_1+\beta X_2+\beta X_3+\beta X_4+\beta X_5+\beta X_6+\beta X_7+\beta X_8+\beta X_9+\beta X_{10}+\beta X_{11}+\beta X_{12}+\beta X_{13}+\beta X_{13}+\beta X_{14}+\beta X_{15}+\beta X_{16}+\beta X_{17}+\beta X_{18}+\beta X_{19}+\beta X_{20}+\beta X_{21}+\beta X_{22}+\beta X_{23}+\beta X_{24}+\beta X_{25}+\varepsilon i$$

Where: Y_1=Property Offenses; Y_2=Personal Offenses; Y_3=Illicit Drug Sales; Y_4=Illicit Drug Use

X_1=Self-control
X_2= Gang Membership
X_3=Serious Victimization
X_4=Minor Victimization
X_5=Mother Attachment
X_6=Father Attachment
X_7=Sex
X_8=Age
X_9=White
X_{10}=African-American
X_{11}=Hispanic
X_{12}=Asian
X_{13}=Intact Family
X_{14}=Mother-Only
X_{15}=Father-Only
X_{16}=Mother's Education
X_{17}=Father's Education
X_{18}=Negative Peer Commitment
X_{19}=Positive Peer Commitment
X_{20}=Availability of Alcohol and/or drugs
X_{21}=Sex X Self-Control
X_{22}=Sex X Gang Membership
X_{23}=Delinquent Peers
X_{24}=Unsupervised Leisure Time
X_{25}=Pro-Social Peer Involvement

Hypothesis 5: Juveniles with low self-control will be more likely to be gang members.

Hypothesis 5a: Sex will interact with self-control in influencing gang membership.

$$Y=\alpha+\beta X_1+\beta X_2+\beta X_3+\beta X_4+\beta X_5+\beta X_6+\beta X_7+\beta X_8+\beta X_9+\beta X_{10}+\beta X_{11}+\beta X_{12}+\beta X_{13}+\beta X_{13}+\beta X_{14}+\beta X_{15}+\beta X_{16}+\beta X_{17}+\beta X_{18}+\beta X_{19}+\beta X_{20}+\beta X_{21}+\beta X_{22}+\beta X_{23}+\beta X_{24}+\beta X_{25}+\beta X_{26}+\beta X_{27}+\varepsilon_i$$

Where: Y= Gang Members

X_1=Self-Control

X_2= Serious Victimization

X_3=Minor Victimization

X_4=Property Offenses

X_5= Personal Offenses

X_6=Illicit Drug Sales

X_7=Illicit Drug Use

X_8=Mother Attachment

X_9=Father Attachment

X_{10}=Intact Family

X_{11}=Mother-Only

X_{12}=Father-Only

X_{13}=Mother's Education

X_{14}=Father's Education

X_{15}=Negative Peer Commitment

X_{16}=Positive Peer Commitment

X_{17}=Pro-Social Peer Involvement

X_{18}=Delinquent Peers

X_{19}=Unsupervised Leisure Time

X_{20}=Availability of Alcohol and/or drugs

X_{21}=Sex

X_{22}=Age

X_{23}=White

X_{24}=Hispanic

X_{25}=Asian

X_{26}=Sex X Gang Membership

X_{27}=African-American

Hypothesis 6: The degree of self-control will be negatively related to being a victim of violence.

Hypothesis 6a: Sex will interact with self-control in influencing whether a juvenile is a victim of violence.

Hypothesis 7: Male juveniles will report more incident of violent victimization than female juveniles.

Hypothesis 8: Gang members will report more incident of violent victimization than non-gang members.

Hypothesis 8a: Sex will interact with gang membership in influencing whether a juvenile is a victim of violence.

$$Y_k=\alpha+\beta X_1+\beta X_2+\beta X_3+\beta X_4+\beta X_5+\beta X_6+\beta X_7+\beta X_8+\beta X_9+\beta X_{10}+\beta X_{11}+\beta X_{12}+\beta X_{13}+\beta X_{13}+\beta X_{14}+\beta X_{15}+\beta X_{16}+\beta X_{17}+\beta X_{18}+\beta X_{19}+\beta X_{20}+\beta X_{21}+\beta X_{22}+\beta X_{23}+\beta X_{24}+\beta X_{25}+\beta X_{26}+\beta X_{27}+\varepsilon_i$$

Where: Y_1=Serious Victimization; Y_2=Minor Victimization

X_1=Gang Member
X_2=Property Offenses
X_3=Personal Offenses
X_4=Illicit Drug Sales
X_5=Illicit Drug Use
X_6=Self-Control
X_7=Mother Attachment
X_8=Father Attachment
X_9=Intact Family
X_{10}=Mother-Only
X_{11}=Father-Only
X_{12}=Mother's Education
X_{13}=Father's Education
X_{14}=Negative Peer Commitment
X_{15}=Positive Peer Commitment
X_{16}=Delinquent Peers
X_{17}=African-American
X_{18}=Hispanic
X_{19}=Asian
X_{20}=Sex X Self-Control
X_{21}=Sex X Gang Membership
X_{22}=Age
X_{23}=White
X_{24}=Unsupervised Leisure Time
X_{25}=Availability of Alcohol and/or Drugs
X_{26}Sex
X_{27}=Pro-Social Peer Involvement

CHAPTER 4 - Research Findings

Descriptive Statistics

Descriptive statistics for the variables used in the analysis are reported in Table 4.1. The sample consists of 5,884 youths. Females made up 51.9% of the sample (n=3,054), while males made up 48.1 % (n=2,830). Demographically, the sample was composed of 40.4% white (n=2,355), 26.5% Black (n=1,544), 18.8% Hispanic of any origin (n=1,098), and 5.9% Asian of any origin (n=346). Further, 8.4% of the respondents indicated that they were of another race or ethnicity (n=489). The ages of the respondents ranged from as young as 11 years old to as old as 18 years, with an overall average age of 14 years and a standard deviation of .640.

In regard to gang membership, 9.1% of respondents reported that they were currently gang members (n=522). In breaking down gang membership by sex, it was found that 11.5% of the males in the sample reported being in a gang compared to 6.2% of females. An independent-samples t-test was conducted to determine whether there was significant difference between the proportions of males and female who identified themselves as gang members. The result of this test (see Appendix B) revealed that a significantly higher proportion of males reported belonging to a gang compared to females. About 16% of respondents reported being seriously victimized (n=950), while 49.7% of respondents reported being subject to minor victimization (n=2,893). About 47.1% of respondents reported committing one property offense (n=2,725), while 53.8% of respondents reported committing at least one personal offense (n=3,096). In addition, 15.2% of respondents reported selling illicit drugs (n=879), while 63.0% reported using at least one illegal drug (n=3,612). At this point, it should be noted that the high proportions of illicit drug use and committing a personal offense are largely due to the inclusion of tobacco and alcohol consumption, as well as including lesser forms of victimization versus the other more violent type of victimization. Levels of self-control ranged from a low of 8 to a high of 40, with an average of 24.33 and a standard deviation of 5.84. The average of self-control for males was 23.62 with a standard deviation of 5.90, while the average self-control for females was 25.02 and a standard deviation of 5.68. An independent-samples t-test was conducted to determine whether there was significant difference between the average levels of self control for males and females. The result of this test (see Appendix B) revealed that females do have significantly higher levels

of self-control compared to males. The respondents' attachment to his or her mother and father ranged from a low of 6 to a high as 42. The average mother attachment was 29.09 with a standard deviation of 8.03, while the average father attachment average was 26.71 and a standard deviation of 9.39.

The vast majority of respondents lived with both of their biological mother and father (61.7%, n=3,628), while 27.6% indicated they lived with only their mother (n=1,620). About 3.6% of respondents lived with their father-only (n=213), while 7.1% lived with another relative not their mother or father (n=417). About 38.2% of the respondents indicated that their father had a college degree (n=1,625), while about 34.9% indicated their mother had a college degree (n=1,699).

Lastly, 30.7% of respondents indicated that alcohol and illegal drugs were easily available in places they frequently hanged out (n=1,775), while 76.2% of respondents reported that they spent time with their friends doing nothing in particular (n=4,398). Scores indicating levels of commitment to negative peers ranged from 3 to 15, with an average of 7.20 and a standard deviation of 3.43. Scores indicating levels of commitment to positive peers ranged from 2 to 10, with an average of 7.60 and a standard deviation of 2.24. Scores indicating levels of involvement with peers in pro-social activities ranged from 8 to 40, with an average of 23.76 and a standard deviation of 6.47. Scores indicating levels of involvement with delinquent peers ranged from 16 to 80, with an average of 31.85 and a standard deviation of 13.80 (see Table 4.1).

Table 4-1: Descriptive Statistics for the Variables Used in the Current Analysis

Variable	Coding	N	Mean/ (p)	S.D.	Skewness	Min/Max
Gang Member	1=Yes,	522	(.091)			0/1
	0=No	5,226	(.909)			0/1
Male Gang Member		325	(.634)			0/1
Female Gang Member		188	(.366)			0/1
Serious Victimization	1=Yes,	950	(.160)			0/1
	0=No	4,985	(.840)			0/1
Minor Victimization	1=Yes,	2,893	(.497)			0/1
	0=No	2,926	(.503)			0/1
Property Offense	1=Yes,	2,725	(.471)			0/1
	0=No	3,060	(.529)			0/1
Personal Offense	1=Yes,	3,096	(.538)			0/1
	0=No	2,662	(.462)			0/1
Sold Illicit Drugs	1=Yes,	879	(.152)			0/1
	0=No	4,896	(.848)			0/1
Use Illicit Drugs	1=Yes,	3,612	(.630)			0/1
	0=No	2,118	(.370)			0/1
Self-Control	8-Items	5,597	24.33	5.84	.124	8/40
Male's Self Control		2,676	23.62	5.79	.140	8/40
Female's Self Control		2,883	25.02	5.91	.113	8/40
Mother Attachment	6-Items	5,765	29.09	8.03	-.590	6/42
Father Attachment	6-Items	5,277	26.71	9.39	-.447	6/42
Intact Family	1=Yes,	3,628	(.617)			0/1
	0=No	2,250	(.383)			0/1
Mother Only	1=Yes,	1,620	(.276)			0/1
	0=No	4,258	(.724)			0/1

Table 4.1: Descriptive Statistics for the Variables Used in the Current Analysis (Continued)

Variable	Coding	N	Mean/ (p)	S.D.	Skewness	Min/Max
Father Only	1=Yes,	213	(.036)			0/1
	0=No	5,665	(.964)			0/1
Other Family	1=Yes,	417	(.071)			0/1
	0=No	5,461	(.929)			0/1
Father's Education	1=College,	1,625	(.382)			0/1
	0=Other	2,633	(.618)			0/1
Mother's Education	1=College,	1,699	(.349)			0/1
	0=Other	3,175	(.651)			0/1
Negative Peers	3-Items	5,787	7.20	3.43	.647	3/15
Positive Peers	2-Items	5,842	7.60	2.24	-.806	2/10
Pro-Social Peers	8-Items	5,573	23.76	6.47	.021	8/40
Delinquent Peers	16-Items	5,497	31.85	13.8	1.140	16/80
Unsupervised Leisure	1=Yes,	4,398	(.762)			0/1
	0=No	1,372	(.238)			0/1
Alcohol and Drugs	1=Yes,	1,775	(.307)			0/1
	0=No	4,005	(.693)			0/1
Sex	1=Male	2,830	(.481)			0/1
	0=Female	3,054	(.519)			0/1
Age	In Years	5,841	13.82	.640	.548	11/18
White	1=Yes,	2,355	(.404)			0/1
	0=No	3,477	(.596)			0/1
Black	1=Yes,	1,544	(.265)			0/1
	0=No	4,288	(.735)			0/1
Hispanic	1=Yes,	1,098	(.188)			0/1
	0=No	4,734	(.812)			0/1

Table 4.1: Descriptive Statistics for the Variables Used in the Current Analysis (Continued)

Variable	Coding	N	Mean/ (p)	S.D.	Skewness	Min/Max
Asian	1=Yes,	346	(.059)			0/1
	0=No	5,486	(.941)			0/1
Other	1=Yes,	489	(.084)			0/1
	0=No	5,343	(.916)			0/1

Correlation Matrix

Table 4.2 shows the zero-order correlations between the main independent and dependent variables. Correlations among other independent variables are not presented in order to preserve space. As expected, all independent variables exhibit significant bivariate relationships with the dependent variables. Mother attachment is significantly correlated with self-control (r= .348, p≤.01), while father attachment is also significantly correlated with self-control (r= .260, p≤.01). At the bivariate level, youths with higher attachments to either parent reported higher levels of self-control. Sex is significantly correlated with self-control (r=-.120, p≤.01). Females are more likely than males to have higher self-control. Self-control is significantly related to all criminal activities. In particular, self-control is negatively correlated with property offense (r= -.354, p≤.01), personal offense (r= -.280, p≤ .01), drug sell (r= -.299, p≤ .01), and illicit drug use (r= -.346, p≤ .01). At the bivariate level, those with lower levels of self-control are more likely to commit a property offense, commit a personal offense, sell illicit drugs, and use illicit drugs. Gang membership is significantly correlated with various criminal activities. In particular, gang membership is correlated with property offense (r= .213, p≤.01), personal offense (r= .218, p≤ .01), selling illicit drugs (r= .423, p≤ .01), and illicit drug usage (r= .202, p≤ .01). Those in gangs are more likely to commit a property offense, commit a personal offense, sell illicit drugs, and use illicit drugs than youths not in gangs. Furthermore, self-control is significantly correlated with gang membership (r= -.229, p≤01). Youths with lower levels self-control control are more likely to be gang members.

Furthermore, self-control is significantly correlated with violent victimization. In particular, self-control is negatively correlated with serious victimization (r= -.205, p≤ .01) and minor victimization (r= -.171, p≤ .001). Youths with lower levels of self-control are more likely to be victims of violence. Sex is significantly correlated with victimization. In particular, sex is correlated with serious victimization (r= .167, p≤ .01) and minor victimization (r= .175, p≤01). At the bivariate level, males are more likely than females to be victimized. Finally, gang membership is significantly correlated with violent victimization. In particularly, gang membership is correlated with serious victimization (r= .273, p≤ .01) and minor victimization (r= .102, p≤ .01). At the bivariate level, those in gangs are more likely to experience both serious and minor victimization than youths not in gangs.

The correlation matrix was also examined to determine problems with multicollinearity, in addition to calculating the variance inflation factors (VIF). A close examination of the correlation matrix among the independent variables (not shown) indicates that only one bivariate correlation exceeded .70 (Berry and Feldman, 1985). The correlation matrix reveals that mother-only (respondents that were living with their mother only) was highly correlated with intact family (respondents who were living with both their biological parents). The correlation between mother-only and intact family was r= -.783 and significant at the .001 level. This is primarily the result of these two family type categories having much higher frequency compared to the father-only and other categories.

Table 4-2: Correlations Among Main Variables

	1	2	3	4	5	6	7	8	9	10	11
1	1.0										
2	.273**	1.0									
3	.102**	.261**	1.0								
4	.213**	.185**	.213**	1.0							
5	.218**	.246**	.378**	.317**	1.0						
6	.423**	.327**	.153**	.304**	.281**	1.0					
7	.202**	.169**	.177**	.409**	.302**	.285**	1.0				
8	-.229**	-.205**	-.171**	-.354**	-.280**	-.299**	-.346**	1.0			
9	-.141**	-.127**	-.139**	-.261**	-.205**	-.184**	-.236**	.348**	1.0		
10	-.109**	-.090**	-.084**	-.181**	-.151**	-.132**	-.222**	.260**	.473**	1.0	
11	.098**	.167**	.175**	.125**	.141**	.146**	-.005**	-.120**	-.007	.134**	1.0

Note: 1) Gang Member 2) Serious Victimization 3) Minor Victimization 4) Property Offense 5) Personal Offense 6) Sold Illicit Drugs 7) Used Illicit Drugs 8) Self-Control 9) Mother Attachment 10) Father Attachment 11) Sex

*p≤.05, **p≤.01

Results from the Multiple Regression Analyses

Model Predicting Self-Control

Table 4.3 presents the model predicting self-control. Recall that parental attachment is predicted to be positively related to the degree of self-control. Because the dependent variable (self-control) is measured by a composite index, ordinary least squares (OLS) regression analysis is used to test the study hypothesis and estimate the effect of each independent variable. However, in order to determine that the OLS regression model met key assumptions, several regression diagnostic tests were performed (Berry and Feldman, 1985; Fox, 1991; Berry, 1993). To examine the assumption of linearity, partial regression residual plots and component plus residual plots were generated. The detection of multicollinearity was examined through the variance inflation factor (VIF) coefficients and the correlation matrix (full matrix not shown). Plots of studentized residuals against the predicted value of the dependent variable and plots of residuals against the partial values of each independent variable were generated to test the assumption of constant error variance. A normal probability plot of studentized residuals was created to test the assumption of error term normality (Berry and Feldman, 1985; Fox, 1991; Berry, 1993).

The variance inflation factors (VIF) for the variables are presented in Appendix A. A look at the variance inflation factor coefficients revealed that only one variable exceeded the acceptable 4.0 threshold (Fisher and Mason, 1981). The correlation matrix (not presented) shows that the variables mother-only and intact family was highly correlated ($r= -.783$, $p\leq.001$). This is largely due to the fact that the vast majority of respondents either lived in intact families or with their mother only. Combined, these family arrangements accounted for about 90% of all household compositions, thereby restricting representation of other family arrangements in the sample.

A visual inspection of the partial regression residual plots and component plus residuals reveals no major violation of the assumption of linearity. In addition, a visual inspection of the normal probability plot of studentized residuals provides evidence that the assumption that the error term must be normally distributed has been met. Finally, a visual inspection of the plots of studentized residuals against the predicted values of the dependent variable and plots of residuals against the partial values of each independent variable revealed a problem with

heteroscedasticity (Berry and Feldman, 1985; Fox, 1991; Berry, 1993). The White and Breusch-Pagan tests were conducted as formal tests. A significant chi-square for both tests indicates that the model has a significant level of heteroscedasticity. To address this problem, the OLS regression analysis was abandoned in favor of weighted least squares (WLS) estimation (Fox, 1991).

The results of the weighted least squares (WLS) regression analysis are presented in Table 4.3. The WLS regression model demonstrated that the model fit the sample data as the F statistic for the model was significant at the .001 level. The adjusted-R^2 is shown to be .431, indicating that the model has a moderate degree of explanatory power. The model shows that mother's attachment is statistically significant in predicting self-control (b=.081, p≤.001). However, father's attachment is not significant. In this sample, youths who reported strong mother attachment also reported higher levels of self-control. Sex is negative and statistically significant in the model (b=-.733, p≤.001). This model indicates that females have higher self-control than males. Recall that an independent-samples t-test of difference of means (not shown) was used to test the significance of the difference between sex and self-control. The results of the test reveal that there is significant difference of self-control between males and females. On average, male have lower self-control than females.

Other factors that positively influence self-control include having positive (b=.429, p≤.001) and pro-social peers (b=.100, p≤.001), and mother's education (b=.416, p≤.05). These results indicate that having positive and pro-social peers, as well as a mother's education, increases self-control. Committing a property offense (b=-.752, p≤.001), illicit drug use (b=-.791, p≤.001), father-only (b=-1.193, p≤.05), associating with negative peers (b=-.357, p≤.001) and delinquent peers (b=-.033, p≤.001), having leisure time (b=-.737, p≤.001), and the availability of alcohol and drugs (b=-1.092, p≤.001) are all negatively related to self-control. Taken together, committing a property offense, using illicit drugs, living with their father-only, associating with negative and delinquent peers, having leisure time, and having access to alcohol and drugs, are negatively associated with low self-control.

In order to determine whether parental attachment has the strongest effect on self-control, the standardized partial slopes or beta-weights were calculated. These beta-weights are reported in Table 4.3. Table 4.3 shows that lacking negative peers have the strongest effect on self-control (β=-.204). This was followed by positive peers (β=.164), pro-social peers (β=.109), and

then mother attachment (β=.106). Lacking negative peers has the strongest influence on self-control, contradicting Gottfredson and Hirschi's (1990) claim that parental attachment is the cause of self-control.

Table 4-3: OLS and WLS Regression Analysis Predicting Self-Control

	OLS			WLS		
Variable	**b**	**S.E.**	**β**	**b**	**S.E.**	**β**
Mother Attachment	.082***	.013	.106	.081***	.013	.106
Father Attachment	.018	.011	.027	.020	.010	.031
Gang Member	.383	.362	.017	.450	.371	.018
Serious Victimization	-.340	.257	-.021	-.368	.247	-.022
Minor Victimization	-.285	.191	-.024	-.244	.184	-.020
Property Offense	-.693***	.203	-.057	-.752***	.195	-.063
Personal Offense	-.305	.205	-.025	-.350	.198	-.029
Sold Illicit Drugs	.353	.308	.021	.276	.291	.016
Illicit Drug Use	-.721***	.213	-.058	-.791***	.211	-.062
Intact Family	-.603	.425	-.044	-.563	.433	-.041
Mother Only	-.926	.447	-.060	-.892	.459	-.056
Father Only	-1.350*	.619	-.040	-1.193*	.588	-.039
Mother's Education	.376	.197	.030	.416*	.193	.033
Father's Education	.132	.199	.011	-.005	.193	-.0004
Negative Peers	-.348***	.031	-.197	-.357***	.030	-.204
Positive Peers	.415***	.045	.151	.429***	.042	.164
Pro-Social Peers	.095***	.017	.103	.100***	.016	.109
Delinquent Peers	-.040***	.010	-.091	-.033***	.010	-.074
Leisure	-.804***	.216	-.055	-.737***	.220	-.049
Alcohol and Drugs	-1.147***	.240	-.088	-1.092***	.227	-.087

Table 4.3: OLS and WLS Regression Analysis Predicting Self-Control (Continued)

	OLS			WLS		
Variable	**b**	**S.E.**	**β**	**b**	**S.E.**	**β**
Sex	-.780***	.179	-.065	-.733***	.174	-.061
Age	-.113	.141	-.012	-.046	.138	-.004
White	.006	.332	.001	-.083	.357	-.007
Black	.515	.367	.034	.486	.391	.032
Hispanic	-.215	.373	-.577	-.257	.399	-.015
Asian	.346	.475	.013	.284	.488	.011
Intercept	24.316***			23.030***		
F-Statistic	84.204***			87.63***		
R^2	.422			.431		
Adj-R^2	.417			.426		

Note: *p≤.05, **p≤.01, ***p≤.001

Models Predicting Criminal Activities

Several multiple logistic regression models were estimated to test the hypothesis of whether degree of self-control is negatively related to participation in criminal activities. The literature review above predicts that the higher the self-control the respondent possesses, the less likely the respondent will commit any type of criminal offense. Given the binary measurement of the dependent measures, logistic regression analysis was utilized. Separate models were estimated to test whether self-control had an influence on committing a property offense, a personal offense, illicit drug sales, and illicit drug use. In addition, block modeling is used in order to determine the explanatory power of each competing theory on the dependent variables. Finally, the full model examines the effect of all criminological variables, while controlling for demographic and control variables identified above. In order to determine which independent variable has the strongest effect on the dependent variable, the standardized coefficients for logistic regression was calculated by the method described by Menard (2002). The results of these analyses are presented in Tables 4.4 through 4.17.

Property Offense

Table 4.4 reports the results of the logistic regression analyses when regressing whether or not a juvenile committed a property offense on independent variables drawn from each of the competing theoretical perspective considered as separate blocks (social control, social learning and social bonding). The full model analyzing the effects of these variables plus the control variables is presented in Table 4.5.

The first self-control model (see Table 4.4) indicates that self-control does not interact with sex in influencing the commission of a property offense by juveniles in the sample. Excluding this interaction effect, self-control was found to have a negative effect on the odds of committing a property offense (see second self-control model; $b=-.139$, $p\leq.001$). The odds ratio for self-control was 0.870, indicating that the odds of committing a property crime decreased by 13.0% for every unit increase in self-control. While the chi-square coefficient indicates this model fit the sample data, the Cox and Snell R^2.126 and the Nagelkerke R^2 .168 coefficients indicate only a weak goodness-of-fit. This suggests that low self-control is not a strong determinant of a juvenile committing a property offense.

The logistic regression model containing only the block of social learning variables was found to fit the sample data (see Table 4.4). Association with pro-social peers was not found to be systematically related to the odds of a juvenile committing a property offense. However, consistent with the social learning perspective, association with positive peers was found to have a negative effect on committing a property offense (b=-.101, p≤.001) while association with delinquent peers and association with negative peers were both found to have a positive effect (b=.067, p≤.001 and b=.101, p≤.001 respectively). The standardized logistic regression coefficients indicate that the association with delinquent peers had the strongest effect on the odds of committing a property offense, followed by association with negative peers and a lack of positive peers. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a moderate level of goodness-of-fit that is substantially greater than the self-control model (see Table 4.4, .253 and .314 compared to .126 and .168).

The logistic regression model containing the block of social bonding variables was found to fit the sample data (see Table 4.4). Consistent with this theoretical perspective, mother's attachment and father's attachment were found to have a significant, negative effect on the odds that a juvenile will commit a property offense. A comparison of the standardized logistic regression coefficients indicates that mother's attachment has a substantially stronger effect in reducing the odds of a property offense compared to father's attachment. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest that the model has a weak level of goodness-of-fit that is substantially weaker than the social learning model and also weaker than the self-control model (see Table 4.4, .074 and .098 compared to .253 and .314 and .126 and .168, respectfully).

The results of the estimation of the full logistic regression model containing the block variables from each theoretical perspective and the control variables are presented in Table 4.5. The full model was also found to fit the sample data (see chi-square test for Models 1 and 2 in Table 4.5). The effect of self-control was again not found to be conditioned by sex in influencing the commission of a property offense in the full model (see Model 1). Removing this interaction effect from the model, self-control was found to have a significant, negative effect on committing a property offense, holding sex constant and all other independent variables in the full model (see Model 2: b=-.041, p≤.001).

The effect of gang membership on the odds of committing a property offense was found to be conditioned by sex (see Model 2; b=1.038, p≤.001). The odds ratio for this interaction

effect was 2.823, indicating that a gang member being male increases the odds of committing a property offense by 182.3%. The partial logistic regression coefficient for gang membership indicates the effect of being a female gang member and was not significant in the full model. The partial logistic regression coefficient for sex indicates the effect of being a male, non-gang member. This coefficient was found to be positive and significant, indicating that being a male increase the odds of a juvenile committing a property offense when the male is not a member of a gang.

The pattern of significance of the social learning and social bonding variables was the same in the full model compared to the partial models with one exception. Father attachment was not found to have a significant effect on the odds of committing a property offense when controlling for the other independent variables (see Model 2 in Table 4.5). Among the control variables, experiencing minor violence victimization, having leisure time, and the availability alcohol and drugs were found to have a significant, positive effect on the odds of committing a property offense, while a juvenile being black was found to have a significant, negative effect on these odds.

An examination of the standardized logistic regression coefficients indicates that associating with delinquent peers had by far the strongest effect on the odds of committing a property offense (see Model 2 in Table 4.5). This was followed by the effect of self-control, the combination of being male gang member, mother's attachment, and experiencing minor violence victimization. The Cox and Snell R^2 and Nagelkerke R^2 coefficients (.285 and .382) suggest the full model has a moderate level of goodness-of-fit that provides a slight improvement in explanatory power over the social learning variables alone.

Table 4-4: Logistic Regression Predicting Property Offense by Theoretical Perspective

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.127***	-.322	.008	.811	-.139***	-.356	.006	.870
Social Learning								
Negative Peers	_	_	_	_	_	_	_	_
Positive Peers	_	_	_	_	_	_	_	_
Pro-Social Peers	_	_	_	_	_	_	_	_
Delinquent Peers	_	_	_	_	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	_	_	_	_
Father's Attachment	_	_	_	_	_	_	_	_
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_

Table 4.4: Logistic Regression Predicting Property Offense by Theoretical Perspective (Continued)

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	ß	S.E.	Odds Ratio	b	ß	S.E.	Odds Ratio
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	.867**	.188	.282	2.380	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	-.021	-.133	.011	.979	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	2.801***		.196	16.457	3.280***		.139	26.568
Chi-Square	778.158*** (df=3)				737.478*** (df=1)			
-2 Log Likelihood	6764.008				6853.560			
Cox & Snell R^2	.133				.126			
Nagelkerke R^2	.178				.168			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4.4: Logistic Regression Predicting Property Offense by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	_	_	_	_	_	_	_	_
Social Learning								
Negative Peers	.101***	.131	.011	1.106	_	_	_	_
Positive Peers	-.101***	-.085	.016	.904	_	_	_	_
Pro-Social Peers	-.010	-.026	.006	.990	_	_	_	_
Delinquent Peers	.067***	.353	.003	1.070	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	-.062***	-.227	.004	.940
Father Attachment	_	_	_	_	-.016***	-.068	.004	.984
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_

Table 4.4: Logistic Regression Predicting Property Crime by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	_	_	_	_	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	_	_	_	_	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	-1.882***		.253	.152	2.132***		.123	8.430
Chi-Square	1381.177*** (df=4)				390.212*** (df=2)			
-2 Log Likelihood	5750.864				6659.376			
Cox & Snell R^2	.253				.074			
Nagelkerke R^2	.314				.098			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4-5: **Logistic Regression Predicting Property Offense (Full Model)**

Variable	Model 1				Model 2			
	b	β	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.029*	-.006	.012	.917	-.041***	-.086	.010	.960
Social Learning								
Negative Peers	.055***	.065	.016	1.056	.055***	.066	.016	1.056
Positive Peers	-.058*	-.045	.024	.943	-.058*	-.044	.024	.944
Pro-Social Peers	-.006	-.015	.009	.994	-.006	-.014	.009	.944
Delinquent Peers	.057***	.275	.005	1.059	.058***	.277	.005	1.059
Social Bonding								
Mother's Attachment	-.027***	-.074	.007	.973	-.027***	-.074	.007	.973
Father Attachment	.002	.007	.006	1.002	.002	.007	.006	1.002
Controls								
Gang Member	-.151	-.014	.292	.860	-.195	-.019	.293	.823
Serious Victimization	.096	.012	.143	1.101	.095	.012	.133	1.100
Minor Victimization	.414***	.073	.090	1.513	.409***	.072	.090	1.505
Intact	-.225	-.035	.223	.798	-.299	-.036	.223	.796
Mother-Only	-.125	-.017	.234	.883	-.130	-.018	.234	.878
Father-Only	-.230	-.014	.328	.795	-.222	-.014	.328	.801
Mother's Education	-.023	-.004	.101	.977	-.022	-.004	.101	.978

Table 4.5: Logistic Regression Predicting Property Offense (Full Model)

Variable	Model 1				Model 2			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Father's Education	-.112	-.019	.101	.894	-.109	-.019	.101	.897
Leisure	.368***	.053	.113	1.445	.363***	.053	.113	1.438
Alcohol and Drugs	.350**	.057	.114	1.420	.347**	.057	.114	1.415
Age	-.146	-.032	.076	.864	-.140	-.030	.076	.869
Sex	.965*	.169	.424	2.625	.335***	.059	.093	1.398
White	.119	.021	.173	1.126	.117	.021	.173	1.124
Black	-.372	-.052	.190	.690	-.373*	-.052	.190	.689
Hispanic	-.167	-.022	.195	.846	-.174	-.023	.195	.840
Asian	.429	.035	.241	1.535	.420	.034	.241	1.522
Sex*Self-Control	-.025	-.112	.017	.975	_	_	_	_
Sex*Gang Member	.967*	.074	.420	2.631	1.038*	.080	.417	2.823
Constant	1.285		1.153	3.615	1.495		1.144	4.457
Chi-Square	1035.105*** (df=25)				1032.780*** (df=24)			
-2 Log Likelihood	3215.121				3217.445			
Cox & Snell R^2	.286				.285			
Nagelkerke R^2	.382				.381			

Note: *p≤.05, **p≤.01, ***p≤.001

Personal Offense

Table 4.6 reports the results of the logistic regression analyses when regressing whether or not a juvenile committed a personal offense on independent variables drawn from each of the competing theoretical perspective considered as separate blocks (social control, social learning and social bonding). The full model analyzing the effects of these variables plus the control variables is presented in Table 4.7.

The first self-control model (see Table 4.6) indicates that self-control does not interact with sex in influencing the commission of a personal offense by juveniles in the sample. Excluding this interaction effect, self-control was found to have a negative effect on the odds of committing a personal offense (see second self-control model; b=-.104, $p \leq .001$). The odds ratio for self-control was 0.901, indicating that the odds of committing a personal crime decreased by 9.9% for every unit increase in self-control. While the chi-square coefficient indicates this model fit the sample data, the Cox and Snell R^2.078 and the Nagelkerke R^2 .105 coefficients indicate only a weak goodness-of-fit. This suggests that low self-control is not a strong determinant of a juvenile committing a personal offense.

The logistic regression model containing only the block of social learning variables was found to fit the sample data (see Table 4.6). Consistent with the social learning perspective, association with positive peers and pro-social peers were found to have a negative effect on committing a personal offense (b=-.049, $p \leq .001$ and b=-.023, $p \leq .001$) while association with delinquent peers and association with negative peers were both found to have a positive effect (b=.066, $p \leq .001$ and b=.042, $p \leq .001$ respectively). The standardized logistic regression coefficients indicate that the association with delinquent peers had the strongest effect on the odds of committing a personal offense, followed by association with negative peers, a lack of pro-social peers and positive peers. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a moderate level of goodness-of-fit that is substantially greater than the self-control model (see Table 4.6, .189 and .253 compared to .078 and .105).

The logistic regression model containing the block of social bonding variables was found to fit the sample data (see Table 4.6). Consistent with this theoretical perspective, mother's attachment and father's attachment were found to have a significant, negative effect on the odds that a juvenile will commit a personal offense. A comparison of the standardized logistic regression coefficients indicates that mother's attachment has a substantially stronger effect in

reducing the odds of a personal offense compared to father's attachment. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest that the model has a weak level of goodness-of-fit that is substantially weaker than the social learning model and also weaker than the self-control model (see Table 4.6, .046 and .061 compared to .189 and .253 and .078 and .105, respectfully).

The results of the estimation of the full logistic regression model containing the block variables from each theoretical perspective and the control variables are presented in Table 4.7. The full model was also found to fit the sample data (see chi-square test for Models 1 and 2 in Table 4.7). The effect of self-control was again not found to be conditioned by sex in influencing the commission of a personal offense in the full model (see Model 1). Removing this interaction effect from the model reveals that self-control drops from being significant.

The effect of gang membership on the odds of committing a personal offense was not found to be conditioned by sex. The partial logistic regression coefficient for gang membership indicates the effect of being a gang member and was significant in the full model ($b=.662$, $p\leq.01$). The partial logistic regression coefficient for sex indicates the effect of being a male, non-gang member. This coefficient was found to be positive and significant, indicating that being a male increase the odds of a juvenile committing a personal offense when the male is not a member of a gang.

The pattern of significance of the social learning and social bonding variables change in the full model compared to the partial models. Positive peers, pro-social peers, and father attachment were not found to have a significant effect on the odds of committing a personal offense when controlling for the other independent variables. Negative peers and delinquent peers remain significant and positive; while mother attachment remains significant and negative (see Model 2 in Table 4.7). Among the control variables, experiencing minor violence victimization, experiencing serious violence victimization, and having leisure time were found to have a significant, positive effect on the odds of committing a personal offense, while a juvenile being white or Hispanic was found to have a significant, negative effect on these odds.

An examination of the standardized logistic regression coefficients indicates that minor violence victimization had by far the strongest effect on the odds of committing a personal offense (see Model 2 in Table 4.7). This was followed by delinquent peers, being Hispanic, being a gang member and mother attachment. The Cox and Snell R^2 and Nagelkerke R^2

coefficients (.318 and .424) suggest the full model has a moderate level of goodness-of-fit that provides an improvement in explanatory power over the social learning variables alone.

Table 4-6: Logistic Regression Predicting Personal Offense by Theoretical Perspective

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.106***	-.282	.007	.899	-.104***	-.289	.005	.901
Social Learning								
Negative Peers	_	_	_	_	_	_	_	_
Positive Peers	_	_	_	_	_	_	_	_
Pro-Social Peers	_	_	_	_	_	_	_	_
Delinquent Peers	_	_	_	_	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	_	_	_	_
Father's Attachment	_	_	_	_	_	_	_	_
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_

Table 4.6: Logistic Regression Predicting Personal Offense by Theoretical Perspective (Continued)

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	250	.057	.266	1.284	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	.010	.058	.011	1.010	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	2.520***		.188	12.425	2.703***		.131	14.924
Chi-Square	522.889*** (df=3)				445.109***(df=1)			
-2 Log Likelihood	6967.817				7093.862			
Cox & Snell R^2	.092				.078			
Nagelkerke R^2	.123				.105			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4.6: Logistic Regression Predicting Personal Offense by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	_	_	_	_	_	_	_	_
Social Learning								
Negative Peers	.042***	.065	.011	1.043	_	_	_	_
Positive Peers	-.049**	-.042	.016	.952	_	_	_	_
Pro-Social Peers	-.023***	-.056	.006	.978	_	_	_	_
Delinquent Peers	.066***	.348	.003	1.069	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	-.046***	-.171	.004	.955
Father's Attachment		_	_	_	-.015***	-.064	.004	.985
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_

Table 4.6: Logistic Regression Predicting Personal Offense by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	_	_	_	_	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	_	_	_	_	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	-1.233***		.248	.291	1.921***		.122	6.828
Chi-Square	1076.535*** (df=4)				238.327*** (df=2)			
-2 Log Likelihood	6010.433				6764.372			
Cox & Snell R^2	.189				.046			
Nagelkerke R^2	.253				.061			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4-7: Logistic Regression Predicting Personal Offense (Full Model)

Variable	Model 1				Model 2			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	-.026*	-.054	.012	.974	-.016	-.032	.010	.985
Social Learning								
Negative Peers	.041*	.048	.017	1.042	.041*	.048	.017	1.042
Positive Peers	-.018	-.014	.024	.982	-.019	-.014	.024	.981
Pro-Social Peers	-.014	-.031	.009	.986	-.014	-.031	.009	.986
Delinquent Peers	.053***	.251	.006	1.054	.053***	.249	.006	1.054
Social Bonding								
Mother's Attachment	-.019**	-.051	.007	.981	-.019**	-.052	.007	.981
Father Attachment	.002	.007	.006	1.002	.002	.006	.006	1.002
Controls								
Gang Member	.649	.005	.353	1.914	.662**	.062	.242	1.939
Serious Victimization	.362*	.046	.147	1.436	.363*	.046	.146	1.437
Minor Victimization	1.637***	.283	.092	5.141	1.640***	.284	.092	5.156
Intact	.030	.019	.232	1.031	.033	.005	.231	1.033
Mother-Only	.137	.005	.244	1.147	.142	.019	.244	1.153
Father-Only	-.257	-.016	.336	.773	-.265	-.016	.336	.767
Mother's Education	-.195	-.033	.103	.823	-.198	-.033	.103	.821

Table 4.7: Logistic Regression Predicting Personal Offense (Full Model)

Variable	Model 1				Model 2			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Father's Education	.080	.013	.104	1.083	.078	.013	.104	1.081
Leisure	.287*	.041	.113	1.445	.290**	.041	.113	1.337
Alcohol and Drugs	.009	.002	.112	1.009	.014	.002	.122	1.014
Age	.047	.01	.077	1.048	.042	.009	.077	1.043
Sex	-.193	-.033	.419	.824	.349***	.06	.093	1.417
White	-.357*	-.062	.181	.700	-.355*	-.061	.181	.701
Black	.198	.027	.199	1.218	.196	.027	.199	1.217
Hispanic	-.680***	-.087	.203	.507	-.674***	-.086	.203	.510
Asian	-.238	-.019	.252	.788	-.230	-.019	.252	.795
Sex*Self-Control	.022	.094	.016	1.022	_	_	_	_
Sex*Gang Member	.035	.003	.472	1.036	_	_	_	_
Constant	-1.726		1.175	.178	-1.919		1.165	.147
Chi-Square (df=25)	1178.573***(df=25)				1176.790*** (df=23)			
-2 Log Likelihood	3076.457				3078.240			
Cox & Snell R^2	.318				.318			
Nagelkerke R^2	.425				.424			

Note: *p≤.05, **p≤.01, ***p≤.001

Illicit Drug Use

Table 4.8 reports the results of the logistic regression analyses when regressing whether or not a juvenile uses illicit drugs on independent variables drawn from each of the competing theoretical perspective considered as separate blocks (social control, social learning and social bonding). The full model analyzing the effects of these variables plus the control variables is presented in Table 4.9.

The first self-control model (see Table 4.8) indicates that self-control does interact with sex in influencing illicit drug use by juveniles in the sample. The odds ratio for this interaction effect was .970, indicating that a male with high self-control decreases the odds of using illicit drugs by 3.0%. While the chi-square coefficient indicates this model fit the sample data, the Cox and Snell R^2 and the Nagelkerke R^2 coefficients indicate only a weak goodness-of-fit. This suggests that low self-control is not a strong determinant of juvenile using illicit drugs.

The logistic regression model containing only the block of social learning variables was found to fit the sample data (see Table 4.8). Consistent with the social learning perspective, association with positive peers and pro-social peers were found to have a negative effect on illicit drug use (b=-.043, $p \leq .05$ and b=-.034, $p \leq .001$ respectfully) while association with delinquent peers and association with negative peers were both found to have a positive effect (b=.078, $p \leq .001$ and b=.137, $p \leq .001$ respectively). The standardized logistic regression coefficients indicate that the association with delinquent peers had the strongest effect on the odds of using illicit drugs, followed by association with negative peers, and a lack of pro-social peers, and positive peers. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a moderate level of goodness-of-fit that is substantially greater than the self-control model (see Table 4.8, .242 and .331 compared to .123 and .168).

The logistic regression model containing the block of social bonding variables was found to fit the sample data (see Table 4.8). Consistent with this theoretical perspective, mother's attachment and father's attachment were found to have a significant, negative effect on the odds that a juvenile using illicit drugs. A comparison of the standardized logistic regression coefficients indicates that mother's attachment has a substantially stronger effect in reducing the odds of illicit drug use compared to father's attachment. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest that the model has a weak level of goodness-of-fit that is

substantially weaker than the self-control model and also weaker than the social learning model (see Table 4.8, .075 and .102 compared to .242 and .331 and .123 and .168).

The results of the estimation of the full logistic regression model containing the block variables from each theoretical perspective and the control variables are presented in Table 4.9. The full model was also found to fit the sample data (see chi-square test for Models 1 and 2 in Table 4.9). The effect of self-control was not found to be conditioned by sex in influencing the commission of illicit drug use in the full model (see Model 1). Removing this interaction effect from the model, self-control was found to have a significant, negative effect on illicit drug use, holding sex constant and all other independent variables in the full model (see Model 2: $b=-.036$, $p\leq.001$).

The effect of gang membership on the odds of using illicit drugs was not found to be conditioned by sex (see Model 1). Gang membership was found to have a significant, positive effect on the odds of using illicit drugs ($b=1.240$, $p\leq.001$). Gang members are more likely than non-gang members to use illicit drugs by 245.4%. Sex was found to be significant and negative, indicating that males were less likely than female to use illicit drugs.

The pattern of significance of the social learning and social bonding variables was the same in the full model compared to the partial models with two exceptions. Positive peers and mother attachment are not found to have a significant effect on the odds of using illicit drugs when controlling for the other independent variables (see Model 2 in Table 4.9). Among the control variables, experiencing minor violence victimization, having leisure time, the availability of alcohol and drugs, were found to have a significant, positive effect on the odds of using illicit drugs, while a juvenile being Asian, being male, and father's education were found to have a significant, negative effect on these odds.

An examination of the standardized logistic regression coefficients indicates that access to alcohol and drugs had the strongest effect on the odds of using illicit drugs (see Model 2 in Table 4.9). This was followed by delinquent peers, being a gang member, having leisure time, and being male. The Cox and Snell R^2 and Nagelkerke R^2 coefficients (.332 and .454) suggest the full model has a moderate level of goodness-of-fit that provides an improvement in explanatory power over the social learning variables alone.

Table 4-8: **Logistic Regression Predicting Illicit Drug Use by Theoretical Perspective**

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.126***	-.329	.008	.881	-.138***	-.135	.006	.871
Social Learning								
Negative Peers	_	_	_	_	_	_	_	_
Positive Peers	_	_	_	_	_	_	_	_
Pro-Social Peers	_	_	_	_	_	_	_	_
Delinquent Peers	_	_	_	_	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	_	_	_	_
Father's Attachment	_	_	_	_	_	_	_	_
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_

Table 4.8: Logistic Regression Predicting Illicit Drug Use by Theoretical Perspective (Continued)

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	.557	.120	.302	1.745	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	-.031**	-.139	.012	.970	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	3.779		.209	43.755	3.972***		.148	53.083
Chi-Square	705.150***(df=3)				686.108***(df=1)			
-2 Log Likelihood	6377.552				6442.777			
Cox & Snell R^2	.123				.119			
Nagelkerke R^2	.168				.162			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4.8: Logistic Regression Predicting Illicit Drug Use by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	_	_	_	_	_	_	_	_
Social Learning								
Negative Peers	.137***	.150	.013	1.147	_	_	_	_
Positive Peers	-.043*	-.031	.018	.958	_	_	_	_
Pro-Social Peers	-.034***	-.070	.006	.967	_	_	_	_
Delinquent Peers	.078***	.344	.004	1.081	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	-.053***	-.186	.005	.948
Father's Attachment	_	_	_	_	-.032***	-.130	.004	.969
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_

Table 4.8: Logistic Regression Predicting Illicit Drug Use by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	_	_	_	_	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	_	_	_	_	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	-1.402***		.277	.246	3.013***		.139	20.350
Chi-Square	1411.839***(df=4)				392.339*** (df=2)			
-2 Log Likelihood	5272.573				6232.692			
Cox & Snell R^2	.242				.075			
Nagelkerke R^2	.331				.102			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4-9: **Logistic Regression Predicting Illicit Drug Use (Full Model)**

Variable	Full Model 1				Model 2			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.035**	-.057	.013	.965	-.036***	-.021	.010	.964
Social Learning								
Negative Peers	.068***	.063	.019	1.071	.068***	.022	.019	1.071
Positive Peers	-.015**	-.009	.027	.985	-.015	-.003	.027	.985
Pro-Social Peers	-.026**	-.046	.010	.974	-.027**	-.017	.010	.974
Delinquent Peers	.051***	.187	.006	1.052	.051***	.066	.006	1.052
Social Bonding								
Mother's Attachment	-.011	-.024	.008	.989	-.011	-.008	.008	.989
Father Attachment	-.018**	-.043	.006	.982	-.018**	-.015	.006	.982
Controls								
Gang Member	1.683*	.124	.767	5.380	1.240**	.032	.391	3.454
Serious Victimization	.304	.03	.162	1.356	.302	.011	.162	1.353
Minor Victimization	.357***	.048	.098	1.430	.360***	.017	.098	1.433
Intact	-.480	-.057	.252	.619	-.487	-.021	.252	.614
Mother-Only	-.269	-.029	.265	.764	-.275	-.01	.265	.759
Father-Only	-.438	-.021	.374	.645	-.444	-.008	.374	.641
Mother's Education	.097	.013	.109	1.102	.100	.005	.109	1.105

Table 4.9: Logistic Regression Predicting Illicit Drug Use (Full Model)

Variable	Full Model 1				Model 2			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Father's Education	-.351***	-.046	.108	.704	-.353***	-.017	.108	.703
Leisure	.524***	.058	.110	1.688	.522***	.021	.110	1.685
Alcohol and Drugs	1.655***	.207	.171	5.235	1.656***	.074	.171	5.238
Age	.146	.024	.080	1.158	.147	.009	.080	1.158
Sex	-.286	-.039	.485	.751	-.375***	-.018	.099	.687
White	.045	.006	.201	1.046	.045	.002	.201	1.046
Black	-.733***	-.078	.217	.481	-.735	-.028	.217	.479
Hispanic	-.516*	-.051	.225	.597	-.517	-.018	.225	.597
Asian	-.526*	-.033	.262	.591	-.529*	-.012	.262	.589
Sex*Self-Control	-.003	-.011	.018	.997	_	_	_	_
Sex*Gang Member	-.640	-.038	.892	.527	_	_	_	_
Constant	-.784		1.241	.457	-.736		1.229	.479
Chi-Square	1235.680*** (df=25)				1235.099*** (df=23)			
-2 Log Likelihood	2785.388				2785.969			
Cox & Snell R^2	.332				.332			
Nagelkerke R^2	.454				.454			

Note: *p≤.05, **p≤.01, ***p≤.001

Illicit Drug Sales

Table 4.10 reports the results of the logistic regression analyses when regressing whether or not a juvenile sold illicit drugs on independent variables drawn from each of the competing theoretical perspectives considered as separate blocks (self-control, social learning, and social bonding). The full model analyzing the effects of these variables plus the control variables is presented in Table 4.11.

The first self-control model (see Table 4.10) indicates that self-control does not interact with sex in influencing illicit drug sales by juveniles in the sample. Excluding this interaction effect, self-control was found to have a negative effect on the odds of selling illicit drugs (see second self-control model; b=-.164, p≤.001). The odds ratio for the self-control was 0.849, indicating that the odds of selling illicit drugs decreased by 15.4% for every unit increase in self-control. While the chi-square coefficient indicates this model fits the sample data, the Cox and Snell R^2 .092 and the Nagelkerke R^2 .160 coefficients indicate only a weak goodness-of-fit. This suggests that low self-control is not a strong determinant of juveniles selling illicit drugs.

The logistic regression model containing only the block of social learning variables was found to fit the sample data (see Table 4.10). Consistent with the social learning perspective, association with positive peers and pro-social peers were found to have a negative effect on selling illicit drugs (b=-.102; p≤.001 and b=-.033, p≤.001, respectfully) while association with delinquent peers and association with negative peers were both found to have a positive effect (b=.091, p≤.001 and b=.089, p≤.001, respectively). The standardized logistic regression coefficients indicate that association with delinquent peers had the strongest effect on the odds of selling illicit drugs, followed by association with negative peers, a lack of positive peers and pro-social peers. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a moderate level of goodness-of-fit that is substantially greater than the self-control model (see Table 4.10, .443 and .256 compared to .092 and .160).

The logistic regression model containing the block of social bonding variables was found to fit the sample data (see Table 4.10). Consistent with this theoretical perspective, mother's attachment and father's attachment were found to have a significant, negative effect on the odds that a juvenile will sell illicit drugs. A comparison of the standardized logistic regression coefficients indicates that mother's attachment has a substantially stronger effect in reducing the odds of selling drugs compared to father's attachment. The Cox and Snell R^2 and the

Nagelkerke R^2 coefficients suggest the model has a weak level of goodness-of-fit that is substantially weaker than the self-control model and also weaker than the social learning model (see Table 4.10, .037 and .064, compared to .092 and .160 and .256 and .443 respectively).

The results of the estimation of the full logistic regression model containing the blocks of variables from each theoretical perspective and the control variables are presented in Table 4.11. The full model was also found to fit the sample data (see chi-square test for Models 1 and 2 in Table 4.11). The effect of self-control was again not found to be conditioned by sex in influencing illicit drug sales in the full model (see Model 1). Removing this interaction effect from the model, self-control was not found to have a significant effect on selling illicit drugs, holding sex constant and all other independent variables in the full model.

The effect of gang membership on the odds of selling illicit drugs was not found to be conditioned by sex. Gang membership was found to be significant and positive ($b=1.177$, $p\leq.001$). Sex was also found to be significant and positive, indicating that males are 89.5% more likely than female to sell illicit drugs. The pattern of significant of the social learning and social bonding variables change in the full model compared to the partial models. Both mother's attachment and father's attachment were not found to have a significant effect on the odds of selling illicit drugs when controlling for the other independent variables (see Model 2 in Table 4.11). Among the control variables, experiencing serious violence victimization, sex, having access to alcohol and drugs were found to have a significant, positive effect on the odds of selling illicit drugs, while a juvenile being white or Hispanic were found to have a significant, negative effect on these odds.

An examination of the standardized logistic regression coefficients indicated that associating with delinquent peers had by far the strongest effect on the odds of selling illicit drugs (see Model 2 in Table 4.11). This was followed by having access to alcohol and drugs, being white, being male, being a gang member, and experiencing serious violence victimization. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients (.312 and .550) suggest the full model has a moderate level of goodness-of-fit that provides an improvement in explanatory power over the social learning variables alone.

Table 4-10: **Logistic Regression Predicting Illicit Drug Sale by Theoretical Perspective**

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.155***	-.307	.013	.857	-.164***	-.322	.008	.849
Social Learning								
Negative Peers	_	_	_	_	_	_	_	_
Positive Peers	_	_	_	_	_	_	_	_
Pro-Social Peers	_	_	_	_	_	_	_	_
Delinquent Peers	_	_	_	_	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	_	_	_	_
Father's Attachment	_	_	_	_	_	_	_	_
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_

Table 4.10: Logistic Regression Predicting Illicit Drug Sale by Theoretical Perspective (Continued)

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	.806*	.137	.359	2.239	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	-.007	-.028	.016	.933	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	1.434***		.281	4.194	2.012***		.172	7.477
Chi-Square	591.139*** (df=3)				528.203*** (df=1)			
-2 Log Likelihood	4064.503				4172.902			
Cox & Snell R^2	.103				.092			
Nagelkerke R^2	.179				.160			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4.10: Logistic Regression Predicting Illicit Drug Sale by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	_	_	_	_	_	_	_	_
Social Learning								
Negative Peers	.089***	.109	.015	1.093	_	_	_	_
Positive Peers	-.102***	-.08	.022	.903	_	_	_	_
Pro-Social Peers	-.033***	-.077	.009	.967	_	_	_	_
Delinquent Peers	.091***	.443	.004	1.095	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	-.054***	-.158	.005	.948
Father's Attachment	_	_	_	_	-.017***	-.059	.005	.983
Controls								
Gang Member	_	_	_	_	_	_	_	_
Serious Victimization	_	_	_	_	_	_	_	_
Minor Victimization	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_

Table 4.10: Logistic Regression Predicting Illicit Drug Sale by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	_	_	_	_	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	_	_	_	_	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	-4.416***		.347	.012	.211***		.142	1.235
Chi-Square	1518.984*** (df=4)				190.137*** (df=2)			
-2 Log Likelihood	2900.992				4109.681			
Cox & Snell R^2	.256				.037			
Nagelkerke R^2	.443				.064			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4-11: **Logistic Regression Predicting Illicit Drug Sale (Full Model)**

Variable	Model 1				Model 2			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.008	-.015	.021	.992	-.007	-.015	.016	.933
Social Learning								
Negative Peers	.022	.025	.024	1.023	.023	.025	.024	1.023
Positive Peers	-.095**	-.067	.033	.909	-.095**	-.067	.033	.909
Pro-Social Peers	-.027	-.056	.015	.974	-.027	-.055	.015	.974
Delinquent Peers	.067***	.295	.006	1.069	.067***	.295	.006	1.069
Social Bonding								
Mother's Attachment	-.010	-.026	.010	.990	-.010	-.026	.010	.990
Father Attachment	.008	.023	.008	1.008	.008	.024	.008	1.008
Controls								
Gang Member	.946***	.083	.293	2.575	1.177***	.103	.196	3.243
Serious Victimization	.636***	.075	.164	1.889	.649***	.077	.163	1.913
Minor Victimization	.263	.042	.151	1.301	.253	.041	.150	1.288
Intact	-.469	-.067	.312	.626	-.472	-.068	.311	.624
Mother-Only	-.411	-.052	.327	.663	-.422	-.054	.326	.656
Father-Only	-.236	-.014	.430	.791	-.233	-.013	.429	.792
Mother's Education	-.023	-.004	.164	.977	-.015	-.002	.163	.985

Table 4.11: Logistic Regression Predicting Illicit Drug Sale (Full Model)

Variable	Model 1				Model 2			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Father's Education	.119	.019	.165	1.126	.116	.018	.165	1.124
Leisure	.012	.176	.223	1.012	.016	.002	.223	1.017
Alcohol and Drugs	1.328***	.013	.168	3.773	1.327***	.199	.167	3.770
Age	.085	.115	.117	1.089	.090	.018	.117	1.094
Sex	.580	.149	.595	1.787	.639***	.103	.147	1.895
White	-.927***	-.149	.232	.396	-.919***	-.148	.231	.399
Black	-.438	-.056	.255	.646	-.428	-.055	.255	.652
Hispanic	-.663**	-.079	.259	.510	-.656*	-.078	.259	.519
Asian	-.582	-.044	.472	.559	-.560	-.042	.472	.571
Sex*Self-Control	.000	.001	.026	1.000	_	_	_	_
Sex*Gang Member	.413	.029	.388	1.511	_	_	_	_
Constant	-4.540		1.777	.011	-4.676**		1.751	.009
Chi-Square	1154.470*** (df=25)				1153.312*** (df=23)			
-2 Log Likelihood	1432.008				1433.166			
Cox & Snell R^2	.313				.312			
Nagelkerke R^2	.550				.550			

Note: *p≤.05, **p≤.01, ***p≤.001

Model Predicting Gang Membership

Table 4.12 reports the results of the logistic regression analyses when regressing whether or not a juvenile is in a gang on independent variables drawn from each of the competing theoretical perspectives considered as separate blocks (self-control, social learning, and social bonding). The full model analyzing the effects of these variables plus the control variables is presented in Table 4.13.

The first self-control model (see Table 4.12) indicates the self-control does not interact with sex in influencing gang membership by juveniles in the sample. Excluding this interaction effect, self-control was found to have a negative effect on the odds of joining a gang (see second self-control model; b=-.150, p≤.001). The odds ratio for the self-control was 0.860, indicating that the odds of joining a gang decreased by 14.0% for every unit increase in self-control. While the chi-square coefficient indicates this model fits the sample data, the Cox and Snell R^2 .054 and the Nagelkerke R^2 .117 coefficients indicate only a weak goodness-of-fit. This suggests that low self-control is not a strong determinant of whether a juvenile will join a gang.

The logistic regression model containing only the block of social learning variables was found to fit the sample data (see Table 4.12). Consistent with the social learning perspective, association with positive peers and pro-social peers were found to have a negative effect on joining a gang (b=-.056; p≤.05 and b=-.028, p≤.01) while association with delinquent peers and association with negative peers were both found to have a positive effect (b=.063, p≤.001 and b=.148, p≤.001, respectively). The standardized logistic regression coefficients indicate that association with delinquent peers had the strongest effect on the odds of joining a gang, followed by association with negative peers, a lack of pro-social peers and a lack of positive peers. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a moderate level of goodness-of-fit that is substantially greater than the self-control model (see Table 4.12, .154 and .336 compared to .054 and .117).

The logistic regression model containing the block of social bonding variables was found to fit the sample data (see Table 4.12). Partially consistent with this theoretical perspective, mother's attachment was found to have a significant, negative effect on the odds that a juvenile will join a gang. Father's attachment was not found to be significant. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a weak level of goodness-of-fit that is

substantially weaker than the self-control model and also weaker than the social learning model (see Table 4.12, .020 and .046, compared to .154 and .336 and .054 and .117 respectively).

The results of the estimation of the full logistic regression model containing the blocks of variables from each theoretical perspective and the control variables are presented in Table 4.13. The full model was also found to fit the sample data (see chi-square test for Models 1 and 2 in Table 4.13). The effect of self-control was again not found to be conditioned by sex in influencing gang membership in the full model (see Model 1). Removing this interaction effect from the model, self-control was not found to have a significant effect on gang membership, holding sex constant and all other independent variables in the full model. Sex was not found to be significant.

The pattern of significance of the social learning and social bonding variables is changed in the full model compared to the partial models. Both positive peers and pro-social peers drop of being significant. Negative peers and delinquent peers were found to be significant and positive. In addition, mother's attachment was not found to have a significant effect on the odds of joining a gang. Among the control variables, experiencing serious violence victimization, having access to alcohol and drugs, and age were found to have a significant, positive effect on the odds of joining a gang, while a juvenile being white and belong to an intact family were found to have a significant, negative effect on these odds.

An examination of the standardized logistic regression coefficients indicated that associating with delinquent peers had by far the strongest effect on the odds of joining a gang (see Model 2 in Table 4.13). This was followed by negative peers, having access to drugs and alcohol, serious violent victimization, intact family, and age. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients (.182 and .421) suggest the full model has a moderate level of goodness-of-fit that provides a slight improvement in explanatory power over the social learning variables alone.

Table 4-12: **Logistic Regression Predicting Gang Membership by Theoretical Perspective**

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.156***	-.271	.015	.856	-.150***	-.270	.009	.860
Social Learning								
Negative Peers	_	_	_	_	_	_	_	_
Positive Peers	_	_	_	_	_	_	_	_
Pro-Social Peers	_	_	_	_	_	_	_	_
Delinquent Peers	_	_	_	_	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	_	_	_	_
Father's Attachment	_	_	_	_	_	_	_	_
Controls								
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_

Table 4.12: Logistic Regression Predicting Gang Membership by Theoretical Perspective (Continued)

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Sex	211	.030	.418	1.235	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	.014	.052	.019	1.014	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	.920**		.334	2.509	1.098***		.198	2.998
Chi-Square	332.713*** (df=3)				303.101***(df=1)			
-2 Log Likelihood	3000.785				3069.331			
Cox & Snell R^2	.060				.054			
Nagelkerke R^2	.130				.117			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4.12: Logistic Regression Predicting Gang Membership by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	_	_	_	_	_	_	_	_
Social Learning								
Negative Peers	.148***	.182	.017	1.159	_	_	_	_
Positive Peers	-.056*	-.045	.025	.945	_	_	_	_
Pro-Social Peers	-.028**	-.065	.011	.972	_	_	_	_
Delinquent Peers	.063***	.315	.004	1.065	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	-.046***	-.105	.007	.955
Father's Attachment	_	_	_	_	-.022	-.029	.006	.978
Controls								
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_

Table 4.12: Logistic Regression Predicting Gang Membership by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Sex	_	_	_	_	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-control	_	_	_	_	_	_	_	_
Sex* Gang Member	_	_	_	_	_	_	_	_
Constant	-5.017***		.402	.007	-.545**		.174	.580
Chi-Square	855.651**** (df=4)				104.338*** (df=2)			
-2 Log Likelihood	2283.358				2875.004			
Cox & Snell R^2	.154				.020			
Nagelkerke R^2	336				.046			

Note:*p≤.05, **p≤.01, ***p≤.001

Table 4-13: **Logistic Regression Predicting Gang Membership (Full Model)**

Variable	Model 1				Model 2			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.024	-.047	.024	.976	-.008	-.167	.018	.992
Social Learning								
Negative Peers	.146***	.159	.027	1.157	.146***	.161	.027	1.157
Positive Peers	-.026	-.018	.037	.974	-.027	-.019	.037	.974
Pro-Social Peers	-.026*	-.053	.016	.975	-.026	-.054	.016	.974
Delinquent Peers	.045***	.198	.007	1.046	.045***	.199	.007	1.046
Social Bonding								
Mother's Attachment	.008	.02	.011	1.008	.008	.02	.011	1.008
Father Attachment	.009**	.026	.009	1.009	.009	.026	.009	1.009
Controls								
Serious Victimization	.998***	.117	.177	2.712	.999***	.118	.177	2.716
Minor Victimization	-.071	-.011	.177	.932	-.067	-.011	.177	.935
Intact	-.721*	-.102	.317	.486	-.724*	-.104	.316	.485
Mother-Only	-.401	-.05	.330	.670	-.402	-.051	.328	.669
Father-Only	-.554	-.032	.456	.575	-.552	-.032	.455	.576
Mother's Education	-.014	-.002	.194	.986	-.015	-.002	.194	.985

Table 4.13: Logistic Regression Predicting Gang Membership (Full Model)

Variable	Model 1				Model 2			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Father's Education	-.090	-.014	.198	.914	-.088	-.014	.198	.916
Leisure	.131	.017	.256	1.0140	.135	.018	.256	1.144
Alcohol and Drugs	.796***	.118	.205	2.216	.792***	.119	.205	2.208
Age	.353**	.069	.127	1.423	.349**	.069	.127	1.417
Sex	-.404	-.064	.633	.667	.209	.034	.170	1.233
White	-.701**	-.122	.269	.496	-.699**	-.113	.269	.497
Black	.101	.013	.287	1.107	.109	.014	.287	1.115
Hispanic	.153	.018	.283	1.166	.167	.020	.282	1.182
Asian	-.052	-.004	.528	.949	-.038	-.003	.525	.963
Sex*Self-Control	.029	.118	.029	1.030	_	_	_	_
Constant	-9.617		1.947	.457	-9.905***		1.928	.000
Chi-Square	621.170*** (df=23)				620.154***(df=22)			
-2 Log Likelihood	1125.651				1126.666			
Cox & Snell R^2	.182				.182			
Nagelkerke R^2	.422				.421			

Note: *p≤.05, **p≤.01, ***p≤.001

Models Predicting Victimization

Serious Victimization

Table 4.14 reports the results of the logistic regression analyses when regressing whether or not a juvenile experienced a serious violent victimization on independent variables drawn from each of the competing theoretical perspectives considered as separate blocks (self-control, social learning, and social bonding). The full model analyzing the effects of these variables plus the control variables is presented in Table 4.15.

The first self-control model (see Table 4.14) indicates the self-control does not interact with sex in influencing serious violence victimization for juveniles in the sample. Excluding this interaction effect, self-control was found to have a negative effect on the odds of experiencing serious violent victimization (see second self-control model; b=-.102, $p \leq .001$). The odds ratio for the self-control was 0.903, indicating that the odds of serious victimization decreased by 9.7% for every unit increase in self-control. While the chi-square coefficient indicates this model fits the sample data, the Cox and Snell R^2 .043 and the Nagelkerke R^2 .073 coefficients indicate only a weak goodness-of-fit. This suggests that low self-control is not a strong determinant of serious victimization for juveniles in the sample.

The logistic regression model containing only the block of social learning variables was found to fit the sample data (see Table 4.14). Association with pro-social peers or negative peers was not found to be systematically related to the odds of serious victimization. However, association with positive peers was found to have a negative effect on serious victimization (b=-.064; $p \leq .001$) while association with delinquent peers was found to have a positive effect (b=.044, $p \leq .001$). The standardized logistic regression coefficients indicate that association with delinquent peers had the strongest effect on serious victimization, followed by association with positive peers. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a weak level of goodness-of-fit that is substantially greater than the self-control model (see Table 4.14, .082 and .140 compared to .042 and .073).

The logistic regression model containing the block of social bonding variables was found to fit the sample data (see Table 4.14). Consistent with this theoretical perspective, mother's attachment and father's attachment were found to have a significant, negative effect on the odds that a juvenile will experience a serious violent victimization. A comparison of the standardized

logistic regression coefficients indicates that mother's attachment has a substantially stronger effect in reducing the odds of serious victimization compared to father's attachment. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a weak level of goodness-of-fit that is substantially weaker than the self-control model and also weaker than the social learning model (see Table 4.14, .017 and .029, compared to .043 and .073 and .082 and .140 respectively).

The results of the estimation of the full logistic regression model containing the blocks of variables from each theoretical perspective and the control variables are presented in Table 4.15. The full model was also found to fit the sample data (see chi-square test for Models 1 and 2 in Table 4.15). The effect of self-control was again not found to be conditioned by sex in influencing serious victimization in the full model (see Model 1). Removing this interaction effect from the model, self-control was found not to have a significant effect on serious victimization, holding sex constant and all other independent variables in the full model.

The effect of gang membership on the odds of serious victimization was found to be conditioned by sex in Model 1. However, when this interaction is included in the full model, it drops from being significant (see Model 2). The partial logistic regression coefficient for gang member is not significant. Sex is found to have a significant, positive effect on serious victimization. Males are more likely than females to report serious victimization. The pattern of significance of the social learning and social bonding variables were not the same in the full model compared to the partial models. Delinquent peers were found to be significant and positive. Both mother's attachment and father's attachment was not found to have a significant effect on the odds of serious victimization when controlling for the other independent variables (see Model 2 in Table 4.15). Among the control variables, committing a personal offense, selling illicit drugs, using illicit drugs, and sex were found to have a significant, positive effect on the odds of serious victimization, while a juvenile being white was found to have a significant, negative effect on these odds.

An examination of the standardized logistic regression coefficients indicated that selling illicit drugs had by far the strongest effect on the odds of serious violent victimization (see Model 2 in Table 4.15). This was followed by committing a personal offense, being white, delinquent peers, and sex. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients (.149 and

.256) suggest the full model has a moderate level of goodness-of-fit that provides a slight improvement in explanatory power over the social learning variables alone.

Table 4-14: **Logistic Regression Predicting Serious Victimization by Theoretical Perspective**

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.096***	-.199	.012	.908	-.102***	-.212	.007	.903
Social Learning								
Negative Peers	_	_	_	_	_	_	_	_
Positive Peers	_	_	_	_	_	_	_	_
Pro-Social Peers	_	_	_	_	_	_	_	_
Delinquent Peers	_	_	_	_	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	_	_	_	_
Father's Attachment	_	_	_	_	_	_	_	_
Controls								
Gang Member	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Property Offense	_	_	_	_	_	_	_	_

Table 4.14: Logistic Regression Predicting Serious Victimization by Theoretical Victimization (Continued)

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Personal Offense								
Sold Illicit Drugs								
Illicit Drug Use								
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	.811*	.144	.334	2.251	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	.002	.007	.014	1.002	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	.119		.271	1.126	.738***	.156		2.091
Chi-Square	367.404*** (df=3)				245.572***(df=1)			
-2 Log Likelihood	4572.127				4736.929			
Cox & Snell R^2	.064				.043			
Nagelkerke R^2	.109				.073			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4.14: Logistic Regression Predicting Serious Victimization by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	_	_	_	_	_	_	_	_
Social Learning								
Negative Peers	.020	.029	.013	1.020	_	_	_	_
Positive Peers	-.064***	-.061	.019	.938	_	_	_	_
Pro-Social Peers	-.007	-.019	.007	.993	_	_	_	_
Delinquent Peers	.044***	.260	.003	1.045	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	-.036***	-.109	.005	.965
Father's Attachment	_	_	_	_	-.011**	-.041	.005	.989
Controls								
Gang Member	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Property Offense	_	_	_	_	_	_	_	_

Table 4.14: Logistic Regression Predicting Serious Victimization by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Personal Offense	_	_	_	_	_	_	_	_
Sold Illicit Drugs	_	_	_	_	_	_	_	_
Illicit Drug Use	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	_	_	_	_	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-control	_	_	_	_	_	_	_	_
Sex* Gang Member	_	_	_	_	_	_	_	_
Constant	-2.703***		.290	.067	-.367**		.140	.693
Chi-Square	448.127*** (df=4)				88.144*** (df=2)			
-2 Log Likelihood	4197.038				4468.498			
Cox & Snell R^2	.082				.017			
Nagelkerke R^2	.140				.029			

Note:*p≤.05, **p≤.01, ***p≤.001

Table 4-15: **Logistic Regression Predicting Serious Victimization (Full Model)**

Variable	Model 1				Model 2			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	-.039*	-.090	.017	.961	-.024	-.055	.012	.976
Social Learning								
Negative Peers	-.021	-.027	.020	980	-.020	-.027	.020	.980
Positive Peers	-.033	-.027	.028	.968	-.033	-.028	.028	.968
Pro-Social Peers	.015	.037	.011	1.015	.015	.038	.011	1.015
Delinquent Peers	.015**	.077	.006	1.015	.014**	.077	.006	1.015
Social Bonding								
Mother's Attachment	-.010	-.030	.008	.990	-.010	-.031	.008	.990
Father Attachment	-.006	-.021	.007	.994	-.006	-.021	.007	.994
Controls								
Gang Member	.323	.034	.274	1.381	.396	.041	.267	1.486
Intact	-.436**	-.073	.241	.647	-.435	-.075	.240	.647
Mother-Only	-.217	-.032	.252	.805	-.213	-.032	.251	.808
Father-Only	.230	.016	.337	1.259	.223	.015	.337	1.250
Mother's Education	-.038	-.007	.132	.963	-.039	-.007	.132	.962
Father's Education	-.076	-.014	.133	.927	-.078	-.015	.133	.925
Leisure	-.041	-.006	.158	.960	-.032	-.005	.158	.968
Property Offense	.041	.008	.135	1.042	.042	.008	.135	1.042

Table 4.15: Logistic Regression Predicting Serious Victimization (Full Model)

Variable	Model 1				Model 2			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Personal Offense	.779***	.148	.139	2.179	.788***	.107	.139	2.199
Sold Illicit Drugs	.615***	.083	.156	1.849	.609***	.113	.156	1.838
Illicit Drug Use	.314*	.058	.159	1.369	.310*	.056	.159	1.364
Alcohol and Drugs	.153	.027	.148	1.165	.154	.028	.147	1.167
Age	.003	.001	.091	1.003	-.002	-.001	.091	.998
Sex	-.124	-.024	.485	.883	.520***	.023	.127	1.683
White	-.410*	-.078	.198	.664	-.407*	-.078	.198	.666
Black	.191	.029	.213	1.210	.195	.03	.213	.1.215
Hispanic	-.399	-.056	.226	.671	-.386	-.055	.226	.680
Asian	-.348	-.031	.339	.706	-.336	-.03	.321	.714
Sex*Self-Control	.028	.133	.020	1.028	_	_	_	_
Sex*Gang Member	.706*	.058	.330	2.026	.601	.051	.321	1.825
Constant	-1.489		1.397	.226	-1.798		1.378	.166
Chi-Square (df=27)	490.588*** (df=27)				488.695*** (df=26)			
-2 Log Likelihood	2150.459				2152.352			
Cox & Snell R^2	.150				.149			
Nagelkerke R^2	.257				.256			

Note: *p≤.05, **p≤.01, ***p≤.001

Minor Victimization

Table 4.16 reports the results of the logistic regression analyses when regressing whether or not a juvenile experiences minor violence victimization on independent variables drawn from each of the competing theoretical perspectives considered as separate blocks (self-control, social learning, and social bonding). The full model analyzing the effects of these variables plus the control variables is presented in Table 4.17.

The first self-control model (see Table 4.16) indicates the self-control does not interact with sex in influencing minor violent victimization for juveniles in the sample. Excluding this interaction effect, self-control was found to have a negative effect on the odds of minor violent victimization (see second self-control model; b=-.060, p≤.001). The odds ratio for the self-control was 0.941, indicating that the odds of selling drugs decreased by 5.9% for every unit increase in self-control. While the chi-square coefficient indicates this model fits the sample data, the Cox and Snell R^2 .029 and the Nagelkerke R^2 .039 coefficients indicate only a weak goodness-of-fit. This suggests that low self-control is not a strong determinant of minor violent victimization.

The logistic regression model containing only the block of social learning variables was found to fit the sample data (see Table 4.16). Association with pro-social peers and positive peers was not found to be systematically related to the odds of minor victimization. However, association with negative peers and delinquent peers was found to have a positive effect on minor victimization (b=.022; p≤.001 and b=.027, p≤.001, respectfully). The standardized logistic regression coefficients indicate that association with delinquent peers had the strongest effect on the odds of experiencing minor victimization, followed by association with negative peers. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a moderate level of goodness-of-fit that is substantially greater than the self-control model (see Table 4.16, .044 and .059 compared to .029 and .039).

The logistic regression model containing the block of social bonding variables was found to fit the sample data (see Table 4.16). Partially consistent with this theoretical perspective, mother's attachment was found to have a significant, negative effect on the odds that a juvenile experienced minor violent victimization. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients suggest the model has a weak level of goodness-of-fit that is substantially weaker

than the self-control model and also weaker than the social learning model (see Table 4.16, .018 and .024, compared to .029 and .039 and .044 and .059 respectively).

The results of the estimation of the full logistic regression model containing the blocks of variables from each theoretical perspective and the control variables are presented in Table 4.17. The full model was also found to fit the sample data (see chi-square test for Models 1 and 2 in Table 4.17). The effect of self-control was again not found to be conditioned by sex in influencing minor victimization in the full model (see Model 1). Removing this interaction effect from the model, self-control was not found to have a significant effect on minor victimization, holding sex constant and all other independent variables in the full model.

The effect of gang membership on the odds of minor victimization was not found to be conditioned by sex (see Model 1). The partial logistic coefficient for gang membership and sex was not found to be significant in predicting minor victimization. The pattern of significance of the social learning and social bonding variables change in the full model compared to the partial models. Delinquent peers drop from significance while negative peers have a significant, negative effect on minor victimization. Father attachment is found to have a significant, negative effect on the odds of minor victimization when controlling for the other independent variables (see Model 2 in Table 4.17). Among the control variables, committing a property offense and committing a personal offense were found to have a significant, positive effect on the odds of minor victimization, while a juvenile in intact families was found to have a significant, negative effect on these odds.

An examination of the standardized logistic regression coefficients indicated that committing a personal offense had the strongest effect on the odds of minor victimization (see Model 2 in Table 4.17). This was followed by intact family, father's attachment, negative peers, and committing a property offense. The Cox and Snell R^2 and the Nagelkerke R^2 coefficients (.199 and .266) suggest the full model has a moderate level of goodness-of-fit that provides a slight improvement in explanatory power over the social learning variables alone.

Table 4-16: **Logistic Regression Predicting Minor Victimization by Theoretical Perspective**

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.063***	-.175	.007	.939	-.060***	-.171	.005	.941
Social Learning								
Negative Peers	_	_	_	_	_	_	_	_
Positive Peers	_	_	_	_	_	_	_	_
Pro-Social Peers	_	_	_	_	_	_	_	_
Delinquent Peers	_	_	_	_	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	_	_	_	_
Father's Attachment	_	_	_	_	_	_	_	_
Controls								
Gang Member	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Property Offense	_	_	_	_	_	_	_	_

Table 4.16: Logistic Regression Predicting Minor Victimization by Theoretical Perspective (Continued)

Variable	Model 1 (Self-Control)				Model 2 (Self-Control)			
	b	**ß**	**S.E.**	**Odds Ratio**	**b**	**ß**	**S.E.**	**Odds Ratio**
Personal Offense	_	_	_	_	_	_	_	_
Sold Illicit Drugs	_	_	_	_	_	_	_	_
Illicit Drug Use	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	.308	.074	.245	1.361	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	.014	.085	.010	1.014	_	_	_	_
Sex*Gang Member	_	_	_	_	_	_	_	_
Constant	1.214***		.177	3.366	1.468***		.120	4.341
Chi-Square	307.314*** (df=3)				164.411***(df=1)			
-2 Log Likelihood	7285.419				7478.230			
Cox & Snell R^2	.055				.029			
Nagelkerke R^2	.073				.039			

Note: *p≤.05, **p≤.01, ***p≤.001

Table 4.16: Logistic Regression Predicting Minor Victimization by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Self-Control								
Self-Control	_	_	_	_	_	_	_	_
Social Learning								
Negative Peers	.022*	.035	.010	1.022	_	_	_	_
Positive Peers	-.019	-.02	.014	.982	_	_	_	_
Pro-Social Peers	-.001	-.003	.005	.999	_	_	_	_
Delinquent Peers	.027***	.179	.003	1.028	_	_	_	_
Social Bonding								
Mother's Attachment	_	_	_	_	-.030***	-.119	.004	.970
Father's Attachment	_	_	_	_	-.006	-.028	.003	.994
Controls								
Gang Member	_	_	_	_	_	_	_	_
Intact	_	_	_	_	_	_	_	_
Mother-Only	_	_	_	_	_	_	_	_
Father-Only	_	_	_	_	_	_	_	_
Mother's Education	_	_	_	_	_	_	_	_
Father's Education	_	_	_	_	_	_	_	_
Leisure	_	_	_	_	_	_	_	_
Property Offense	_	_	_	_	_	_	_	_

Table 4.16: Logistic Regression Predicting Minor Victimization by Theoretical Perspective (Continued)

Variable	Social Learning				Social Bonding			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Personal Offense	_	_	_	_	_	_	_	_
Sold Illicit Drugs	_	_	_	_	_	_	_	_
Illicit Drug Use	_	_	_	_	_	_	_	_
Alcohol and Drugs	_	_	_	_	_	_	_	_
Age	_	_	_	_	_	_	_	_
Sex	_	_	_	_	_	_	_	_
White	_	_	_	_	_	_	_	_
Black	_	_	_	_	_	_	_	_
Hispanic	_	_	_	_	_	_	_	_
Asian	_	_	_	_	_	_	_	_
Sex*Self-Control	_	_	_	_	_	_	_	_
Sex* Gang Member	_	_	_	_	_	_	_	_
Constant	-.849***		.222	.428	1.054**		.114	2.869
Chi-Square	233.947*** (df=4)				93.176***(df=2)			
-2 Log Likelihood	6934.581				7003.160			
Cox & Snell R^2	.044				.018			
Nagelkerke R^2	.059				.024			

Note:*p≤.05, **p≤.01, ***p≤.001

Table 4-17: **Logistic Regression Predicting Minor Victimization (Full Model)**

Variable	Model 1				Model 2			
	b	**β**	**S.E.**	**Odds Ratio**	**b**	**β**	**S.E.**	**Odds Ratio**
Self-Control								
Self-Control	-.025*	-.068	.011	.975	-.015	-.041	.009	.985
Social Learning								
Negative Peers	-.032*	-.048	.016	.969	-.032*	-.048	.016	.969
Positive Peers	.020	.02	.022	1.020	.019	.019	.022	1.019
Pro-Social Peers	.004	.012	.008	1.004	.004	.011	.008	1.004
Delinquent Peers	-.007	-.042	.005	.993	-.007	-.045	.005	.993
Social Bonding								
Mother's Attachment	-.004	-.013	.007	.996	-.004	-.014	.007	.996
Father Attachment	-.016**	-.064	.005	.984	-.016**	-.064	.005	.984
Controls								
Gang Member	.136	.016	.257	1.146	-.093	-.011	.175	.911
Intact	-.514*	-.1	.212	.598	-.504*	-.099	.211	.604
Mother-Only	-.420	-.073	.222	.657	-.402	-.07	.222	.669
Father-Only	-.125	-.01	.308	.883	-.108	-.001	.308	.898
Mother's Education	.103	.022	.097	1.108	.099	.021	.096	1.104
Father's Education	-.069	-.015	.097	.933	-.068	-.015	.097	.934
Leisure	.130	.024	.107	1.139	.132	.024	.106	1.141
Property Offense	.203*	.045	.098	1.225	.197*	.044	.098	1.218

Table 4.17: Logistic Regression Predicting Minor Victimization (Full Model)

Variable	Model 1				Model 2			
	b	β	S.E.	Odds Ratio	b	β	S.E.	Odds Ratio
Personal Offense	1.653***	.364	.092	5.223	1.660***	.259	.091	5.260
Sold Illicit Drugs	.154	.024	.150	1.166	.130	.028	.150	1.138
Illicit Drug Use	.181	.038	.104	1.198	.176	.036	.104	1.192
Alcohol and Drugs	.191	.039	.117	1.211	.202	.041	.117	1.223
Age	-.096	-.026	.070	.909	-.102	-.028	.070	.903
Sex	.103	.023	.370	1.108	.604	.133	.086	1.829
White	-.024	-.005	.162	.977	-.026	-.006	.162	.974
Black	-.199	-.035	.179	.820	-.204	-.036	.179	.815
Hispanic	-.228	-.037	.235	.796	-.219	-.036	.182	.803
Asian	-.296	-.031	.235	.744	-.296	-.031	.234	.744
Sex*Self-Control	.021	.12	.014	1.022	_	_	_	_
Sex*Gang Member	-.393	-.038	.317	.675	_	_	_	_
Constant	1.695		1.065	5.446				
Chi-Square	677.221*** (df=27)				672.382*** (df=25)			
-2 Log Likelihood	3516.303				3521.142			
Cox & Snell R^2	.201				.199			
Nagelkerke R^2	.267				.266			

Note: *p≤.05, **p≤.01, ***p≤.001

CHAPTER 5 - Conclusion

Summary of Theoretical Framework

It has now been two decades since the publication of Gottfredson and Hirschi's (1990) general theory of crime. Since its inception, over fifty empirical studies have been carried out to test the core assumptions of the general theory of crime. The theory posits that, when individuals are afforded with an opportunity, people with low self-control will commit various criminal and deviant behaviors. Low self-control is the direct result of poor parenting practices. Parents who fail to monitor, recognize, and discipline improper behaviors is said to be instilling low self-control into their child. Taking the classical social control stance, Gottfredson and Hirschi (1990) argue that people are rational human beings that weigh the cost and benefits of human behavior. They argue that criminal and deviant behaviors are easy and bring instant gratification. Therefore, those with low self-control are more likely than those with high self-control to commit crime and other deviant behaviors.

Regardless of methodology, low self-control has been consistently linked to many criminal and deviant behaviors, ranging from cutting class by college student to serious street crimes. Because of the large empirical studies, low self-control has been considered one of the strongest correlates of crime (Pratt and Cullen, 2000). Although Gottfredson and Hirschi (1990) presented their theory as a general theory of crime, scholars are now documenting that those with low self-control are also more likely to be victimized (Schreck, 1999; Nofziger, 2009). The same traits of low self-control as described by Gottfredson and Hirschi (i.e. risk-taking, impatient, insensitive, shortsighted, etc.) that increases the chances of committing a crime also increases the odds of becoming a victim. More particularly, individuals with low self-control are placing themselves in situations where the odds of their victimization increase presumably because they do not consider the consequences of their actions.

Contribution to the Literature

Recent studies support the expansion of self-control theory to the study of violent victimization. Several studies have found a direct effect between low levels of self-control and various forms of criminal victimization (Schreck, 1999; Piquero et al., 2005; Schreck et al., 2006). However, in spite of such research, the low self-control/criminal victimization link has

yet to be tested in a sample of youths involve in gangs. In order to fill this void in the literature, this research examined the relationship between gang membership, criminal perpetration, and violent victimization using Gottfredson and Hirschi (1990) general theory of crime.

Using data from the *Evaluation of the Gang Resistance Education and Training (GREAT) Program in the United States, 1995-1999*, the statistical analyses did not provide a high level of support for a link between these variables and self-control among juveniles in the sample. When statistically controlling for the social learning, social bonding, and other specified independent variables, self-control was found to be negatively correlated with whether or not a juvenile had committed a property offense or engaged in illicit drug use. In accordance with the theory, juveniles with low self-control were more likely to engage in these forms of criminal activity. However, statistically controlling for the aforementioned independent variables, self-control was not found to be correlated with whether or not a juvenile committed a personal offense, engaged in the sale of drugs, was a gang member, or was a victim of a serious or minor form of violence. Further, while found to be a significant correlate in the analyses of property offenses and illicit drug use, self-control did not have a strongest effect on the likelihood that a juvenile would engage in these forms of criminal activity compared to the other independent variables examined, particularly the social learning variables. These findings suggest that Gottfredson and Hirschi's general theory of crime is not applicable to understanding violent victimization and gang membership among juveniles in the cohort of 11 to 18 years of age. Further, the findings suggest that it is only applicable to understanding specific types of criminal perpetration among this cohort (i.e. property crime and illicit drug use).

Summary of Hypothesis and Their Results

Summary of the hypothsis and their results are presented in Table 5.1. The first hypothesis stated that parental attachment is positively related to self-control. It was predicted that youths with strong parental attachment will have higher self-control. A weighted least squares (WLS) regression model was produced to test this hypothesis. In accordance with Gottfredson and Hirschi (1990) assertion, this study found that youths with high mother attachment are more likely to possess high self-control than youths who did not report strong mother attachment. Interestingly, father attachment did not reach statistical significant levels, a finding that is contrary to the author's claim. Recall that Gottfredson and Hirschi (1990) stress

that low self-control is the result of poor parenting practices. They stress that attachment to both parents is necessary to instill strong self-control into their children. This was not the case in the current study. As mentioned above, the finding that high mother attachment leads to higher self-control is not completely unexpected, although Gottfredson and Hirschi (1990) have nothing to say about this matter. Children are now more likely to grow up in a single-parent or step family (Smeeding, Moynihan, and Rainwater, 2004) where mothers continue to be the primary caretaker. Therefore, there is no reason to believe that mothers cannot monitor, recognize, and discipline improper behaviors in their children as prescribed by Gottfredson and Hirschi (1990). It should be noted, however, that Gottfredson and Hirschi wrote their book during a time that single parent families were becoming more prevalent. This finding suggests that the theory needs to be updated to account for this social change (Usdansky, 2009). Finally, the standardized coefficients reported by the weighted least square regression model shows that negative peers is the most powerful predictor of self-control, providing evidence that parenting practices are not the sole influence of self-control. Once youths reach adolescents, peers become more influential.

The second hypothesis stated that males will have lower self-control than females. The results in this study supported this hypothesis. The weighted least square regression model shows that females have higher self-control than males. This finding is consistent with other studies that have reported similar findings. Gottfredson and Hirschi (1990) argue that females will always have higher self-control than males because parents are more likely to monitor, correct, and punish bad behavior stemming from girls than from boys. Interestingly, this finding suggests that one possible way to reduce crime is for the primary caretaker to monitor their boys the same way they monitor their girls. A caretaker's socialization practices appears to make a difference, and crime can be reduced if primary caretakers moved away from the traditional emphasis of masculinity for boys.

The third hypothesis stated that self-control will be negatively related to participation in criminal activities. That is, youths with high self-control would be less likely to participant in criminal behavior than youths with low self-control. Logistic regression models examining the effects of self-control demonstrated partial support of theory's ability to explain various forms of criminal offending. The results of this study showed that low self-control was predictive of committing property offense and illicit drug use. In particularly, those with high self-control are

less likely to commit a property offense and use drugs than those with low self-control. Contrary to the theory's claim that it explains all crimes, low self-control was not significant in predicting illicit drug sales or personal offenses. The fact that low self-control was not able to predict illicit drug sales could potentially be explained by the fact that illicit drug sales in middle schools is relatively rare (with only 15% of respondents indicated they sold illicit drugs). Similarly, low self-control may not have been able to explain personal offenses because it is unknown of who the recipient was or under what circumstance the violent act occurred. For example, it is possible that some of the youths were defending themselves from a bully attack. In such event, youths with high self-control were forced to commit a personal offense against his or her attacker for the sole reason of personal protection. In this situation, the high self-control some youths possess depleted or otherwise chose not to exercise high self-control (Tittle, Ward, and Garsmick, 2004). In these types of events, self-control becomes a choice and not an individual's distinct trait as proposed by Gottfredson and Hirschi (Wikström and Treiber, 2007; Wikström and Svensson, 2010). The interaction between sex and self-control was not found to be significant in any of the logistic regression models. Thus, the hypothesis that sex will interact with self-control in influencing participation in criminal activities is not supported.

The fourth hypothesis stated that gang members were more likely to participate in various forms of criminal activities. In line with previous studies (Decker and Van Winkle, 1996; Maxson and Klein, 2006; Thornberry et al., 1993; Thrasher, 1927), the results from this analysis showed that gang members were significantly more likely than non-gang members to be perpetrators of crime. In particular, gang members were more likely to participate in illicit drug use, personal offense, and selling drugs. However, gang members were not found to be more likely to commit a property offense than non-gang members. There are at least two reasons why gang membership may have failed to predict property offenses. First, recall that property offenses was measured by questions regarding the stealing of objects worth less and more than fifty dollars, and a question regarding auto theft. Although there is no question that gang members are still committing robbery and auto thefts, there is evidence to suggest that contemporary gangs are more involved in drug dealing (Padilla, 1996). The money generated in such enterprises leaves gang members without the need to steal. Second, gang membership was found to be non-significant, indicating that there were no statistically significant differences between gang and non-gang members in predicting property offenses. Given the nature of the

questions asked to measure the variable property offense, it is possible that some youths who were not gang members recorded stealing something worth more than fifty dollars when in actuality the theft was trivial (i.e. measurement error). It was found that sex did not interact with gang membership in influencing participation in criminal activities (Hypothesis 4a was not supported). The only exception to this was the commission of property offenses. Here it was found that being male and being a gang member significantly increase the odds of committing a property offense. In contrast, being a gang member and female was not correlated to committing a property offense. This effect was not found in relation to the other types of criminal activity that were examined. These findings suggest that committing property offenses is a gendered form of behavior within gangs that has become normative among male members.

The fifth hypothesis stated that youths will low self-control were more likely to be gang members than juveniles with high self-control. Results from the logistic regression model showed that the hypothesis was not supported. Low self-control was found to be non-significant in predicting gang membership in the full model. Self-control was predictive of gang membership only in the self-control model. However, once the variables from the competing theories were entered into the full model, the effect of self-control dropped from significance. Association with delinquent peers and negative peers were found to have the strongest effects on gang membership. These findings contradict Gottfredson and Hirschi's (1990) claim that individuals with low self-control select peers or groups based on a shared trait, i.e. low self-control. This result does, however, support the social learning prediction that delinquents have friends with similar criminal characteristics (Warr, 2002; Akers, 1998). This study lends support for other studies that have found that low self-control does not influence friendship selection (Chapple, 2005). Interestingly, illicit drug use was found to have the third strongest effect on gang membership. Recall that self-control was found to be systematically related to illicit drug use after statistically controlling for the social learning and social bonding variables. This suggests the possibility of a developmental sequence in which self-control influences illicit drug use, which in return, influences gang membership. Finally, it was also found that sex did not interact with self-control in influencing gang membership. Thus, hypothesis 5a was not supported.

The finding that self-control was not able to predict gang membership needs greater attention because self-control theory directly influences social formation with peers, according to

Gottfredson and Hirschi (1990). They argue that people with low self-control cannot make good friends because they are seen as untrustworthy, unreliable, and selfish. To combat this problem, Gottfredson and Hirschi argue that people with low self-control seek others "like them." The fact that this study did not find support between self-control and peer groups demonstrates that there other factors at play. Instead of determining whether self-control determines peer formations, future research should determine whether *selective mixing* is more important than *sociality*--the mechanism that Gottfredson and Hirschi argue creates groups of people with low self-control. Sociality refers to the propensity of an individual to form relationships, whereas selective mixing refers to the propensity for relationships to form among individuals because they share similar characteristics (McGloin and Shermer, 2009). In this case, peers may form gangs not because they lack self-control, but because they may have similar characteristics (i.e. family backgrounds, race/ethnicity, etc.). In these situations, self-control cannot explain gang formation.

The sixth hypothesis stated that low self-control will be negatively related to being a victim of violence. The results of the current study did not support the hypothesis. Low self-control was not predictive of being a victim of a minor or a serious form of violence. This finding does not replicate the link found in previous studies (Schreck, 1999; Stewart et al., 2004). In both models predicting criminal victimization, personal offense was the strongest predictor of becoming a victim. Such findings should not be surprising, as it is logic that those who victimize others run the risk of become victims themselves in the course of physical retaliation. Finally, the interaction between sex and self-control was not found to be statistically significant in neither models predicting serious and minor victimization. Thus, hypothesis 6a was not supported by the findings.

The seventh hypothesis stated that males were more likely to report being the victim of a violent offense than females. The results of logistic regression models partially support the hypothesis. In the logistic regression model predicting serious victimization, sex was found to be significant. However, sex was not found to be significant in the model predicting minor victimization. This finding is somewhat surprising because males have historically committed more crimes than females. Therefore, males should be more likely to become victims of both serious and minor victimization (Lauritsen, Heimer, and Lynch, 2009). Nevertheless, this finding is somewhat supportive of other studies that indicate that offenders and victims are

usually the same person, as committing criminal activities was predictive of victimization (Lauritsen and Laub, 2007; Lauritsen Laub, and Sampson, 1992; Lauritsen, Sampson, and Laub, 1991). This finding suggests that eliminating the cause of criminal behavior will can help eliminate violent victimization.

The final hypothesis stated that gang members were more likely to report more incidents of violent victimization than non-gang members. The results of the current study did not support the hypothesis. In particularly, gang members were not more likely to report being a victim of a serious or minor victimization than non-gang members. Previous studies (Taylor et al. 2007; Peterson et al. 2004; Gover et al. 2009) have shown that gang members are frequent victims of serious victimization by rival gangs, their own gang, or during the course of committing a criminal offense, all of which entails serious victimization. On the other hand, it is not surprising that non-gang members reported no difference in incidents of victimization than gang members. Minor victimization, for example, was composed by a question asking whether someone has ever hit them with the intention of hurting them. Taking into account the more prevalent act of school bullying (Nofziger, 2001), it is possible that non-gang members encounter more physical aggression while in school than gang members who are more likely to be victimization outside school grounds. More acts of minor victimization are captured by surveys using middle school youths than by other samples used to capture more serious victimization (Baron, 2003). The difference of victimization between gang and non-gang members is simply the different acts one group is more likely to experience than the other. No support was found for hypothesis 8a that sex interacts with gang membership in influencing victimization. Not only was there no significant difference between gang members and non-gang members in terms of victimization, it made no difference if the gang member were male or female. Thus, the pattern of victimization is not gendered among gang members even when considering the severity of violence involved.

Finally, the study findings support hypotheses 9 and 10. Association with delinquent peers was found to be positively associated with participation in criminal activities among youths in the sample. Further, stronger social bonds were found to be negatively related with participation in criminal activities.

Table 5-1: Summary of the Hypotheses Results

Hypothesis	Result
Hypothesis 1: Parental attachment is positively related to the degree of self-control.	Supported
Hypothesis 2: Male juveniles will have lower self-control than female juveniles.	Supported
Hypothesis 3: The degree of self-control will be negatively related to participation in criminal activities.	Partially Supported
Hypothesis 3a: Sex will interact with self-control in influencing participation in criminal activities.	Not Supported
Hypothesis 4: Gang members will be more likely to participate in criminal activities.	Partially Supported
Hypothesis 4a: Sex will interact with gang membership in influencing participation in criminal activities.	Not Supported
Hypothesis 5: Juveniles with low self-control will be more likely to be gang members.	Not Supported
Hypothesis 5a: Sex will interact with self-control in influencing gang membership.	Not Supported
Hypothesis 6: The degree of self-control will be negatively related to being a victim of violence.	Not Supported
Hypothesis 6a: Sex will interact with self-control in influencing whether a juvenile is a victim of violence.	Not Supported
Hypothesis 7: Male juveniles will report more incidents of violent victimization than female juveniles.	Partially Supported
Hypothesis 8: Gang members will report more incidents of violent victimization than non-gang members.	Not Supported
Hypothesis 8a:Sex will interact with gang membership in influencing whether a juvenile is a victim of violence.	Not Supported
Hypothesis 9: Association with delinquent peers is positively associated with criminal activities.	Supported
Hypothesis 10: Strong social bonds are negatively related with criminal activities.	Supported

Results from Competing Criminological Theories

Other interesting results revealed by the current study were the significance of other variables proposed by competing theories in predicting criminal behavior, particularly social learning and social bonding theory. Gottfredson and Hirschi (1990) boldly proclaim that low self-control is the cause of all criminal and deviant behavior. If this statement is true, then adding self-control into the regression models should eliminate the explanatory influence of both social learning and social bonding variables. This was not the case in the current study (see, Pratt et al. 2010).

The results of this study reveal that delinquent peers and associating with positive, negative and pro-social peers all influenced criminal behavior (see, Pratt et al. 2010). Mother attachment also predicted criminal behavior. In particular, association with delinquent peers is positively related with committing a property offense, a personal offense, illicit drug use, and selling drugs. In addition, associating with negative peers is positively associated with committing a property offense, a personal offense, and using drugs. Youths who lack positive peers were more likely to commit a property offense and sell drugs. Youths with pro-social friends were less likely to use drugs. Furthermore, associating with delinquent and negative peers was predictive of gang membership. In other words, youths that indicated that they had delinquent and negative friends were more likely to be gang members. Youths will strong mother attachment were less likely to commit a personal or property offense. The hypothesis concerning whether social learning and social bonding variables can predict various forms of criminal behavior is supported.

In both the partial block models and the full models estimated, the independent variables drawn from the social learning perspective consistently had more power in explaining participation in the types of criminal activity examined and gang membership compared to self-control and the variables drawn from social bonding perspective. This suggests that the nature of the peer group in which juveniles are socially embedded is most critical in influencing such behaviors. When considering by itself in a partial block model, self-control was found to be negatively correlated with participation in criminal activities and gang membership as specified by the general theory of crime. However, once the social learning, social bonding, and control variables were introduced, these significant effects "washed out" with the exceptions of the

property offense and illicit drug use models. This, combined with the fact that the social learning variables were found to have the strongest effects in each of the full models, suggests that association with deviant peers "deactivates" the effect of an individual's social control. Further, this may also indicate the possibility of a developmental sequence by which self-control influences the composition of a juvenile's peer group, which in turn, influences their participation in criminal activities and gangs.

This study adds fuel to the claim that when social learning variables is tested against other theories using the same data collected from the same samples, it is usually found to have greater support than theories with which it is pinned (see, for example, Burton et al., 1994). Such findings is found in numerous studies and as such as made Warr (2002; 40) declare that "No characteristic of individuals known to criminologists is better predictor of criminal behavior than the number of delinquent friends an individual has…Few, if any, empirical regularities in criminology have been documented as often or over as long a period as the association between delinquency and delinquent friends." However, it should be noted that most studies testing social learning theory by and large concentrate on minor forms of criminal and deviant behavior such as alcohol and illicit drug use by youths. More empirical studies are needed on the scope of the theory and criminologists should use this theory to explain various forms of serious criminal behavior.

Concerning victimization, only delinquent peers was negatively associated with minor victimization. Youths who lack delinquent peers were less likely to report being a victim. However, it should be noted that social learning and social bonding are criminological theories that explain criminal behavior, and say nothing regarding victimization. Therefore, this research supports the assertion that these theories are inappropriate for explaining victimization. The fact that a lack of delinquent peers decreases the odds of victimization simply reinforces the notion that delinquent youths are more likely to be victimized by their own delinquent peers. Taken together, these results show that Gottfredson and Hirschi (1990) claim that low self-control is the only cause of criminal behavior is clearly an exaggeration, and results from the current study are consistent with other studies that have shown that when low self-control is introduced into regression models, it fails to eliminate the influence of social learning and social bonding variables (Meldrum, Young, and Weerman, 2009; McGloin and Shermer, 2009; Alvarez-Rivera

and Fox, 2010). The results of this study seriously question the usefulness of self-control as the true explanation for criminal behavior.

Implications for Theory and Policy

With a few notable exceptions, the current analysis shows that low self-control was predictive of various forms of criminal behavior, but not serious or minor victimization. However, the current study also shows that variables stemming from social learning and social bonding theories were more predictive of criminal behavior. It was my hope that the results from this analysis will advance the notion that some theories used to explain criminal behavior can also explain victimization. The similarities between the criminal offender and the violent victim suggest that reducing criminal behavior may also reduce criminal victimization. In this case, it is important for criminologists to not only find the factors that increases criminal perpetration, but also identify the factors associated with violent victimization in the hopes of reducing the physical and emotional effect of victimization.

The results of this study suggest several venues for researchers to implement social programs that may help reduce criminal behavior, and thus criminal victimization (see, Piquero, Jennings, and Farrington, 2010). These recommendations, however, come with a small caveat. Given the fact that social learning variables better predicted criminal behavior than self-control, eliminating associations with delinquent peers would better help reduce criminal behavior than any recommendation based on self-control theory. Nevertheless, the results of the current study, as well as the many empirical studies that have been conducted to test the theory, suggest that building social programs that instill high self-control may contribute toward reducing criminal behavior and victimization (Piquero, Jennings, and Farrington, 2010). Since Gottfredson and Hirschi (1990) argue that self-control is installed between the ages of 8 through 10 years, then mentoring programs, after-school programs, and other school related activities should help children develop and exercise high self-control. Furthermore, Gottfredson and Hirschi (1990) state that the cause of self-control is poor parenting practices. This notion has been supported by prior research. Therefore, it is possible that creating programs that teach the primary caretaker proper parenting skills may help reduce both criminal behavior and violent victimization. Programs that teach caretakers how to properly supervise and correct undesirable behaviors may help instill high self-control into their children. Finally, school-age children spent a great part of

their day in school. While Gottfredson and Hirschi (1990) ultimately place the role of supervising, monitoring, and correcting undesirable to parents, schools administrators can help install high self-control by exercising these steps while the child is in school.

Limitations and Future Research

As with many other criminological studies, the results of the current analysis should be viewed with the study's limitations in mind. First, the sample composed in the current study was obtained through students attending public schools. This limitation reduces the ability to generalize these results to students not attending public schools. Caution should be exercised in applying these findings to students in private schools and students that are home-schooled. Second, the measures used to capture victimization are limited to one particular period, between the ages of 12 to 16. Therefore, the ability of low self-control to predict criminal behavior and violent victimization during other developmental phases of youths cannot be determined in the current study. Third, the primary investigators used Grasmick et al's (1993) index to capture self-control. Although this is the most widely used method of measuring self-control (Pratt and Cullen, 2000), several studies have demonstrated that the index may not be as reliable and valid as once thought (DeLisi, Hochstetler, and Murphy, 2003; Marcus, 2003; Higgins, 2007, Marcus, 2004). Perhaps this growing body of literature would benefit greatly if other researchers utilized other methods of capturing self-control other than the Grasmick et al index. Finally, as previously stated, the current data come from a cross-sectional design, which calls the causal time-ordering among some variables into question (see below).

The current analysis demonstrates at least five venues for future research. First, because of the nature of the data, it is not possible to determine the precise location of the respondent's actual victimization (i.e. whether it occurred at home, in the streets, at school, etc). Recollect that individuals with low self-control are more likely to place themselves in situations that increase their likelihood of becoming a victim. Therefore, future research should also document the conditions under which the respondent was victimized. Understanding the context that increased the respondent's victimization may get at the heart of the core argument that those with low self-control will place themselves in situations that increases victimization. Second, future research should incorporate measures of gender identity in studies of criminal perpetration and violent victimization. The association of males with masculinity and females with femininity

suggest that males commit more crime because of their masculine identity, while a female's identity prevents criminal behavior. Yet, no study has documented whether gender identity also helps explain criminal victimization. It is possible that male gang members victimize others in order to establish masculinity and those who are perceived as lacking masculinity may be victimized by their peers. Future research should incorporate gender identity to acquire a fuller picture on this possibility. Third, the criminal perpetration/violent victimization link should be tested with different racial and ethnic groups, as well as non-Western samples. The balk of empirical knowledge concerning self-control and violent victimization comes from samples consisting of whites and African-Americans. In particularly, future research should attempt to address this void by applying this link to Hispanics. The Hispanic population in the United States is continuing to increase, and their growing involvement in the criminal justice system becomes an important topic of study for criminologists. The generality of theory can only be confirmed when such studies are undertaken.

Fourth, future studies should attempt to apply the low self-control/victimization link to other victimization more commonly to today's youths. In particularly, this link should be tested on school bullying and cybercrime. School bullying continues to plague many school children (Haynie et al. 2001; Seals and Young, 2003), and studies examining the low self-control/victimization link may help explain why some children turn to bullying. Similarly, future studies should examine this link using cybercrime as the dependent variable. The creation of popular teen social networks such as *MySpace*, *Facebook*, and *Twitter*, provide another venue for teens to potentially victimize other teens through written insults, spreading rumors, or directly submitting a threat via the Internet. Cybercrime is starting the grab the attention of criminologists; with several criminologists applying traditional criminological theories to this new prevalent crime. Applying the low self-control/victimization link would help better understand this phenomenon. Finally, future studies should attempt to understand the temporal ordering between violent victimization and gang membership. It is important for criminologists to understand when victimization and gang membership occur to better understand the reasons why some youths join street gangs. Such research may help reduce gang membership.

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Appendix A - Variance Inflation Factors (VIF)

Variable	VIF	Variable	VIF
Mother Attachment	1.546	Sex	1.144
Father Attachment	1.437	Age	1.080
Gang Member	1.374	White	3.946
Serious Victimization	1.254	Black	3.017
Minor Victimization	1.305	Hispanic	2.686
Property Offense	1.468	Asian	1.764
Personal Offense	1.495		
Illicit drug sales	1.684		
Drug Use	1.511		
Intact Family	5.064		
Mother Only	4.428		
Father Only	1.730		
Mother's Education	1.299		
Father's Education	1.355		
Negative Peers	1.652		
Positive Peers	1.380		
Pro-Social Peers	1.806		
Delinquent Peers	2.655		
Leisure	1.134		
Alcohol and Drugs	1.773		

Appendix B - Student T-Test for Sex and Self-Control/Gang Membership

Group Statistics

	Sex	N	Mean	Std. Deviation	Std. Error Mean
LowSelfControl	Male	2676	23.6155	5.90692	.11419
	Female	2883	25.0173	5.68375	.10586

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
LowSelfControl	Equal variances assumed	2.726	.099	-9.016	5557	.000	-1.40187	.15548	-1.70668	-1.09707
	Equal variances not assumed			-9.003	5486.997	.000	-1.40187	.15571	-1.70712	-1.09663

Group Statistics

	Sex	N	Mean	Std. Deviation	Std. Error Mean
GangMem	Male	2728	.1191	.32401	.00620
	Female	2973	.0632	.24343	.00446

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
GangMem	Equal variances assumed	225.443	.000	7.402	5699	.000	.05590	.00755	.04109	.07070
	Equal variances not assumed			7.314	5042.262	.000	.05590	.00764	.04092	.07088