A TEST OF SELF-CONTROL IN A MEXICAN-AMERICAN SAMPLE

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ABSTRACT

A TEST OF SELF-CONTROL IN A MEXICAN-AMERICAN SAMPLE

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While many demographic groups have been used to explore the self-control theory, there has been little research using the Mexican population or those of differing generation. This paper explores the relationship between parenting, self-control, and delinquency in a sample of adolescents from the Project on Human Development in Chicago Neighborhoods, using samples of Mexican-Americans and those of different generational status to test the generalizability of the theory.

INTRODUCTION

Self-control theory is a micro-level crime theory associated with the control perspective. Rather than to ask why people choose to commit crime, these theories seek to explain why people do not commit crime. Control theories have been referred to as theories of conformity because they propose to be able to fit into society one must have a mechanism to control their hedonistic needs. Theories are classified as part of the control perspective if they share the basic premise that people are inherently hedonistic pleasure-seekers.

Control Theories

Emile Durkheim is often credited as one of the first control theorists due to the following statement "we are moral beings only to the extent that we are social beings" (Paternoster & Bachman, 2001, p. 74). This statement suggests that the need to be social is one source of control over criminal tendencies; without this need, morals would not be necessary, leaving an individual with freedom to offend. The more one internalizes

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society's norms, the greater one's conformity to moral standards (Hirschi, 1969); thus, the social setting is central to most control theories.

Amongst the early control theorists are Reiss, Toby, Nye, Reckless, and Hirschi. Reiss (1951) proposed that delinquency is the result of failed personal and social controls, and the key component to control is family attachment. Toby (1957) suggested that control theories explain conformity and not deviance, since conformity is the source of rewards and crime can put those rewards in jeopardy. Nye (1958) proposed two types of external control, direct and indirect; direct control is a concern that people are watching and indirect control is associated with the fear of getting caught.

Containment theory is Reckless's (1967) addition to the control theory literature. Reckless suggested that the urges one feels to commit delinquent acts could be nullified by two sources of containment. Inner containment is the control one has over urges, the source of which is a positive sense of self. Outer containment is supervision and discipline that comes from authority figures, such as parents, teachers, and police. *Causes of Delinquency* (1969) is Hirschi's first addition to control theory literature. This book presents social bond theory, which channels Durkheim's original sentiment and assumes morality varies among individuals. Hirschi proposed that this variation is based on a socialization process that involves psychological and social elements (i.e. attachment, commitment, belief, and involvement).

The psychological elements of Hirschi's theory includes an attachment to conventional others (i.e. those who conform to the norms of society), and borrows from Reiss (1951), parents and other family members as the key others. Those with an attachment to conventional others are more sensitive to the other's opinion, which lessens

the propensity to delinquency (Smith & Krohn, 1995; Taylor, 2001). A commitment to conventional society also makes one less likely to participate in delinquent behavior due to a fear of rejection (Taylor, 2001). Belief in conventional values is the last of the psychological elements of the theory. The greater an individual's belief in conventional values, the greater the control exhibited, and the lower the propensity to commit delinquent behavior (Hirschi, 1969, pp. 16-34). Involvement in conventional behavior is the theory's social element. Those who participate in conventional behavior (i.e. keeping busy with activities such as school, work, church, etc.) have little time to misbehave.

Hirschi did not place an emphasis on one element over another. Those who have studied bond theory, however, have different interpretations of the elements. Shoemaker (1996) agrees with Hirschi and suggested that none of the elements are more important that the rest; others (*see*: Curran & Renzetti, 1994, Vold & Bernard, 1986) place attachment at the highest of importance. In addition to differences in interpretation, some researchers have been critical of social bond theory and its elements. Gibbons (1994) found commitment and involvement to be at times difficult to differentiate. He also suggested that social bond theory is only efficient for explaining low-level offenses and female offending (Gibbons, 1994). Critiques set aside, theorists continue to investigate the theory and add to its empirical basis.

The General Theory of Crime

Twenty years after publishing *Causes of Delinquency* (1969), Hirschi coauthored his second version of control theory with Michael Gottfredson. *A General Theory of*

Crime presents Gottfredson and Hirschi's (1990) self-control theory, where it is proposed that individuals who possess low self-control are more likely to commit crime and criminally analogous behaviors. While no explicit connection is made to Hirschi's bond theory, the element of attachment remains.

Attachment, specifically family attachment, remains a key concept for self-control theory. This attachment is the source of self-control, which Gottfredson and Hirschi (1990) require an individual to possess a high level to avoid delinquent behavior. Gottfredson and Hirschi (1990) propose that self-control manifests itself by the age of eight and remains consistent throughout one's life. This suggests the same propensity to delinquent behavior present at the age of eight is also present at the ages of 20, 30, 40, etc. Individuals maintain this since they seek out and associate with likeminded individuals. Self-control does not diminish over time, but the manner in which it manifests may change (e.g. stealing, drinking, cheating on an exam, etc.).

Gottfredson and Hirschi (1990) describe self-control as a personality trait that can be high or low, and is identified by the use of characteristics that manifest in those who have low self-control. Those with low self-control tend to share six characteristics; they are often more "impulsive, insensitive, physical, risk-taking, shortsighted, and non-verbal" than their counterparts with high self-control (Gottfredson & Hirschi, 1990, p. 153). Individuals with these characteristics benefit from immediate gratification and the thrill that criminal and criminally analogous behaviors provide. Possessing low self-control or a number of these characteristics does not guarantee one will participate in delinquent behavior, but that they will have a greater propensity to do so when presented with the opportunity.

As a general theory, the authors give little attention to the seriousness of one's delinquent activities or demographic factors. Instead, the authors (1990) proposed that *all* individuals are equally motivated to pursue their own self-interests when given the opportunity (Nakhaie, Silverman, & Lagrange, 2000). One's level of self-control, which varies from person to person, is considered the deciding factor when presented with an opportunity to engage in delinquent behavior.

Gottfredson and Hirschi (1990) account for differences in offending patterns that may exist between these groups with differences in levels of parental supervision received as a child. The authors proposed that low self-control is the result of "ineffective or incomplete socialization", (Gottfredson & Hirschi, 1990, p. 96). The key source of this socialization is family, with parental supervision and discipline aiding in self-control development. The authors (1990) acknowledge cultural differences may exist in parenting styles, but they do not make it the focus of the theory.

Extensive research has been conducted to explore the generality of this particular theory. Self-control theory has been applied to those of different races (Vazsonyi & Flannery, 2004), ethnicity (Kaplan, Nápoles-Springer, Stewart, & Perez-Stable, 2001; Morris, Wood, & Dunaway, 2007; Nakhaie et al., 2000), gender (Burton, Cullen, Evans, Alarid, & Dunaway, 1998; Gibson, Ward, Wright, Beaver, & Delisi, 2010), and country (Cheung & Cheung, 2008; Vazsonyi, Pickering, Junger, & Hessing, 2001). Most findings suggest that self-control theory does have the capacity to be applied universally.

Some criminologists have referred to self-control theory as the most parsimonious theory in crime literature (Hay, 2001). It has also been referred to as "intuitively appealing" and has thus generated a large amount of supportive research (Williams,

Fletcher, & Ronan, 2007, p. 205). Research has used either a two- or three-factor model

to examine the relationship between self-control and crime. A two-factor model uses

self-control to predict crime, but does not include the parenting aspect of the theory. A

three-factor model, nevertheless, adds the effect parenting. While both models have

found support for self-control theory, evidence suggests that the three-factor model is

superior (Gibbs, Giever, & Martin, 1998).   This makes intuitive sense based on

Gottfredson and Hirschi's suggestions to include child rearing in self-control research.

In summary, Gottfredson and Hirschi's (1990) *A General Theory of Crime*

presents the self-control theory which proposes that the parent-child relationship is a

major determinant in whether a child will have a level of self-control necessary to prevent

them from delinquency when the opportunity arises. A wealth of research supports the

basic tenets of this theory, including the ability for this theory to be applied universally.

Due to the dynamic population of the U.S., there are a number of demographic groups to

examine with this theory. Accordingly, this study will examine two major groups that

have been overlooked in self-control literature.

Statement of the Problem

There have been a number of efforts to test the self-control theory. Much of the

literature has focused on the effect of self-control on crime and criminally analogous

behaviors (see: Arneklev, Grasmick, Tittle, & Bursik, 1993; Evans, Cullen, Burton,

Dunaway, & Benson, 1997; Gibson, Schreck, & Miller, 2004; Grasmick, Tittle, Bursik,

& Arneklev, 1993; Longshore & Turner, 1998; Longshore, Turner, & Stein, 1996;

Longshore, Chang, Hsieh, & Messina, 2004; Miller, Barnes, & Beaver, 2011; Piquero, Gibson, & Tibbetts, 2002; Piquero & Rosay, 1998; Polakowski, 1994; Sellers, 1999; Wood, Pfefferbaum, & Arneklev, 1993). Research has also examined the effect of self-control on crime in various populations, such as gender, racial categories, and ethnic groups, with results in support of Gottfredson and Hirschi's (1990) proposal that self-control theory is universal (see: Burton et al., 1998; Cheung & Cheung, 2008; Gibson et al., 2010; Kaplan et al., 2001; Morris et al., 2007; Nakhaie et al., 2000; Vazsonyi & Flannery, 2004; Vazsonyi et al., 2001).

The current research will focus on Gottfredson and Hirschi's hypothesis that self-control theory can be applied universally. Due to the increase in the Hispanic population within the U.S. over the past few decades, this group has appeared more often in criminological research. Those who fall into the category of Hispanic, however, include people of differing cultures and national ancestry. For example, the Hispanic label includes individuals with ancestors from Mexico, whose culture may have different effects on self-control than individuals from places like Cuba, Bolivia, or Spain. As a result, groups of individuals identified as Hispanic are not often studied alone. To sufficiently test the generality of this theory, then, those nationalities that are identified as Hispanic must be examined individually. Approximately 60 percent of the Hispanic population in the U.S. is of Mexican ancestry (Pew Hispanic Center, 2005); it is therefore necessary to determine the effects of self-control on this exceptional sub-group.

A second demographic category will also be examined in this research – generational status. Existing research on generational status indicates that immigrants place a higher emphasis on parent-child relationships. Individuals who are of first and

second-generation status are less inclined to commit crime than those who have acculturated into the mainstream (Smith & Krohn, 1995). For this dissertation, research on criminological theory will be bridged with literature on immigration and crime to explain the relationship between generational status and delinquency in a self-control framework.

CHAPTER II

LITERATURE REVIEW

This literature review will first provide a thorough evaluation of the control perspective will be presented. Second, the review will provide an in depth analysis of the tenets of self-control theory, specifically: the importance of the family, how self-control is related to crime, and an analysis of the invariance tenet. Finally, ethnicity will be discussed with a focus on Mexican-Americans and acculturation, as well as how this population may be useful in testing the invariance tenet of self-control theory.

Self-control theory is a micro-level theory that belongs to the control perspective. Instead of explaining why people are criminal, theorists contributing to this perspective view deviant behavior as expected behavior, and seek to explain why people do not commit crime. Gottfredson and Hirschi's (1990) *General Theory of Crime* proposed that self-control is a personality trait that is the product of child-rearing and parent-child attachment. It is this personality trait that prevents individuals from being crime-prone. According to the authors, this theory can be applied universally.

The Evolution of the Control Perspective

The roots of the control perspective can be found in the writings of Emile Durkheim. According to Durkheim (1895), deviance is normal and can aid in the maintenance of social order. The boundaries that have been set in place for behaviors are often not clear; when a deviant behavior occurs, it provides the opportunity for society to respond with a reaction. It is this social reaction, in the form of displeasure or punishment, which creates a more defined boundary (i.e. control).

Many theorists have added to the control perspective. Reiss, Toby, and Nye presented control theories of delinquency in the 1950s. Personality and socialization were tools used by Reiss (1951) to explain that delinquency could result from one or all of three proposed circumstances. These circumstances include: being unable to develop proper internal controls during childhood, internal controls breaking down, and a lack of social rules provided by social groups (e.g. families). It has been suggested, "Reiss's statement may well represent the best summary of social control theory" (Williams and McShane, 2004, p. 197).

In a different version of control theory, Toby (1957) focused on youth and school by adding the concept of "stakes in conformity". Toby proposed that adolescents "vary in the extent to which they feel a stake in American society" (1957, p. 16) and it is those who have "social honor" (e.g. do well in school) who have much more to lose with the disgrace that accompanies delinquent behavior. Those who already face disapproval will feel more inclined to commit delinquent behaviors. Conformity to the rules of society

consequently, prevents the potential loss of social rewards (e.g. friends, family, careers, etc.).

While previous theorists had implied that family is an important component in control theory, family was the key contribution of Nye (1958) to the control perspective. In *Family Relationships and Delinquency Behavior*, Nye suggested three sources of control: direct controls, such as punishment; internal controls, which include the conscience; and indirect controls, such as attachment to parents. Using a survey of high school students to examine his theory, Nye (1958) found that the attachment to parents was of utmost importance.

Reckless and Hirschi published literature on the control perspective in the 1960s. Reckless' (1961) containment theory suggested that conformity and deviance could be explained with interacting internal and external controls. Internal controls, or containment, include personality characteristics, such as self-control, responsibility, and goal orientation (Reckless, 1961, p. 44). The social environment serves as the outer containment, including supervision and discipline provided by family and school. Reckless emphasized inner containment, and suggested that people have either a good or bad self-concept, which can reduce the effect of outside influences.

In *Causes of Delinquency,* Hirschi (1969) presented his social bond theory, where he proposed that broken or weak bonds to society can be blamed for delinquent behavior. Those with strong bonds to society have internalized norms, a conscience, and a desire for approval, which influences them to avoid participating in such behavior. Hirschi's (1969) social bond theory includes four elements: attachment, commitment, belief, and involvement.

Those who have formed an attachment to conventional others are more sensitive to the opinion of others, which lowers their propensity to delinquency (Smith & Krohn, 1995; Taylor, 2001). Individuals who are committed to conventional society are less likely to participate in delinquent behavior for fear of rejection by conventional society (Taylor, 2001). Belief in conventional values also indicates a greater level of control and a lower propensity to commit delinquent behavior (Hirschi, 1969, pp. 16-34). Those who are involved in conventional behaviors keep busy with activities such as school, work, and church (among others), and have little time to commit delinquent behavior.

Hirschi did not place any emphasis on one of the elements over the others. Those who have studied bond theory, however, have different interpretations of the elements. Shoemaker (1996) agrees with Hirschi and suggested that none of the elements are more important that the rest, while others (*see*: Curran & Renzetti, 1994, Vold & Bernard, 1986) place attachment at the highest of importance. In addition to differences in interpretation, researchers have at times been critical of social bond theory and its elements. Gibbons (1994) found commitment and involvement to be difficult to differentiate. Also, social bond theory may only do well at explaining low-level offenses and female offending (Gibbons, 1994). Critiques set aside, theorists continue to investigate the theory and add to its empirical support.

Self-control theory, published by Gottfredson and Hirschi in *A General Theory of Crime* (1990), is the most recent evolution of the control perspective. The authors borrow from Reckless's containment theory and proposed that internal factors are the main source of conformity and deviance. The only difference between those who participate in delinquent behaviors and those who do not is their self-control.

Individuals with an underdeveloped self-control are said to have low self-control. According to the general theory of crime, these individuals often possess the following characteristics: impulsivity, shortsightedness, a physical orientation, poor mental skills, insensitivity, and a preference for risky behavior (Gottfredson and Hirschi, 1990). People with low self-control lack the ability to look beyond the short-term benefits of the behavior. When presented with the opportunity, they are more likely to commit crime or criminally analogous behaviors than those who have high self-control. People with high self-control are more likely to consider the long-term consequences, and are better able to resist the opportunity to engage in delinquent behavior.

Self-control theory is an evolution of Hirschi's (1969) social bond theory, in which the elements of commitment, involvement, and belief are abandoned. Attachment is used to explain the development of internal factors that prevent an individual from committing delinquent acts. In self-control theory, parent-child attachment is vital: the greater the attachment between a parent and child, the greater the parent's interest in their child's welfare. This interest manifests in the close monitoring of a child's behavior, recognizing poor behavior, and effectively disciplining to prevent its reoccurrence. According to Gottfredson and Hirschi (1990), it is through monitoring and effective discipline that self-control is developed. This usually occurs by the age of eight.

Gottfredson and Hirschi (1990) propose that self-control theory is invariant and can be applied universally regardless of demographics (e.g. sex, race, and socioeconomic status). Self-control is also believed to be stable over time, indicating that an individual with low self-control at age eight will also exhibit low self-control throughout their entire life. Gottfredson and Hirschi (1990) acknowledge the age-crime curve - which proposes

that offending is low at both the beginning and end of life, with a peak in one's middle years - has an effect on offending (Arneklev, Cochran, & Gainey, 1998). The relationship between the curve and offending does not indicate a change in self-control, but rather a change in the opportunity to engage in delinquent activities.

Tests of self-control theory have for the most part been supportive of the theory. An early meta-analysis of the theory that used 21 empirical studies determined that the overall effect of self-control on delinquency is greater than .20 (Pratt & Cullen, 2000). This finding suggested that self-control was "one of the best known correlates of crime" (Pratt & Cullen, 2000, p. 952). When other theories were controlled for, the effect size remained strong. Measurement, gender, race, age, or any other demographic characteristics of the studies were not found to affect the effect size. Issues did arise, however, when using longitudinal data to examine the theory; the relationship between self-control and delinquency was weaker, though the relationship remained in the expected direction.

A meta-analysis completed by the Max Planck Institute for Research on Collective Goods (2012) also found support for Gottfredson and Hirschi's (1990) theory. The institute found that approximately 88 percent of the studies used (n = 717) supported the theory's proposal that low self-control is predictive of crime and criminally analogous behaviors. Only four of the 717 studies used in this research had results that were not supportive of self-control theory. When analyzed by race, age, and gender, this meta-analysis suggested that there are potential differences in the relationship between self-control and delinquent behavior. While the majority of articles used demonstrated that self-control theory applies to all individuals regardless of sex, all other demographic

groups demonstrate that the theory is inconsistent in application. Self-control was found to predict delinquency in juveniles when groups were divided by age; when split by race, however, self-control was only found to be predictive of delinquency for African Americans. Gottfredson and Hirschi (1990) have proposed that these between group differences can be attributed to parenting measures, which were not a focus of this meta-analysis.

The discussion now turns to the testing of self-control theory. This will begin with an examination of research on the relationship between self-control and delinquency, including a discussion of the effects of parenting on this relationship. The invariance tenet, or proposal that the theory is universal, will follow.

Self-control and Delinquency

The basic premise of self-control theory is that individuals with low self-control do not consider the long-term consequences of their actions and will therefore indulge in delinquent behaviors that offer short-term satisfaction. Gottfredson and Hirschi (1990) consider delinquent behaviors to fall into two categories: crime and criminally analogous behaviors. The difference between these behaviors is that criminal behavior involves the use of force or fraud, while analogous behavior does not. Criminally analogous behaviors provide immediate pleasure but have negative consequences. Gottfredson and Hirschi (1990) suggested that the theory can be useful in predicting becoming a victim of crime, being accident-prone, skipping school, promiscuity, family disruption, and health problems.

The use of both measures of delinquency in self-control theory is based on previous research that found individuals who engage in criminal activity are also more prone to engage in more covert delinquent acts (e.g. Loeber & Dishion, 1983). In a systematic review of delinquency prediction studies, Loeber and Dishion (1983) found a large amount of literature that indicated youth who engage in criminal activity, such as stealing, are often involved in other delinquent acts, such as drinking, smoking, lying, and truancy. Research has confirmed a relationship between low self-control, crime, and criminally analogous behaviors (*see*: Arneklev et al., 1993; Evans et al., 1997; Gibson et al., 2004; Grasmick et al., 1993; Longshore & Turner, 1998; Longshore et al., 1996, Longshore et al., 2004; Longshore et al., 2004, Miller et al., 2011; Piquero et al., 2002; Piquero & Rosay, 1998; Polakowski, 1994; Sellers, 1999; Wood et al., 1993).

Grasmick et al.'s (1993) research, best known for the creation of the most commonly used cognitive scale for measuring self-control, provides support for self-control theory. Adhering closely to Gottfredson and Hirschi's (1990) proposal that self-control is a one-dimensional trait composed of six characteristics, Grasmick and colleagues (1993) created a scale of four statements dedicated to each characteristic, for a total of 24 items. The scale was found to be reliable, though items measuring the physical characteristics of low self-control were found to be weak. Grasmick et al.'s (1993) findings suggested that self-control could predict criminal behavior, though better for crimes of fraud rather than force. Arneklev et al., (1993) revised the Grasmick et al. (1993) scale in an examination of the effects of self-control on imprudent, or criminally analogous, behavior. Results of the study suggested that when all other variables were

controlled, low self-control had moderate accuracy in predicting drinking and smoking, but not gambling.

Wood et al. (1993) used a cognitive measure of self-control to predict delinquent behavior among high school students. When characteristics of self-control (e.g. risk-taking and temperamental) were used to predict delinquent behavior, risk-taking was found to be the best predictor. In an analysis of data collected for an evaluation of Treatment Alternative to Street Crimes (TASC) programs, Longshore et al., (1996) examined the relationship between self-control and the number of crimes that were committed in the previous six months. Longshore et al. (1996) found that low self-control had a significant and positive relationship with crime. The results also suggested that risk seeking, self-centeredness, impulsivity, and being prone to anger had the strongest predictive ability of self-control characteristics. A later study using the same sample had similar results (Longshore and Turner, 1998).

As an alternative to cognitive scales, behavioral scales have been used to measures self-control. Keane, Maxim, and Teevan (1993) published the first study using this type of scale. Secondary data from the 1986 Ontario Survey of Nighttime Drivers provided blood alcohol content (BAC) as a measure of criminal behavior. Observed behaviors, such as wearing a seatbelt and whether anyone had tried to keep the subject from driving, were used to measure self-control. Keane et al. (1993) found that behaviors measuring low self-control did well at predicting an individual's BAC. Hirschi and Gottfredson (1993) have openly supported the use of behavioral measures to measure self-control, with the stipulation that one can tell the difference between the measure of self-control and the measure of delinquency (Polakowski, 1994).

Polakowski (1994) used data from the Cambridge Study in Delinquent Development from Great Britain to examine the effects of self-control on criminal behavior. Criminal behavior was measured with official data and 19 behavioral and cognitive items were combined to create the measure of self-control. Polakowski's (1994) results suggested that a mixed measure of self-control does well in predicting the number of times one is convicted. A mixed scale was also used by Evans et al. (1997) to examine self-control in a sample of adults in the urban Midwest. The results indicated that "self-control is an important predictor of criminal behavior" (p. 491), with the behavioral scale found to better predict delinquency than the cognitive scale (Evans et al., 1997).

Despite the findings of Evans et al. (1997), Polakowski (1994), and Keane et al. (1993), the majority of research testing self-control theory has used cognitive measures of self-control with supportive results (Arneklev, Grasmick & Bursik, 1999; Longshore & Turner, 1998; Piquero & Rosay, 1998). Many studies have used a modified Grasmick scale to measure self-control. Piquero and Rosay (1998) explored Gottfredson and Hirschi's (1990) ability to predict crimes of force and fraud using a scale with four items removed. Results were found to be supportive of self-control theory and both force and fraud crimes could be predicted with the use of self-control.

A variety of dependent variables have been used to examine Gottfredson and Hirschi's (1990) theory. Sellers (1999) used courtship aggression as a measure of criminal behavior in a sample of graduate and undergraduate students attending a Florida university. She found that low self-control explains ten percent of the variance in offending (Sellers, 1999, p. 392). When a measure of opportunity was added to the

model, the explained variance increased (Sellers, 1999). Sellers (1999) suggested that the weakness in the results of this research was due to intimate violence being uncommon in the sample used.

Binge drinking is a common measure of delinquency in self-control literature. Piquero et al., (2002) used a sample of university level freshmen to examine the relationship between low self-control, binge drinking (five or more drinks in a typical drinking behavior), and alcohol-related behaviors using the Grasmick et al. (1993) scale. Alcohol-related behaviors included whether the respondent had been in trouble with the police while drinking (Piquero et al., 2002). Piquero et al. (2002) found low self-control and alcohol-related behaviors to be positively related.

Gibson et al. (2004) examined the effects of self-control on binge drinking in an undergraduate sample. Guided by the previously mentioned article (Piquero et al., 2002) similar measures of self-control, binge drinking, and alcohol-related behaviors were used. Gibson et al.'s (2004) findings were supportive of the self-control theory, and determined that here was a positive relationship between low self-control and binge drinking (.61) as well as self-control and alcohol related behaviors (.23) (pp. 415-6). Higgins, Tewksbury, and Mustaine (2007) examined the role of self-control on sports fan binge drinking. While findings were mostly supportive of the theory, when peer relationships were added to the model, low self-control was no longer found to be effective in predicting binge drinking.

Drug use has also been used as a measure of criminally analogous behavior. Longshore et al. (2004) used this measure in an examination of the TASC program evaluation data. Similar to previous research with this dataset (i.e. Longshore et al.,

1996, Longshore et al., 1998), cognitive items were used to measure self-control. Findings indicated that low self-control had a significant and positive relationship with drug use (.17) (Longshore et al., 2004, p. 554).

One of the more controversial measures of criminally analogous behavior is the incidence of disease. Gottfredson and Hirschi (1990) proposed that those with low self-control are not only more likely to offend, but are also more likely to have accidents and illnesses. Miller et al., (2011) used the National Longitudinal Study of Adolescent Health to study the effects of self-control on health. Results supported the use of poor health as a consequence of low self-control, suggesting that low self-control increases the odds of asthma, cancer, high cholesterol, and high blood pressure.

Parenting: The Source of Self-control

Theories that fall into the control perspective often include family as a major arena in which individuals learn social interaction, growth, maturity, and the expectations of society (Paternoster & Brame, 1997). Gottfredson and Hirschi (1990) continue this logic, and proposed that parenting is the source of self-control. Strong parent-child relationships increase a parent's ability to supervise and discipline their children, which suppresses their poor behavior and trains the child to do so when they are by themselves (i.e. self-control). The ability of parenting to influence one's self-control has demonstrated supported in research.

Gibbs et al. (2003) used a sample of university students to examine the relationship between parenting, self-control, and deviance. Forty items that focused on

child rearing, including monitoring and discipline, in the home environment were used to measure parenting. A 40-item self-control scale, including many of the measures used in the Grasmick et al. (1993) scale, was implemented. Study results supported the self-control deviance relationship (Gibbs et al., 2003). Parenting was found to have an indirect relationship with delinquency, mediated by self-control, and was not found to have a significant relationship with deviance when self-control was removed from the model.

Unnever, Cullen, and Pratt (2003) used a sample of middle school students to test the effect of parenting, measured by monitoring and consistent supervision, on self-control and crime. Children with higher levels of self-control reported that they had been more effectively parented (i.e. had greater parental monitoring and supervision). Parental monitoring exerted a strong independent effect on delinquency that was not affected by self-control (Unnever et al., 2003).

Using a sample of university students, Boyd and Higgins (2006) explored the effects of self-control on deviance as mediated by parental management. Eighteen items were used to inquire about current parenting practices (e.g. concern, support, and understanding). Results demonstrated that when parental management is included in a self-control model, the total effects of low self-control on deviance is positive (Boyd & Higgins, 2006). Findings also suggested that the link between low self-control and deviance could partially be mediated by parental support (Boyd & Higgins, 2006).

Gibson, Sullivan, Jones, and Piquero (2010) used the Project on Human Development in Chicago Neighborhoods (PHDCN) to determine whether ecological factors or parenting have a greater effect on a child's self-control. Multiple parental

measures, including supervision and warmth, were included in the model. A negative
relationship was found between supervision and low self-control, as well as and warmth
and low self-control, supporting Gottfredson and Hirschi's emphasis on the importance of
parenting (Gibson et al., 2010).

Some research has found negative support for the parenting portion of
Gottfredson and Hirschi's (1990) theory. In Wright and Beaver's (2005) study of
kindergarten and first grade students, parenting was determined to have an inconsistent
relationship with self-control. The major weakness of this study was the sample used;
children under the age of eight were included, though the theory proposes that a child's
self-control is not developed fully until the age of eight.

While the social context of family is important in the development of self-control,
Gottfredson and Hirschi (1990) suggested that structural factors of the family (e.g. the
number of parents, number of children, number of extended family members in the
home) are not central to the theory. Because the focus of the theory is on the quality of
the family relationship (e.g. attachment, warmth, supervision, and discipline), structural
factors are important only when they affect this relationship. For example, as the number
of children in the home increases, it becomes more difficult for parents to effectively
monitor and discipline each child. Loeber and Dishion's (1983) systematic study of
delinquency determined that children with three or more siblings before the age of ten
had a greater chance of being delinquent.

Families with a parent missing have supervision issues as well. Single parents
often work excessive hours to ensure bills are paid, leaving children unattended
(Gottfredson & Hirschi, 1990). Smith and Krohn (1995) found that being from a single

parent home increased the likelihood of delinquency; the relationship was found to be stronger for Hispanic samples than for white or black samples. These results suggest that race and ethnicity interact with the family context and family life to influence adolescent conduct (Smith & Krohn, 1995).

While not directly related to social context of the family, socioeconomic status (SES) has also been found to have a relationship with self-control. Families of lower SES have been found to parent differently than those of more comfortable means (see Glueck & Glueck, 1952; Gove & Crutchfield, 1982; Larzelere & Patterson, 1990; Loeber & Dishion, 1983; Nye, 1958). Parents in low SES families often have low levels of education, must deal with financial hardship, and may have a greater potential of living in dangerous neighborhoods. These parents may exhibit lower levels of warmth, be emotionally unavailable, use harsh discipline, and be unable to monitor their children due to spending most of their time trying to financially support the family (Forehand & Kotchick, 1996, Kopak & Hawley, 2012). Parents from reasonably affluent families often have more free time and are usually aware of their children's activities and not reluctant to discipline their children (Loeber & Dishion, 1983).

In a study comparing apprentices and non-apprentices in Switzerland, Vazsonyi and Klanjšek (2008) determined that "sources of self-control are more complex than parenting alone… social stratification may play an indirect role through family level factors" (pp. 122-3). Parents of non-apprentices (i.e. higher income) were reported to have closer relationships with their children, and they were able to monitor their children more closely than parents of apprentices. Due to the differences in parenting styles, those whose parents were better off financially had higher levels of self-control.

Finally, biological factors are not influential in the development of self-control according to Gottfredson and Hirschi (1990). It has been suggested, however, that genetics may assist with the prediction of which individuals are most capable of raising children. Those with low self-control may not be well equipped to socialize children, as child rearing is a long-term responsibility that people with low self-control have difficulty with. This difficulty could potentially lead to children with low levels of self-control as well.

Self-control's Universal Application: The Invariance Tenet

Gottfredson and Hirschi (1990) propose that their theory is invariant, meaning that low self-control is a predictor of delinquent behavior regardless of demographics (e.g. gender, race, SES). Burton et al. (1998) examined self-control, gender, and crime in a group of Cincinnati citizens using a 12-item measure of self-control to predict both crime and criminally analogous behavior. Findings suggested that gender was significantly related to adult self-reported offending, with males reporting a greater incidence of offending. The gap in offending between genders was eliminated when self-control was added to the model, indicating that regardless of gender, those with low self-control had higher rates of offending. Gibson et al., (2010) found that in a sample of freshman level college students, cognitive measures of self-control had good internal consistency for males (.84) and females (.85). Males were found to have lower self-control than females; however, regardless of the test used, the probability of crime increases as the level of self-control decreased.

Vazsonyi and Crosswhite (2004) used a sample of middle and high school students in public schools from a rural, low SES area to explore the effects of self-control on the demographic characteristics race and gender. This research determined that low self-control was predictive of deviance in African American and Caucasian adolescents. When gender was examined, there were few differences in the relationship between low self-control and offending between male and female.

Other groups have been used to examine the invariance tenet of self-control theory, including people who have attended university and people with criminal records. Arneklev et al.'s (1999) research on university students and the general population age 18 and older determined that self-control does well to predict delinquency in both groups (Arneklev et al., 1999). In a study of prison inmates and college students, Williams et al. (2007) found self-control measures applied to both groups as a means of predicting delinquency. Prisoners scored higher on measures of self-centeredness and preference for simple tasks than the university students; the samples had comparable scores on the remaining subscales.

Some criminologists have suggested that although self-control theory might test well among individuals residing in the U.S., the theory may be lost in translation when applied to deviant behaviors in other countries (Geis, 2008). Nevertheless, literature supports the use of the general theory in other countries. Self-control has been used as a predictor of criminal behavior in Canada with results supportive of the theory (Baron, 2003). With data from the International Study of Adolescent Deviance (ISAD), which includes data from children from Hungary, Switzerland, the Netherlands, as well as the U.S., Vazsonyi et al. (2001) found support for the cross cultural use of self-control. After

controlling for age and sex, self-control accounted for between 17 and 28 percent of the total variance in total deviance (Vazsonyi et al., 2001).

Results from a study in the Ukraine also demonstrated support for the universal use of self-control (Antonaccio & Tittle, 2008). Using a survey of adults in Lviv, Ukraine Antonaccio and Tittle (2008) determined that self-control had a significant relationship with all measures of crime and delinquency in the expected direction, leading the authors to suggest that there is a "base relationship between self-control and projected crime/deviance… applying to all culture contexts" (Antonaccio & Tittle, 2008, p. 96).

Self-control has also been used to explain crime in Eastern cultures. Vazsonyi, Clifford Wittekind, Belliston, and Van Loh (2004) determined that in samples of Japanese and American college students, low self-control was predictive of deviant behavior. In a Chinese sample of secondary school students, Cheung and Cheung (2008) found support for the general theory of crime and self-control and self-reported delinquency were found to have an inverse relationship (-.28). Results from this study also indicated that low self-control is significantly and positively correlated to delinquent peers (.288) (Cheung & Cheung, 2008).

Limited research has been conducted to apply self-control theory to the Hispanic population in the U.S. Vera and Moon (2013) used a sample of mostly Hispanics from an impoverished neighborhood to examine self-control theory. The researchers found only partial support for self-control theory, with no support of a relationship between parental monitoring and low self-control as Gottfredson and Hirschi (1990) suggest. Miller, Jennings, Alvarez-Rivera, and Lanza-Kaduce (2009) conducted some of the first research examining groups identified as Hispanic. Using a sample of high school students in

Puerto Rico, Miller and colleagues (2009) found that maternal attachment is inversely related to low self-control. When both attachment and low self-control were examined, the relationship between low self-control and offending was stronger than the relationship between maternal attachment and offending. Paternal attachment was not related to self-control in any significant way. Alvarez-Rivera and Fox (2010) used the same data to examine the self-control theory and social control theory. Results suggested that attachment to parents, school, and friends is more important than low self-control when predicting delinquency.

Self-control as Time Stable

In addition to being applicable to all demographic groups, Gottfredson and Hirschi (1990) proposed that self-control could predict delinquency in individuals regardless of age. According to *The General Theory of Crime*, an individual possesses self-control by the age of eight; the level of self-control at age eight is the same throughout one's life. Above all else, self-control levels in youth should predict self-control levels as one's life continues (Gottfredson & Hirschi, 1990).

The age tenet is informed by research that has found one of the earliest predictors of criminal behavior to be problem behavior at a young age (Loeber & Dishion, 1983). Loeber and Dishion's (1983) review of delinquency prevention studies found that children who displayed bad behavior at ages eight through ten had a 34 percent greater risk of future official delinquency, and a 21 percent greater risk of self-reported delinquency (Loeber & Dishion, 1983). In an examination of drinking behaviors of

juveniles in a large city, Beck, Boyle, and Boeckeloo (2004) determined that those who drank at a baseline were six times more likely to drink at a 12 month follow up.

Critiques of Self-control Theory

Underdeveloped Opportunity

Not all self-control theory literature has been supportive. According to Gottfredson and Hirschi (1990), while the likelihood of an individual committing crime or engaging in criminally analogous behavior is dependent on self-control, both activities require an individual to be presented with the opportunity to participate in that behavior. Opportunity is described as the "logical structure of the crime itself" that varies from one offense to another (Barlow, 1991, p. 233); when opportunity is held constant, low self-control predicts offending, since those with low self-control have a greater propensity to offend.

A critic of self-control theory, Barlow (1991), takes issue with the authors' neglect to fully develop this opportunity. According to Barlow, without being able to explain exactly when a crime will occur, according to Barlow, the theory is of very little practical use.

> Unfortunately, Gottfredson and Hirschi do not develop the opportunity (crime) side of their theory sufficiently well to predict which of all these varied acts individuals are likely to commit (at a high or low rate) at any given time, or when they might switch from one crime to another or from crime to a noncriminal but analogous act. Nor do they provide a basis for deducing what kind of social or cultural setting would experience a high (or low) rate of any particular crime or analogous act. Their treatment of these issues as theoretically irrelevant or

inconsequential hardly lessens the theory's vulnerability to attack (Barlow, 1991, p. 237).

Barlow's critique can be countered with research that has found opportunity to increase self-control's ability to predict crime (see: Grasmick et al., 1993, Longshore & Turner, 1998). Grasmick et al.'s (1993) study indicated that the predictive ability of low self-control alone had weak causal effect on fraud or force. When opportunity was added to the model, the predictive ability of the model increased. Crime opportunity in the data appeared to be nearly as strong as the interaction term of opportunity and self-control in predicting delinquency (Grasmick et al. 1993, p. 24).

Longshore and Turner's (1998) examination of TASC evaluation data to examine self-control included opportunity measured with two proxies. The first was a question regarding how many of the individual's current friends engage in crime other than drugs. Gender was the second proxy for opportunity, as women are often provided with less opportunity to offend. Results indicated that the involvement in force crimes over a six month period were more common among individuals with lower self-control and greater opportunity; twelve percent and thirteen percent of the variance in offending explained by their interaction, respectively.

Universal Application

Other critics of self-control theory have found negative evidence for the invariance tenet of self-control theory (i.e. that it can be applied universally). Benda's (2005) self-control research using public high school students in the Midwest provided support for the theory overall, but did not find that it applied in the same manner for gender and age. Benda's (2005) analysis suggests that demographic characteristics (e.g.

race, age) might play a greater role in delinquency than proposed by Gottfredson and Hirschi (1990). Offending differences between males and females were reduced when behavioral measures were added to the model. The same was found when examining different age groups (i.e. behavioral measures of self-control reduced differences in offending between different age groups. Benda (2005) concluded that "self-control partially accounts for the relationship between demographics and delinquency," and that "the findings of the present study suggest that Gottfredson and Hirschi (1990) have identified a valuable concept that may fit within a more elaborate theory" (p. 438).

Gottfredson and Hirschi (1990) acknowledged the potential for differences in the effects of self-control on delinquency between demographic groups, but suggested that these differences can be accounted for by incorporating parenting into the model. In their self-control theory, Gottfredson and Hirschi (1990) proposed that differences in offending patterns between demographic groups are due to the level of self-control, which is attributed to the quality of relationship between parent and child. Strong parent-child relationships increase a parent's ability to supervise and discipline their children, suppressing their impulsive behavior, and trains the child to suppress the same behavior when they are one their own (i.e. self-control).

Smith and Krohn (1995) used a sample of sixth to eighth graders and their parents from two waves of the Rochester Youth development survey to explore the offending differences between white, black, and Hispanic adolescents. The study used multiple parenting measures, including parent-child attachment, parental involvement, and parental control. The resulting path analysis demonstrated that these variables "explained substantially more of the variance in delinquency among Hispanic adolescents" than for

the other two groups (Smith & Krohn, 1995, p. 81). Results also demonstrated that parental attachment had a greater impact on white and black delinquency, while parental involvement had a greater relationship with Hispanic delinquency than the other groups.

Morris et al. (2007) used a sample of Native American and white high school students in Oklahoma to examine the invariance tenet of Gottfredson and Hirschi's (1990) theory. In this research, the parenting variables include items about family structure as well as monitoring, recognizing, and punishing bad behavior. Morris et al., (2007) determined that self-control is invariant between the two groups, and it significantly predicted all measures of delinquency for both. The results also suggested between group differences may exist. The parenting variables had an effect on the self-control of white students, but not on the Native American students.

Parenting and invariance have also been tested on individuals of different socioeconomic status (SES). Larzelere and Patterson (1990) used subjects from elementary schools in Oregon to determine whether parenting measures or SES played a more important role in the prediction of delinquency. Larzelere and Patterson concluded that SES (measured by average education level and occupational prestige of the child's parent) had no significant direct influence on delinquency. It did, however, have a positive relationship with parental measures (.66) (Larzelere & Patterson, 1990, p. 314), which in turn had a negative relationship with delinquency (-.76). These results suggest that the "effect of SES on delinquency is mediated entirely by family management" but also that SES has an effect on child rearing practices (Larzelere & Patterson, 1990, p. 315).

Vazsonyi and Klanjšek (2008) explored the invariance of self-control theory by using a Swiss setting. The results of this study found overall support for the theory, and the "models explained between 20 and 30 percent of the variance in deviance" (Vazsonyi & Klanjšek, 2008, p. 123). Findings suggested that parenting plays a modest role in the development of self-control with closeness and support having a greater effect than monitoring. It was also determined that family processes differ by SES, which supports Gottfredson and Hirschi's proposal that differences found in offending between demographic groups can be explained with the effect of child rearing on self-control.

Time Stable

Some researchers have found weaknesses with the age tenet of self-control theory. In a study of children enrolled in a gang resistance program in the U.S., Winfree, Taylor, He, and Esbensen (2006) found the characteristics of self-control to vary over time. Impulsivity decreased over the five years that the study was conducted. Risk taking found no consistent change patterns, but was at its lowest level in the final year of this research. Winfree et al. (2006) suggested that their findings "do not support self-control as an immutable and stable propensity" (p. 278). While this may appear to be negative evidence for self-control theory, Gottfredson and Hirschi (1990) did acknowledge that the age-crime curve - the fact that offending is low at both the beginning and end of life, with a peak in one's middle years - does have an effect on offending. The age-crime curve may also have influenced the results of this research.

Gaps in the Research

In summary, self-control theory has been tested on a variety of groups. There are, however, some groups that have been neglected. Mexican-Americans have been included, but only as one of the ethnic groups identified as Hispanic, a group which has been addressed little in self-control research itself (Miller, Jennings, Alvarez-Rivera, & Lanza-Kaduce, 2009, Shekarhkar & Gibson, 2011, Vera & Moon, 2013). While it is useful to understand the differences in offending between Hispanic and other major racial or ethnic groups in the U.S., it is also possible that differences that may be found among the nationalities within this group.

Individuals of Mexican ancestry who reside in the U.S. are identified as Hispanic, an ethnicity that has been defined in a number of ways by different organizations. For example, official U.S. data suggests that "Hispanic has been used to refer to people of Spanish descent… to people with ties to nations where Spanish is the official language" (Walker, Spohn, & DeLone, 2002). The Pew Hispanic Center states that to be Hispanic, one must have a connection by ancestry to Latin America (2012, p. 3). The Center further suggests that the label does not indicate a common language, culture, or race. The U.S. government tends to treat the Hispanic population as a singular group, with few cultural differences. The reality is that the countries of ancestry that fall under the label Hispanic are made up of many different cultures and languages. What these groups have in common is a greater emphasis on family than many other ethnicities.

The Hispanic culture, as a whole, values respect and obedience as critical aspects of the parent-child relationship (Pantin Schwartz, Sullivan, Coatsworth, & Szapocznik, 2003). This is an emphasis often referred to as familism (German, Gonzalez, & Dumka, 2009) and means that the welfare of one's entire family is put above oneself (Alvarez-Rivera & Fox, 2010). Escovar and Lazarus (1982) found Hispanic families to exhibit closer bonds between parent and child, especially with the mother, when compared to European Americans. Their study also found that European American families value independence in their children, while Hispanic families were more focused on having a support system.

The portion of the U.S. population identified as Hispanic has increased in the last 30 years. In 1996, nine percent of the U.S. was identified as Hispanic; by 2004, Hispanics made up 12 percent of the population (Walker et al., 2002). It is projected that 25 to 33 percent of the U.S. population will be Hispanic in 2050 (Schwartz, Mason, Pantin, & Szapocznik, 2009, U.S. Census Bureau, 2005). Much of this increase has been due to immigration from Latin American countries.

More than 60 percent of the Hispanic population is made up of individuals of Mexican ancestry, which suggests a necessity to explore this group by itself (Pew Hispanic Center, 2005, p. 3). Research has also suggested that there are behavioral differences between those of Mexican ancestry and others that are identified as Hispanic. Bachman, Wallace, O'Malley, Johnston, Kurth, and Neighbors (1991) found Mexican-American adolescents were more likely to drink and engage in heavy drinking than their Puerto Rican counterparts. It was also suggested Mexican- and Cuban-American adolescents in the U.S. drink more than foreign born. Immigrant status had a direct effect

on the Cuban drinking, an indirect effect on Mexican immigrant drinking, and no effect on Puerto Rican immigrant drinking (Bachman et al., 1991).

Immigration status is especially important to the study of the Hispanic population, since 50 percent of the U.S. immigrants are identified as Hispanic, and more than half of these (30 percent) claim Mexico as their country of origin (Pew Hispanic Center, 2005). Twelve million people emigrated from Mexico in the last four decades. Consequently, many Mexican-Americans are first or second-generation immigrants, with recent research confirming that those of Mexican descent are more likely to be of first generation than third generation (Lopez & Miller, 2011). These data suggest another missing piece in self-control literature: generational status. There may be differences found in groups of the same country of ancestry due to their level of acculturation, which may be measured through the use of generational status or other proxies.

Acculturation is defined as the interaction between two distinct cultures, resulting in the adoption of the host society's values, beliefs, and behaviors (Akins, Mosher, Smith, & Gauthier, 2008; Lopez & Miller, 2011). Traditional models of acculturation imply a linear generational process in which immigrants slowly become part of the dominant culture, benefiting socially and economically as they acculturate (McNulty Eitle, Gonzalez Wahl, & Aranda, 2009; Thomson & Hoffman-Goetz, 2009). In this model, later generations have a greater chance of success than the first; nevertheless current research supports the opposite.

Current acculturation research suggests that this process often leads to negative outcomes in second and third generation immigrants due to a departure from traditional values, weakened community, and a decrease in familism (German et al., 2009; Lopez &

Miller, 2011; Vazsonyi & Flannery, 1997). Acculturation has been found to lead to negative behaviors, including delinquency, criminally analogous behaviors, and association with delinquent peers (Miller, 2011; Miller, 2012). Barrera, Biglan, Ary, and Li (2001) demonstrated that the weakening of familism is harmful to adolescents. In a Mexican-American sample, German et al. (2009) determined that familism weakened the negative effects of deviant peer affiliation on externalizing problem behaviors (German et al., 2009). Those who had a weaker attachment to parents had more delinquent peers.

These negative outcomes can be caused both by acculturation and by stress that accompanies accelerated acculturation. The stress can be especially detrimental for those who are not surrounded by those of their own ethnic group. New arrivals to the country that settle into ethnic enclaves may experience a slower acculturation process, buffer against problems with adjusting, and help provide social control over children (Akins et al., 2008, Miller, 2012). Acculturation research suggests ethnic retention may protect immigrants from the negative influences of the host culture (McNulty Eitle et al., 2009).

This same desire to be close to members of an ethnic peer group has been found to lead to crime through street gang association (Knight et al., 2012, p. 2). This can be demonstrated with research on Mexican-American adolescents. The Pew Hispanic Center (2009) found that Mexican-American youth are twice as likely to have ties with street gangs compared to non-Mexican Hispanic youth.

> In the pursuit of an ethnic identity, ethnic minority adolescents may search for cultural information from a variety of sources including family relationships and peers groups….For some adolescents, an initial desire to be emotionally connected to members of an ethnicity-specific peer group may lead to association with, or membership in, a street gang (Knight, Losoya, Cho, Chassin, Williams, & Cota-Robles, 2012, p. 2).

Recent research supports the proposal that acculturation leads to negative behaviors. Drug and alcohol use are much more common for acculturated and U.S. born individuals than those new to the country (Akins et al., 2008; Miller, 2011). Some of this research includes the Hispanic population, but little has included only those of Mexican ancestry. Immigrants, especially Hispanic, are usually more conservative with drug and alcohol behavior than Americans due to a lower rate of drug use in their home countries. As they acculturate, immigrants' weaker family connection may lead to an increase in likelihood to use drugs and alcohol. Akins et al. (2008) found acculturated Hispanics to be 13 times more likely to report current drug use and four times more likely to have recently used hard drugs than non-acculturated Hispanics.

Data on acculturation is often criticized as being weak, due to the way in which acculturation is measured. Most research uses proxy measures to operationalize acculturation, including characteristics such as generational status, length of residence, and language. Issues with measurement aside, acculturation plays an important role in propensity to crime in the U.S. immigrant populations.

The Pew Hispanic Center (2009) has done research on the differences between generational offending. Findings have suggested that first generation immigrants from Latin American countries have lower levels of offending than U.S. born people of the same descent. Seven percent of first generation Hispanic adolescents report having been in a fight in the past year compared to 16 percent of second and 18 percent of third generation adolescents (Pew Hispanic Center, 2009, p. 81). More than one third (37 percent) of Hispanic adolescents born in the U.S. reported having a friend or family

member in a gang, while 17 percent of immigrants reported having a relationship with someone in a gang (Pew Hispanic Center, 2009, p. 81).

Using a sample of Hispanic adolescents from the Project on Human Development in Chicago Neighborhoods Miller explored offending and victimization patterns with a focus on the difference between generations. Foreign-born adolescents in the sample were more than 50 percent less likely to report having committed an offense than those of later generational status (Miller, 2012, p. 161). Adolescents born in the U.S. were also more likely to be victimized than those who were foreign born.

Due to the important role language plays in the acculturation process, it has at times been used as a measure of acculturation. The Pew Hispanic Center (2005) has found 72 percent of first generation Hispanic immigrants are Spanish dominant; by the second-generation, this drops to seven percent (p. 17). Third-generation immigrants and non-immigrants are mostly English dominant, with 22 percent of the population being bilingual (Pew Hispanic Center, 2005, p. 17). Spanish dominant Mexican-Americans have different values than Mexican-Americans who speak predominantly English and have more mainstream American values (Pew Hispanic Center, 2005).

Using a sample of Hispanic adolescents from New York City, Epstein, Botvin, and Diaz (2000) explored the effects of acculturation on alcohol related behaviors. Using language as a measure of acculturation, Epstein and colleagues (2000) determined that children who were bilingual with friends had higher levels of alcohol related behaviors than those who were more acculturated (i.e. predominantly English speaking). Adolescents who were bilingual with their parents had higher levels of alcohol use than those who spoke Spanish with their parents. Epstein, Botvin, and Diaz (2001) used the

same sample to examine acculturation and drug use (i.e. tobacco and marijuana). This study confirmed that Spanish-speaking adolescents were less likely to use drugs than those who spoke English with their parents. Those who were bilingual with parents also had a greater likelihood to use drugs than those who were Spanish predominant with their parents.

Self-control theory has support in predicting crime, but there is still much research to be done. While individuals identified as Hispanic have been used in self-control research (Shekarkhar & Gibson, 2011), those of Mexican ancestry have been excluded from this research. This mistake should be reconciled due to the growing Mexican-American population within the U.S. Generational status and other measures of acculturation have been overlooked in self-control research as well. Due to the potentially negative effects of acculturation on immigrant groups, it is important to explore how it affects the development of self-control.

Proposed Research

According to the general theory of crime, low self-control is the primary cause of crime and criminally analogous behaviors regardless of demographic factors (e.g. race, gender, and class). Much research has been done to test Gottfredson and Hirschi's assumption of invariance, but few studies have used different populations that make up the Hispanic community or generational status (Shekarkhar & Gibson, 2011). Therefore, this dissertation will test for the effects of ethnicity and generational status on the relationship between parental measures, self-control, and self-report offending. It is

expected that the relationship between the variables will remain the same when these moderating variables are introduced to the model; however, the strength of the relationships will likely be different. For those of Mexican ancestry, it is hypothesized that a stronger parental measure will be linked to greater levels of self-control. When individuals of Mexican ancestry are separated by generational status, it is hypothesized that first- and second-generation individuals will have higher scores on the parenting scale, greater levels of self-control, and less offending than those of third or greater generation.

CHAPTER III

METHODOLOGY

Chapter 3 will open with a discussion of key research hypotheses for this dissertation, including a discussion of moderating effects. The chapter then details the sample design used to create the Project on Human Development in Chicago (PHDCN), the study sample, and variables used in the analyses. The analytic plan for the current research will follow, beginning with the techniques used to account for the nested nature of the PHDCN data and the skewed distribution of the dependent variable. The chapter concludes with a description of the methods used to test the current hypotheses.

Hypotheses

The overarching goal of the current research is examine Gottfredson and Hirschi's (1990) self-control theory, specifically the invariance tenet. The invariance tenet suggests that this theory may be applied universally, regardless of time, place, gender, ethnicity, etc., and that lower levels of self-control are indicative of a greater propensity

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to commit crime and criminally analogous behavior. This research will address whether the theory applies to a sample of Mexican-Americans. The research will also investigate whether there are differences in application between those of different generational status.

Nationality and generational status have been added as moderating variables to the self-control model in the current study. Moderating variables influence the relationship between independent and dependent variables. The first part of the analysis concerns the moderating influence of country of origin on the relationships between parenting, self-control, and delinquency (Figure 1). It is expected that for both Mexican-American and non-Mexican-American respondents, parenting will have a negative influence on low self-control and, in turn, low self-control will have a positive relationship with delinquency. In other words, a greater score on the parenting scale should be indicative of a lower score on the low self-control scale and less self-reported offending. Differences are expected to appear when examining the strength of the relationship between the variables. Based on previous research, Mexican-American adolescents should on average score higher on the parenting scales have lower scores on the low self-control scale and less self-reported offending than their non-Mexican-American counterparts.

The second part of this analysis will introduce into the Mexican-American sample the moderating effects of generational status. As suggested by previous acculturation research, it is anticipated that first- and second-generation immigrants will score higher on the parenting scale due to their close connection to family and culture. Third-generation immigrants and non-immigrants (i.e. Mexican-Americans who did not

immigrate to the country nor have parents or grandparents who immigrated to the country) are hypothesized to have lower scores on the parenting scale, which may increase both one's score on the low self-control scale and self-reported offending.
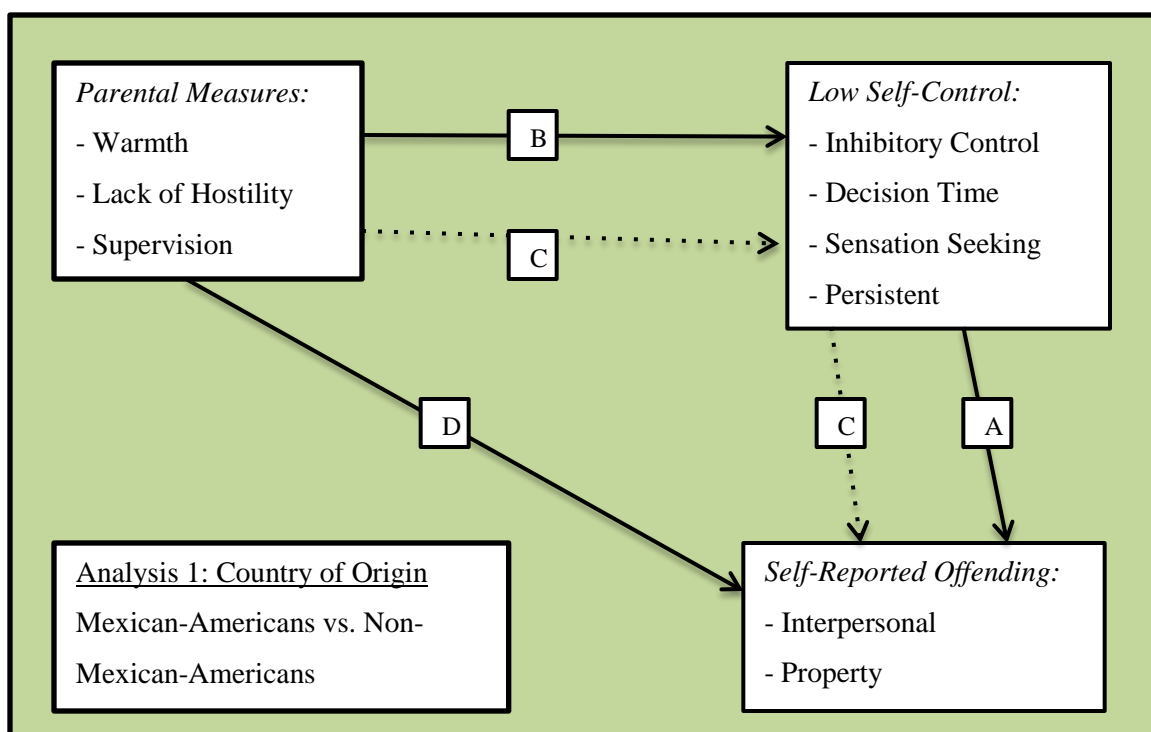
Figure 3.1. Analysis 1: Proposed Causal Pathways Linking Parental Measures, Self-Control, and Self-Reported Offending Moderated by Country of Origin

Research Hypotheses

The research hypotheses for this study have been separated in two analyses. The first analysis addresses self-control differences between Mexican-American and non-Mexican-American adolescents. The second analysis addresses self-control differences within the Mexican-American sample by generational status.

Analysis 1: Differences in Ethnicity

Figure 1 presents the multiple paths of causation proposed by the self-control theory; each path has an associated hypothesis. Path A represents the hypothesis that low self-control has a positive relationship with self-reported offending. In other words, those who score higher on the low self-control scale will also report a greater involvement in delinquent behavior. The second hypothesis, that parenting has a negative relationship with low self-control, is presented in Path B. Path C suggests that low self-control mediates the relationship between parenting and self-reported offending. This means that self-control will add to the effect parenting has on self-reported offending. Path D represents the fourth hypothesis for Analysis 1 which is that parental measures and self-reported offending will have a negative relationship, such that higher parenting scores will be indicative of lower levels of offending. Keeping with the invariance tenet of the theory proposed by Gottfredson and Hirschi (1990), each of these hypotheses should be true regardless of the respondent's ethnicity.

The final hypothesis for the first part of the analysis is that the relationship between parental measures, low self-control, and self-reported offending will be moderated by ethnicity. Specifically, Mexican ancestry will be associated with higher scores on the parental measures scale, lower scores on the self-control scale, and less self-reported offending.

Analysis 2: Differences in Generational Status

The hypotheses for Analysis 2 are depicted in Figure 2. The only difference between this analysis and the previous analysis is the group that is being examined: Mexican-Americans of differing generational status. Path E suggests that low self-control has a positive relationship with self-reported offending. Path F suggests that parenting has a negative relationship with low self-control. The mediated relationship between parenting and self- reported offending via low self-control is presented in Path G. Path H suggests that parental measures and self-reported offending will have a negative relationship, such that higher parental measure scores will be associated with less offending. If Gottfredson and Hirschi (1990) are correct, these relationships should exist regardless of the respondent's generational status.
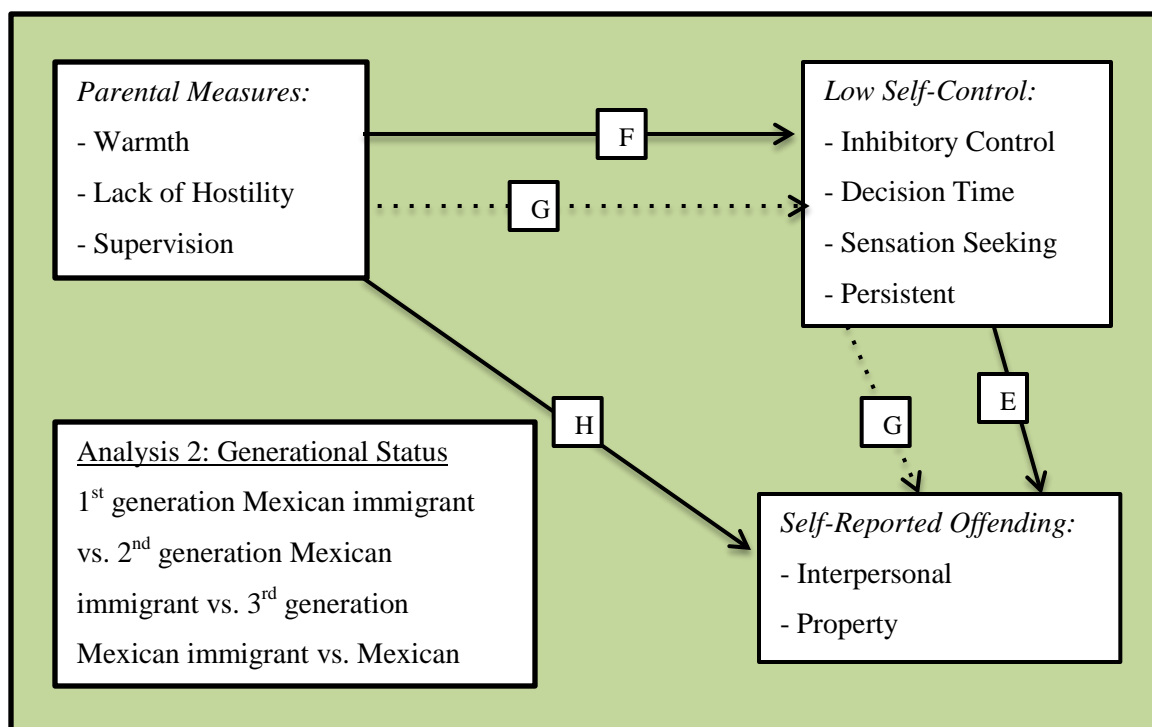
Figure 3.2. Analysis 2: Proposed Causal Pathways Linking Parental Measures, Self-Control, and Self-Reported Offending Moderated by Generational Status

The final hypothesis for the first part of the analysis is that the relationship between parental measures, low self-control, and self-reported offending will be moderated by generational status. Specifically, it is hypothesized that those who have recently immigrated from Mexico or whose parents were first generation Mexican immigrants will have higher scores on the parental measures scale, lower scores on the low self-control scale, and will report less offending than those who are more assimilated.

Data and Sample

Data

To test this study's hypotheses, data from the Project on Human Development in Chicago Neighborhoods: Longitudinal Cohort Study (PHDCN: LCS), an interdisciplinary study of the effects of family, school, and environment on adolescent development (Earls, 2002) are used. The PHDCN was completed to examine the effect of these factors, and changes in these factors, on antisocial behavior. The data are appropriate for the current research for multiple reasons.

First, the location from which the data were gathered is ideal. For more than a century, Chicago has been a prime location for research on immigration. The number of foreign individuals in the city grew by unprecedented numbers between 1880 and 1960 (Bursik, 2006). Additionally, in the 1990s, approximately 75 percent of population growth in Chicago was due to an influx of immigrants from predominately Latin American and Asian countries (Paral & Norkewicz, 2003). At the time the PHDCN data

were collected, Chicago ranked second only to New York City in its population of immigrants (Paral & Norkewicz, 2003).

Another reason the PHDCN is an excellent dataset for this research is its inclusion of information for both subjects and their primary caregivers (PC). The dataset also includes observations of the home environment, which will be used for measurement of parenting. A final reason the PHDCN was chosen is that it has already been found useful in research relevant to the current study, including self-control, generational status, ethnicity, and self-reported offending (Morenoff & Astor, 2006; Sampson, Morenoff, & Raudenbush, 2005).

PHDCN Sampling Design. While there are several components that make up the PHDCN (e.g. the Community Survey), the Longitudinal Cohort Study (LCS) will be the only component used in the current research. The sample design for the PHDCN includes two major steps: selecting neighborhoods and selecting dwellings. First, Chicago census tracts (847) were combined into neighborhood clusters (343), each consisting of approximately 8,000 people. The clusters were formed using geographic boundaries as well as a stratification procedure to produce a representative sample of Chicago neighborhoods, based on race and ethnicity and socioeconomic status. Eighty groups were then selected through a stratified probability sample, from which block groups were chosen at random.

From the block groups, a random sample of dwellings was used to choose subjects for the survey. Children, separated into groups (i.e. under 1, 3, 6, 9, 12, 15, and 18) and their primary caretakers (PC) from more than forty thousand dwellings were

recruited for the study and interviewed up to three times between 1994 and 2002. Between 1994 and 1997, more than 6,000 subjects were interviewed for Wave 1 (n = 6,228). Wave 2 interviews were completed between the years 1997 and 1999, with approximately 86 percent of the original sample participating (n = 5,338). The final wave of data collection occurred between 1999 and 2002, with more than 90 percent of the second wave sample being interviewed (n = 4,850).

Current Study Sample. The current research will rely on Wave 1 and Wave 2 data from cohorts of 9, 12, and 15 year olds from the PHDCN to assess whether country of origin, generational status, and parenting interact to affect level of self-control and offending. Due to the lag between the waves, spanning between two and three years, the subjects' age during the second wave ranged between 11 and 18 years. The decision to use data from subjects in the 9-, 12-, and 15-year cohorts is based on the following criteria. First, these age groups have reached the age at which Gottfredson and Hirschi (1990) suggested that self-control should be developed. Second, these age groups have been used in delinquency research due to their risk of being involved in delinquency and crime (Miller, 2012).

Consistent with this type of research (i.e. longitudinal survey research), respondent attrition and lack of response leaves many missing values. Approximately 82 percent (n = 1913) of the 9, 12, and 15-year-old cohort from the original sample (n=2345) participated in the Wave 2 self-reported offending questionnaire. Previous researchers who have used the PHDCN to examine delinquency have addressed characteristic differences between those who make up the attrition sample (n =431) and those who

remained during Wave 2. At least one comparison of the attrition sample and study sample has demonstrated that the two groups vary from one another based on several characteristics (DiPietro, 2010). In her dissertation on immigration, family, and delinquency, DiPietro (2010) found the attrition sample to include more third generation-immigrant youth and less second-generation youth than the study sample. The samples differ in ethnic makeup as well, with the attrition sample composed of fewer whites and Hispanics, but more African Americans. DiPietro (2010) also found there to be fewer two parent homes, lower SES, lower residential tenure, and fewer respondents living in predominantly white neighborhoods in the attrition group.

Tables 1 and 2 present the descriptive statistics of the attrition and study samples for the current research. The study sample contained a greater number of Mexican-American respondents, more second-generation immigrant Mexican respondents, and more non-immigrant Mexican-American respondents. The socioeconomic status (SES) of the neighborhood cells is different between the two groups, with the study sample having more neighborhoods of a middle class status, and the attrition sample being mostly composed of lower class. An interesting difference specific to this project is the observation that the attrition sample had a higher score on the low self-control scale and lower scores on the parenting scale.

To address the issue of missing data, researchers have invoked different strategies. To ensure a complete dataset, DiPietro included only the subjects that completed the Wave 2 self-report offending survey. While common in research in the social sciences, using only a sample of those with complete data can lead to a reduction in sample size. The reduction in sample size may lead to issues of bias if the data are not

missing completely at random. In their research on social context, ethnicity, and violence, Sampson et al. (2005) used a model that permitted the use of all other information than that which was missing (e.g. mean substitution or multiple imputation).

For the current research, it appears that although there are some differences between the sample and the attrition groups, none of these differences are extreme (i.e. a difference of .02 in most cases). It is assumed that the data are missing at random and case-wise deletion will be used to drop cases with missing data. As mentioned previously, this affects the sample size and perhaps the generalizability of the current research, which is one of the shortcomings of such a method and the current study.

Table 3.1. Characteristics of the Attrition Group

Attrition Group		n	mean	sd	min	max
Self-control (Wave 1)	(α = 0.75)	404	2.69	.720	1.05	4.70
Inhibition Control	(α = 0.47)	415	2.48	.997	1	5
Decision Time	(α = 0.48)	415	2.96	1.02	1	5
Sensation Seeking	(α = 0.42)	417	2.98	1.07	1	5
Persistence	(α = 0.43)	412	2.41	.916	1	5
Parental Measures (Wave 1)	(α = 0.76)	368	.820	.130	.38	1
Warmth	(α = 0.79)	407	.670	.260	0	1
Lack of Hostility	(α = 0.82)	395	.930	.200	0	1
Supervision	(α = 0.58)	393	.880	.120	.30	1
Ethnicity (Wave 1)						
Mexican-American		431	.260	.440	0	1
First Generation Mexican-American		431	.080	.280	0	1
Second Generation Mexican-American		431	.150	.350	0	1
Third Generation Mexican-American		431	.010	.080	0	1
Non-Immigrant Mexican-American		431	.020	.140	0	1
Background Characteristics (Wave 1)						
Gender		431	.500	0.50	0	1
Age		431	12.1	2.47	8.63	16.99
Neighborhood Characteristics (Wave 1)		n		mode		
SES		431		1*		
Ethnic Makeup		431		A.A.**		

* Low SES
** 70 percent or more African American

Table 3.2. Sample Group Characteristics

		n	mean	sd	min	max
Self-control (Wave 1)	(α = 0.75)	1848	2.68	.690	1	5
Inhibition Control	(α = 0.65)	1865	2.46	.940	1	5
Decision Time	(α = 0.50)	1874	2.97	1.02	1	5
Sensation Seeking	(α = 0.35)	1875	3.01	1.02	1	5
Persistence	(α = 0.53)	1874	2.40	.950	1	5
Parental Measures (Wave 1)	(α = 0.71)	1689	.840	.110	.30	1
Warmth	(α = 0.74)	1802	.710	.230	0	1
Lack of Hostility	(α = 0.88)	1813	.930	.210	0	1
Supervision	(α = 0.52)	1820	.900	.110	.30	1
Ethnicity (Wave 1)						
Mexican-American		1913	.340	.470	0	1
First Generation Mexican-American		1913	.080	.270	0	1
Second Generation Mexican-American		1913	.210	.410	0	1
Third Generation Mexican-American		1913	.010	.100	0	1
Non-Immigrant Mexican-American		1913	.030	.170	0	1
Background Characteristics (Wave 1)						
Gender		1913	.500	.500	0	1
Age		1913	11.9	2.42	7.77	16.38
Neighborhood Characteristics (Wave 1)		n		mode		
SES		1913		2*		
Ethnic Makeup		1913		A.A.**		

* Medium SES

** 70 percent or more African American

Measures

All variables used in the current study were created using items from Wave 1 and

Wave 2 of the PHDCN. The main variables of interest include: self-control, parenting,

and delinquency.

Dependent/Endogenous Variables

Two dependent, or endogenous, variables are included in the current study: self-

report offending and low self-control. Self-report offending, including both interpersonal

and property crime, is suggested to be a consequence of low self-control. The use of self-

report offending has been subject to scrutiny in the past due to the potential for deliberate falsification of answers, an inability to cover the full range of delinquent activities in which youth may engage, and the potential for overlap of items (Elliot & Ageton, 1980). The subjects of interest for this research may pose even more issues with self-report offending. Due to the inclusion of generational status as an important variable in this research, it should be noted that first- and second-generation immigrant participants might underreport delinquency due to fear of legal action. While unavoidable, research on U.S. immigrant populations using other data sources (e.g. The National Longitudinal Study on Adolescent Health) has found low levels of offending among first-generation immigrant youth.

Self-report offending (SRO)

Self-control theory seeks to explain delinquent behavior. Specifically, Gottfredson and Hirschi (1990) proposed poor parenting as the cause for low self-control, which increases the likelihood of crime and criminally analogous behaviors. For the current research, data on criminal behavior are drawn from the Self-Report of Offending (SRO) questionnaire of the Project on Human Development in Chicago Neighborhoods. This questionnaire was originally adapted from Huizinga, Esbensen, and Weihar's (1991) questionnaire in the Denver Youth Survey. Data from the SRO questionnaire was collected in Wave 2 of data collection. Respondents were asked to self-report whether they had participated in a range of property and violent offenses in the 12-month period prior to the survey (e.g. hit someone you did not live with). Of the 32 law-violating

behaviors used in the original research, a total of 19 offenses are used in the current study. These are listed in Table 3.

A count variable was created, a sum of all items, with higher values denoting greater levels of involvement in delinquent behaviors. The items were separated into interpersonal and property offending to explore whether there are differences in types of offending predicted by self-control. In criminological research, it is common to use a count to combine dichotomous variables as a means of producing measures better suited for analysis (Osgood, McMorris, & Potenza, 2002). This measure should be less skewed than crime data, but yet still provide an idea of one's propensity to crime. An additional reason to use the method is because the interest of the research is not to understand the extent of one's offending, but rather whether they have offended in the previous 12 months.

Measurement issues still arise when this method is used. The first issue with creating a count variable from multiple dichotomous variables is there is an assumption that severity does not vary. For example, stealing from a car is not the same as stealing a car. Statistical issues may also exist. Often there is a positive skew among the self-reported delinquent behaviors that will be present in the sum as well. The histogram for self-report offending demonstrates that this is true for the data used in the current research (see Figure 3). Of those who participated in both waves of the study, more than 60 percent did not report committing any offenses in the previous 12 months. The solution for statistical issues that may arise will be addressed in the methodological considerations section of this chapter. The average number of types of offenses

committed in the previous year is approximately .88, though some subjects committed up

to 12 types of offenses in the same time period.

Table 3.3. Self-Reported Offending Scale

	n	mean	sd
Property Crimes			
In the previous year did the respondent:			
Purposefully damage or destroy someone else's property (ss5a)?	1909	.08	.27
Enter or break into a building to steal something (ss7a)?	1909	.00	.07
Steal something from a store (ss8a)?	1909	.08	.27
Steal something from member of the household (ss9a)?	1907	.12	.34
Steal from a car or motorcycle (ss12a)?	1908	.01	.11
Steal a car or motorcycle (ss14a)?	1909	.00	.08
Personal Crimes			
In the previous year did the respondent:			
Carry a hidden weapon (ss3a)?	1911	.06	.24
Purposefully set fire to a house, car, or building (ss6a)?	1908	.00	.06
Snatch someone's purse or wallet (ss11a)?	1908	.00	.06
Hit a member of the household (ss20a)?	1908	.09	.29
Hit someone not a member of the household (ss21a)?	1909	.18	.38
Attack someone with a weapon (ss22a)?	1909	.02	.16
Use a weapon or force to get money from people (ss23a)?	1909	.00	.06
Throw objects (e.g. rocks, bottles) at people (ss24a)?	1908	.09	.29
Shoot someone (ss26a)?	1894	.00	.05
Shoot at someone (ss27a)?	1891	.00	.08
Participate in a gang fight (ss28a)?	1903	.03	.19
Threaten to physically hurt someone (ss29a)?	1888	.05	.21
Tried to forced sex from someone (ss30a)?	1811	.00	.02
Response categories: 1 = yes 0 = no			
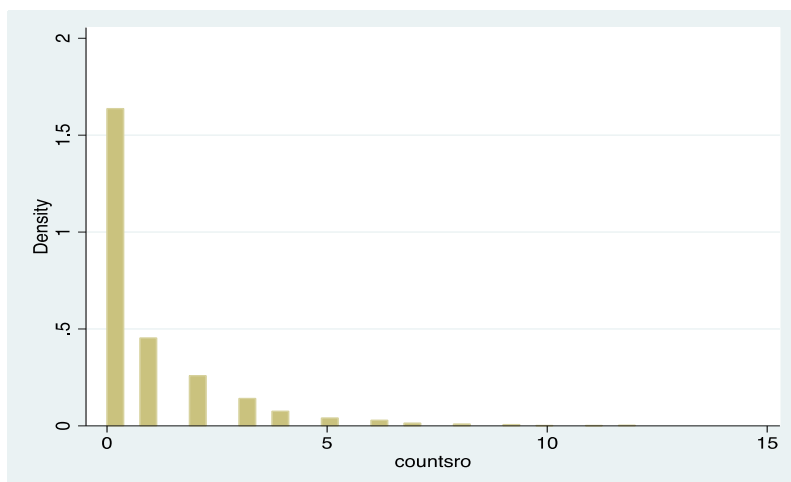
Figure 3.3. Histogram of the Count of Self-Reported Offending

Interpersonal Offending. For the current study, 13 violent offenses will be used to measure interpersonal offending. The choice to use these items is based on previous research using the PHDCN to examine delinquency (Miller, 2012). Each subject was asked whether they had engaged in the following behaviors in the previous year: (1) carried a weapon, (2) purposely set fire to a house, car, or vacant building, (3) snatched someone's purse or wallet, (4) hit someone they live with, (5) hit someone they did not live with, (6) attacked someone with a weapon, (7) used a weapon or force to get money or thing from people, (8) thrown object like rocks or bottles at people, (9) shot someone, (10) shot at someone, (11) been in a gang fight, (12) threatened to physically hurt someone, and (13) tried to have sexual relations with someone against their will. Figure 4 presents the histogram for interpersonal self-report offending, which indicates that the variable has a positive (or right) skew. This means there are few individuals who reported having committed one of these offenses in the previous year. The average number of types of interpersonal offenses committed in the previous year is meaningless, as it is less than one (.57). However, 537 respondents (30 percent) did participate in one

of the interpersonal crimes in the previous year; some subjects committed up to eight

types of interpersonal offenses.
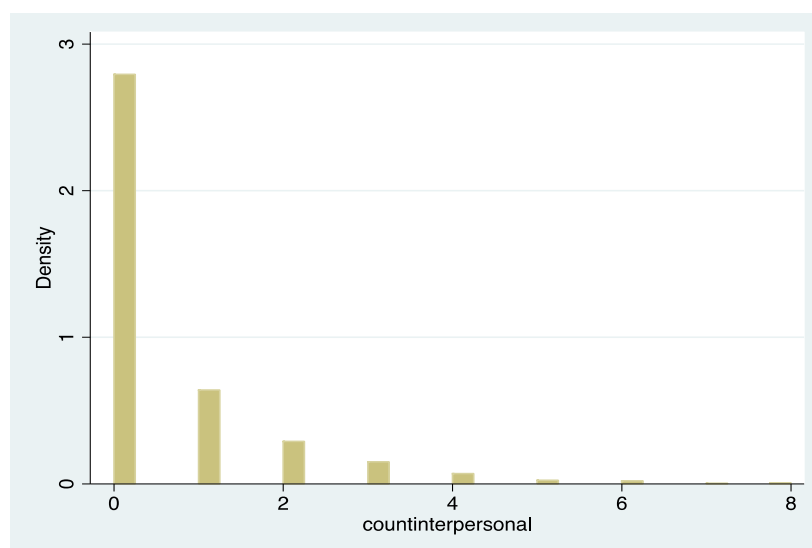
Figure 3.4. Histogram of the Count of interpersonal offending

Property Offending. Seven offenses were originally used to measure property

offending. Subjects were asked whether they had engaged in the following behaviors in

the year previous to the interview: (1) purposely damaged or destroyed property not

belonging to them, (2) entered or broken into a building to steal something, (3) stolen

something from a store, (4) taken something that didn't belong to them from any member

of their family, (5) taken something from a car not belonging to them, (6) stolen a car or

motorcycle, and (7) used credit of bankcard without permission. Due to the large amount

of missing data (over 500 missing data points) in the item asking about use of credit or

bankcard, it was removed. Upon review of the data, the nine-year old cohort had the

greatest amount of missing data for the item measuring use of credit or bankcards without

permission. For the 12- and 15-year old cohorts, only 15 cases had missing data for this

item. It may be that nine-year olds are not familiar with using credit cards or were unable to use credit cards when attempted.

The histogram for property self-report offending suggests that the variable has a high number of respondents who have not reported offending in the previous 12 months (Figure 5). Seventy-seven percent of the current sample did not report committing any property offenses in the previous 12 months. As with interpersonal offending, the average number of types of offenses committed in the previous year is meaningless, as it is less than one (.31). Thirteen percent (434 respondents) of participants reported having participated in one of the property crimes in the previous year, some committing up to six types of property offenses.
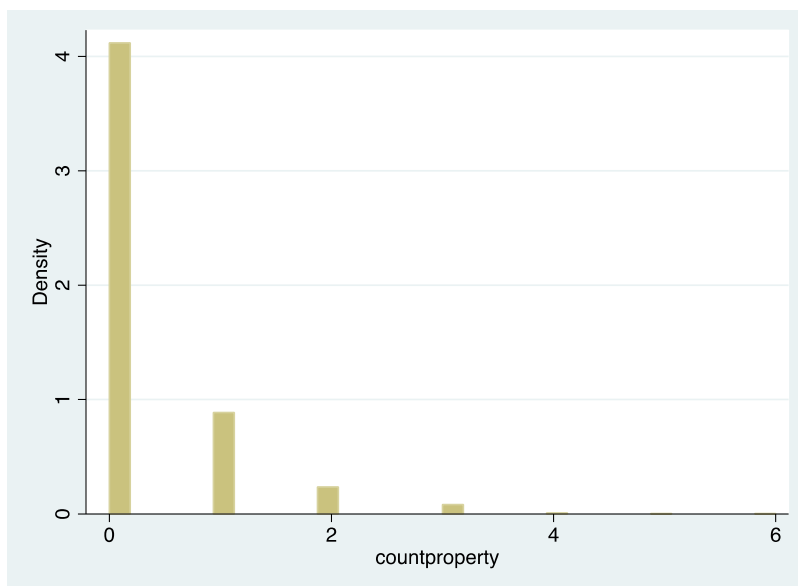
Figure 3.5. Histogram of the Count Property Offending

Low Self-control

The second dependent variable in this research is low self-control. The general theory of crime proposes that low self-control has a direct positive relationship with

delinquency. Gottfredson and Hirschi also suggested that parenting directly influences low self-control. For this study, low self-control will be measured with a scale created from sixteen behavioral items from the Emotionality, Activity, Sociability, and Impulsivity (EASI) Temperament Instrument, created by Buss and Plomin in the 1970s. Data for the EASI were gathered at Wave 1, during which primary caretakers (PCs) were asked to rate how accurately a number of items described their children's personality traits. Items were designed to measure a child's inhibition control, decision time, sensation-seeking behavior, and persistence; responses were on a five point Likert scale from uncharacteristic (0) to characteristic (5).

To create the low self-control scale, the scores for each item in the scale were summed and divided by the number of items in the scale. As the low self-control score increases, the level of self-control decreases (i.e. low self-control increases). Seventeen items were originally intended to create this scale. However, due to the large number of missing data for *will try anything once* (more than 550), the item was dropped. As a note, a majority of the adolescents with missing data for this item (556) were part of the 15-year-old cohort. Further exploration of the data did not provide any explanation as to why this group did not have data for this item.

After dropping *will try anything once*, 1848 subjects had complete data for the low self-control scale. The scale has an acceptable level of reliability ($\alpha = .75$), which is consistent with, if not better than, previous research using the same self-control measure (Gibson et al., 2010; Shekarkhar & Gibson, 2011). The mean self-control score was 2.68, meaning that there are more children in the sample with higher scores on the low self-control scale (i.e. lower self-control). The scale also has a large standard deviation,

indicating that the scores varied greatly (see Table 4). Four subscales measuring the

characteristics associated with individuals with low self-control were also created,

including inhibition control, decision time, sensation seeking, and persistence.

Inhibition Control. Inhibition control is used to measure the inability to delay

gratification and control frustration. Based on previous studies (see Gibson et al., 2009;

Gibson et al., 2010; Miller, 2012), it was anticipated that the current research would use

the following items to form the inhibition control subscale: the primary caregiver (PC)

reports that the subject (1) has trouble controlling impulses, (2) usually cannot stand

waiting, (3) can tolerate frustration better than most (reverse coded), (4) has trouble

resisting temptation, and (5) finds self-control easy to learn (reverse coded). Each of

these items was used with a majority of the sample completing items (n = 1865). The

scale has a mean score of 2.4, which indicates the sample has modest control over their

inhibitions. Again, the standard deviation is quite high (.94), indicating that the

respondents have a wide range of scores on this subscale (see Figure 6).

Decision Time. Decision time is used to measure the inability to delay decision-

making until other alternatives can be considered. Based on previous studies (see Gibson

et al., 2009; Gibson et al., 2010; Miller, 2012), the current research uses the following

items to form the decision time subscale: the primary caregiver reports that the subject (1)

often says the first thing that comes to his/her head, (2) likes to make detailed plans

before acting (reverse coded), (3) often acts on the spur of the moment, and (4) likes to

plan things way ahead of time (reverse coded). The mean (2.9) and standard deviation

(1.02) for this measure suggests that the subjects have poor decision making abilities. A

histogram demonstrating the scores for this scale is displayed in Figure 7, which suggests

that there is more variance than the mean and standard deviation imply.

Table 3.4. Self-Control Scale

Response categories:			
1: uncharacteristic, 2: somewhat uncharacteristic, 3:neither, 4: somewhat uncharacteristic, 5: characteristic			
Inhibitory Control			
The subject…	n	mean	sd
Has trouble resisting temptation (ey6)	1877	2.12	1.42
Finds self-control easy to learn (reverse coded) (ey14)	1882	2.04	1.35
Can tolerate frustration better than most (reverse coded) (ey15)	1880	2.42	1.40
Usually cannot stand waiting (ey24)	1879	3.36	1.58
Has trouble controlling impulses (ey25)	1880	2.35	1.53
Decision Time			
The subject…			
Often acts on spur of the moment (ey2)	1883	2.98	1.60
Often says first thing that comes to head (ey21)	1878	3.22	1.65
Likes to make detailed plans before doing (reverse coded) (ey28)	1882	2.81	1.57
Likes to plan things way ahead of time (reverse coded) (ey38)	1880	2.88	1.61
Sensation Seeking Behavior			
The subject…			
Sometimes does crazy things to be different (ey4)	1881	2.23	1.54
Seeks new and exciting experiences (ey13)	1879	3.41	1.52
Tends to get bored easily (ey23)	1883	3.38	1.59
Persistence			
The subject…			
Is bothered by unfinished tasks (reverse coded) (ey8)	1883	3.04	1.64
Generally likes to see thing through to the end (reverse coded) (ey29)	1881	2.13	1.37
Tends to give up easily (ey36)	1879	2.29	1.50
Hates to stop once gets going on something (reverse coded) (ey39)	1883	2.12	1.38
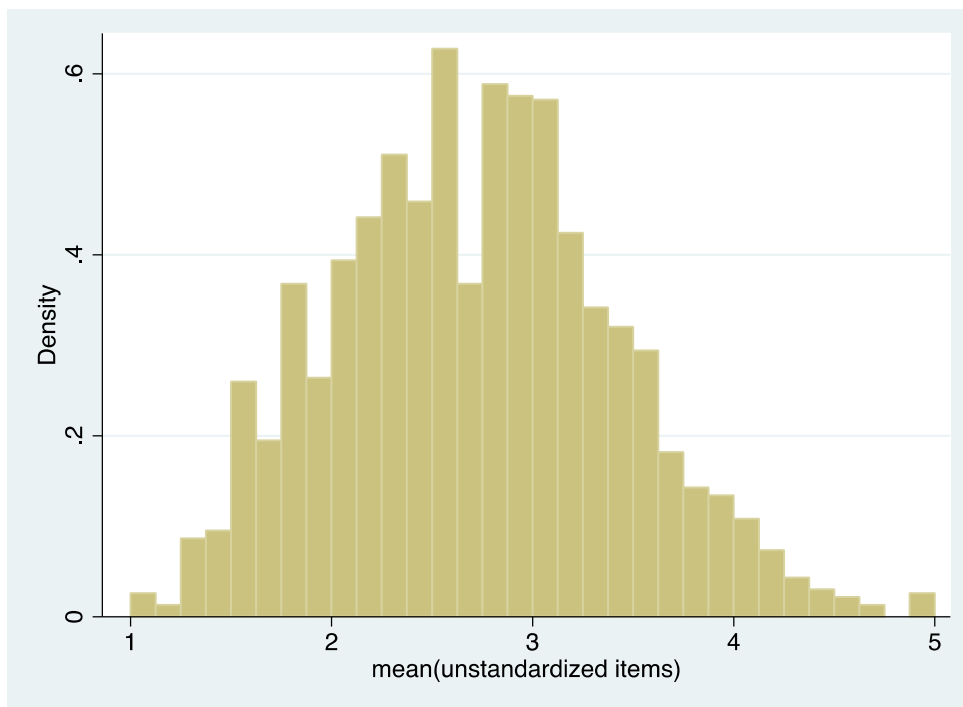
Figure 3.6. Histogram of Inhibition Control Scores
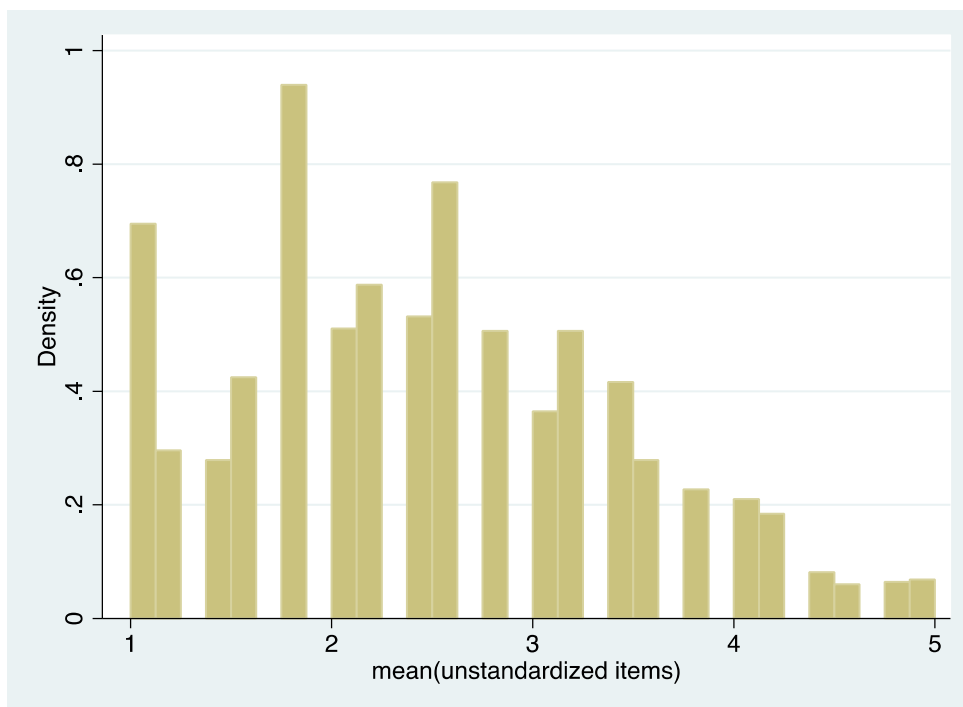
Figure 3.7. Histogram of Decision Time Scores

Sensation-Seeking Behavior. The sensation seeking subscale is used to measure the extent that an individual participates in risk-taking behavior or has preference for novel stimuli. Measures for the current study include: the PC reports that the subject (1) seeks new and exciting experiences, (2) sometimes does crazy things to be different, and (3) tends to get bored easily. The mean sensation seeking score was 3.01, with a large standard deviation (1.02), which indicates that the subjects range from slightly sensation seeking to very sensation seeking. A histogram demonstrating the scores for this scale is displayed in Figure 8.

Persistence. Persistence is used to understand an individual's lack of diligence or the likelihood that a child will follow through with a task. Those with low self-control may be the first to initiate a task, but also first to abandon it when it appears to be difficult. Based on previous studies (see Gibson et al., 2009; Gibson et al., 2010; Miller, 2012), the following measures were used to create the persistence subscale: the PC reports that the subject (1) generally likes to see things through to the end (reverse coded), (2) tends to give up easily, (3) is bothered by unfinished tasks (reverse coded), and (4) hates to stop once he/she gets going on something (reverse coded). The average persistence score is 2.40; a histogram of scores is presented in Figure 9.
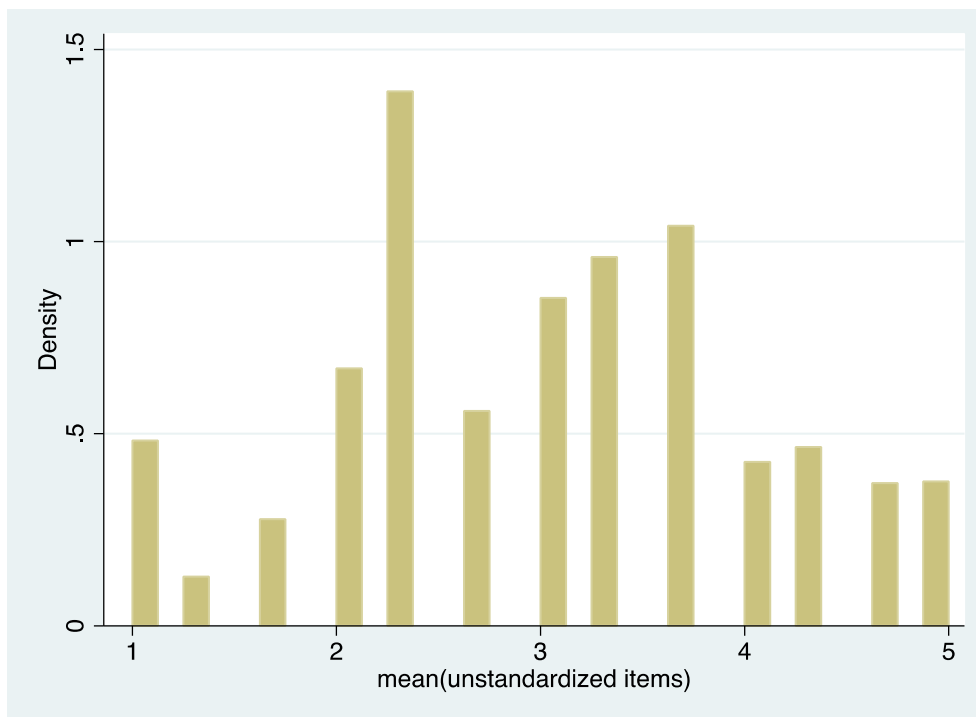
Figure 3.8. Histogram of Sensation-Seeking Behavior
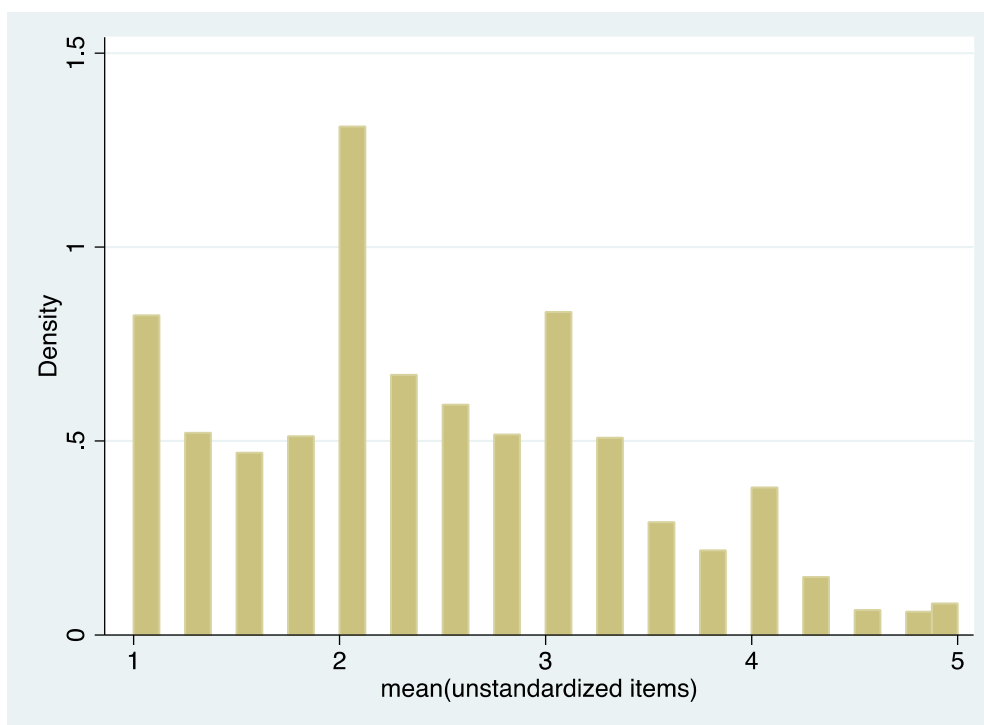
Figure 3.9. Histogram of Persistence

Independent/Exogenous Variables

Parental Measures. Data for parental measures were gathered at Wave 1. A revision of the Home Observation for Measurement of the Environment (HOME) inventory (Selner-O'Hagan & Earls, 1994) created by Caldwell and Bradley (1984) was used to collect data. The inventory was collected through observation of the developmental environment in which children were raised. Cognitive stimuli and physical conditions of the home were taken into account, as well as the interactions between the children and their caregiver. These interactions were used to measure parenting; observer took record of whether an interaction occurred.

For the current research, the data of interest include items that measure parental warmth, lack of hostility, and level of supervision. An unstandardized mean scale will be used for the parenting measures (see Table 5). The scale has acceptable reliability (α = .71), consistent with other studies using the same measures for parenting variables (Gibson et al., 2010). The removal of four items (requires subject to sleep at home on school nights, subject is not allowed to wander in public places without adult supervision for more than three hours, has discussed hazard of alcohol and drug abuse with subject in the past year, and knows signs of drug use and remains alert to possible type or experimentation) may have increased the reliability of the measure, but none would better the scale more than .023. The mean score for the overall parenting measure is .84, indicating that on average, the observers viewed many homes in which parents and children had a positive home environment.

Warmth. Based on previous research the current study will use following items to form the parental warmth subscale (Gibson et al., 2010): while in the home, interviewer observes the parent (1) talks with child twice during the visit, (2) answers the child's questions, (3) encourages the child to contribute, (4) mentions the child's skills, (5) praises the child twice during the visit, (6) uses a diminutive for child's name, (7) voices positive feelings to the child, (8) caresses, kisses, or hugs the child, and (9) responds positively to praise of child. The subscale has an acceptable level of reliability ($\alpha = .74$), though not as high as preferred. Warmth also has a lower average score than that of overall parenting (.71).

Lack of Hostility. The following items were used to measure lack of hostility: while in the home the interviewer does not observe the primary caregiver (1) shouting at the child, (2) express annoyance with the child, (3) slap or spank child, or (4) scold or criticize child. Lack of hostility has the highest reliability of all the subscales and overall scale ($\alpha = .88$). The mean score for the subscale is also the highest (.93), indicating that the homes that were observed had a low level of hostility expressed between parent and child. It may also be that parents do not act in the usual manner when strangers are observing them.

Table 3.5. Parenting Variables

Response categories: 1 = yes 0 = no	n	mean	sd
Warmth			
During the visit did the primary caregiver…			
Talk with the subject twice (h1_1)?	1850	.93	.25
Verbally answer one of the subject's questions (h1_2)?	1849	.84	.36
Encourage the subject to contribute to conversation (h1_3)?	1849	.75	.43
Mention particular skills of the subject (h1_4)?	1853	.71	.45
Praise the subject twice (h1_5)?	1849	.67	.47
Use a diminutive for subject's name (h1_6)?	1846	.44	.49
Use their voice to convey positive feelings (h1_7)?	1853	.94	.23
Caress/kiss/hug the subject once (h1_8)?	1847	.30	.46
Have a positive response to praise of the subject (h1_9)?	1826	.83	.36
Lack of Hostility			
Primary caretaker (PC) does not…			
Shout at the subject during the visit (h5_1)	1824	.92	.26
Express annoyance with the subject during the visit (h5_2)	1822	.92	.26
Slap/spank subject (h5_3)	1823	.95	.21
Scold/criticize sub (h5_4)	1814	.91	.27
Supervision and Monitoring			
Subject has a curfew on school nights (h4_1)	1888	.99	.08
Subject has a curfew on weekend nights (h4_3)	1885	.97	.16
The primary caretaker (PC) has rules about homework and checks to see if homework is done (h4_5)	1882	.90	.29
Subject must sleep at home on school nights (h4_7)	1888	.91	.27
When out of town, the PC checks in with the subject (h4_8)	1885	.95	.20
Subject is supervised after school (h4_9)	1885	.91	.27
PC has rules for the subject's behavior with their peers and checks to make sure they are followed (h4_10)	1889	.94	.23
Subject is not unsupervised in public for more than three hours (h4_11)	1874	.80	.39
PC has had contact with two of the subject's friends in the past week (h4_12)	1881	.80	.39
PC has spoken with someone at the subject's school in the past three months (h4_13)	1875	.88	.32
PC has discussed the hazards of alcohol and drugs with the subject in the past year (h4_18)	1886	.90	.29
PC denies the subject access to alcohol, even in the home (h4_19)	1888	.79	.40
PC knows the signs of drug use and remains alert to experimentation (h4_20)	1889	.89	.30

Supervision and Monitoring. Supervision and monitoring were measured with the following items: while in the home, the interviewer finds that (1) the subject has a curfew on school nights, (2) the subject has a curfew on weekend nights, (3) the PC has established rules about homework and checks to see if homework is done, (4) the subject is required to sleep at home on school nights, (5) when PC is not at home, procedures are established for the subject to check in, (6) after school, subject goes somewhere that adult supervision is provided, (7) there are established rules for behavior with peers and PC ensures they are being followed, (8) the subject is not allowed to wander in public places without adult supervision for more than three hours, (9) the PC had contact with two of the subject's friends in the past two weeks, (10) the PC visited with school or talked to the teacher or counselor within the past three months, (11) the PC has discussed the hazards of alcohol and drug abuse with the subject in the past year, (12) the PC denies subject access to alcohol, and (13) the PC knows signs of drug use and remains alert to possible type or experimentation. This subscale had the lowest alpha score of all the subscales ($\alpha = .52$). Like the other subscales and the overall parenting scale, the supervision subscale had a high average (.90), which indicated that the level of supervision observed or reported by the primary caregiver was very high.

Moderating Variables

Two variables from the PHDCN master file are used to determine if there is any variation in the application of self-control theory between demographic groups. Examined first will be country of origin, specifically examining whether there are differences in applying the theory to Mexican-American and non-Mexican-American

adolescents. A second analysis will be completed by examining differences between

those of Mexican ancestry who are of different generational status. Table 6 includes

descriptive data on moderating and control variables for the current research.

Table 3.6. Individual Characteristics

Characteristic	Response Categories	n	mean	sd
Sex	0 = female	1913	.50	.50
	1 = male			
Age	Continuous variable	1913	11.9	2.4
SEI max		1634	43.52	17.48
Mexican-American				
	0 = no 1 = yes	1913	.34	.47
	First Generation Immigrant	1913	.08	.27
	Second Generation Immigrant	1913	.21	.41
	Third Generation Immigrant	1913	.01	.10
	Non-Immigrant	1913	.03	.17

Country of Origin. Official data, as well as most research in the field of

criminology, use the label Hispanic to group individuals of different countries of

ancestry. The purpose of the current research is to examine self-control theory's

invariance tenet by focusing on only one of the countries identified as being Hispanic:

Mexico. Country of origin was collected in a primary caretaker interview at Wave 1 and

is measured in the current research with one dichotomous variable (Mexican-American =

1, Not Mexican-American = 0). Thirty-four percent of the study participants (n = 656)

are Mexican-American.

Generational Status. For the current research, generational status will be used as

a measure of acculturation. Some researchers suggest language is a better measure due to

its ability to address potential variation within generations, but generational status

continues to be recognized as sufficient (Berry, 2006; Miller, 2011). Consistent with

prior immigration research (Bui, 2009), and more specifically immigration research using the PHDCN (Miller, 2011; Morenoff & Astor, 2006; Sampson et al., 2005), first-generation immigrants are subjects born outside the U.S. Second-generation immigrants were born in the U.S., but have one or more parents born outside the U.S. Third-generation immigrants were born in the U.S., have parents born in the U.S., and have one or more grandparents who were born outside the country. Non-immigrants do not have parents or grandparents who immigrated to the U.S.

Twenty-nine percent (n = 157) of the Mexican-American sample used is first generation immigrants; more than 60 percent (n = 416) are second-generation immigrants. Together, third generation immigrants and non-immigrant Mexican-Americans make up less than 100 subjects (n = 83). Due to the small number of individuals that make up these last two groups, they will be combined when doing more than descriptive analysis. Nationally, the breakdown of generational status of Hispanic immigrants is also second-generation heavy. Fifty two percent of the U.S. Hispanic population is second generation; eleven percent of the Hispanic population are first generation immigrants and 37 percent third generation immigrant or greater (Frye & Passel, 2009).

Control Variables

Although the present study is primarily interested in examining the effects of country of origin and generational status on parenting, self-control, and delinquency, several control variables have also been included to better understand group differences.

Previous research has suggested that individual characteristics such as gender, age, and relationships with delinquent peers are associated with delinquency (Canter, 1982; Cernkovich & Giordano, 1987; Matsueda & Heimer, 1987). These characteristics, as well as socioeconomic status (SES), have also been associated with the measures of parenting that are used in the current research (Cernkovich & Giordano, 1987; Krohn, Stern, Thornberry, & Jang, 1992; Simpson & Elis, 1995; Smith & Krohn, 1995; Vazsonyi & Flannery, 1997).

Gender. Data on the gender of the subject are provided in the PHDCN master file for Wave 1. It is a dichotomous variable: 0 = female and 1 = male. The breakdown between male and female is approximately equal.

Age. Age is a continuous measure of the age of the subject provided also in the PHDCN master file. Due to missing data issues, the average age of the subjects is slightly skewed. On average, the majority of the children in the sample at Wave 1 were approximately 12 years old.

Socioeconomic Status. A composite measure of SES will be included in the current research as well. The SES index, located in the PHDCN master file, is comprised of household income, maximum education of the PC and partner, and SES index of the jobs of the primary caretaker (PC) and partner. SES will be measured as a continuous variable with higher scores indicating higher SES. The mean for this variable was 43.52. With a minimum of 17 and maximum of 97, it appears that this measure has a normal

curve. Upon closer examination, there is cluster of individuals at the lower end of the scale (see Figure 10).
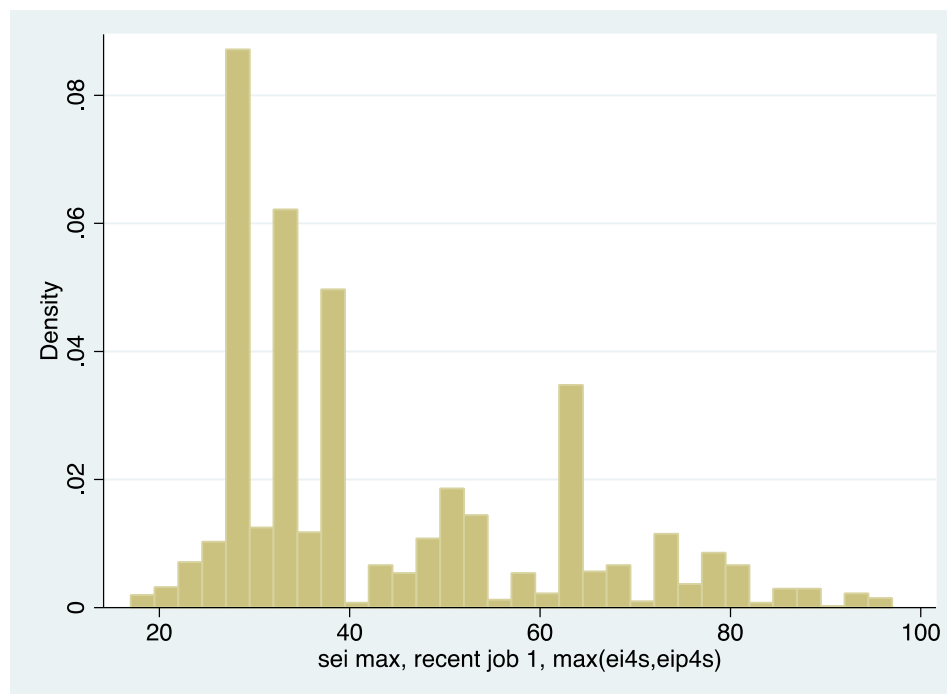
Figure 3.10. Histogram of Socioeconomic Status

Delinquent peers. Research has shown that having delinquent peers accounts for much variance in delinquency. It has been suggested that those with low self-control are more likely to also have a greater number of delinquent peers. Eight items from the Deviance of Peers instrument were used to understand how many of the respondent's peer participated in minor and serious delinquency among peers in the past 12 months (see Table 7). Responses range from 1 = none of them to 4 = all of them. Items were combined into an unstandardized scale with a good level of reliability (α = .851). The mean of the scale is 1.64, indicating that, on average most of the juveniles in the sample did not have many delinquent peers.

Table 3.7. Deviance of Peers

In the previous year, how many of your friends have:			
Response categories: 1 = none 2 = some 3 = most 4 = all			
	n	mean	sd
Gotten in trouble at school (DQ3)	1819	2.14	.764
Purposefully damaged or destroyed property (DQ5)	1827	1.58	.726
Stolen something worth more than $5 and less than $500 (DQ7)	1797	1.41	.659
Attacked someone with a weapon with the idea of seriously hurting them (DQ8)	1818	1.20	.506
Used marijuana or pot (DQ9)	1803	1.63	.894
Used any form of alcohol (including wine, liquor, or beer) (DQ10)	1816	1.78	.936
Used tobacco (DQ11)	1821	1.59	.852
Had sexual intercourse (DQ12)	1727	1.76	.944

Neighborhood Level Control Variables

Research suggests that assimilation is linked to the environment in which one is received (Portes & Zhou, 1993). It is important to control for the potential influence neighborhood conditions have on delinquency as suggested by literature on neighborhood mechanisms of social control and disadvantage in studying immigrant delinquency (Desmond & Kubrin, 2009; Morenoff & Astor, 2006; Sampson et al., 2005). Neighborhood characteristics will be controlled for in two ways: racial-ethnic composition and neighborhood concentrated disadvantage. Data on these variables are included in Table 8.

Concentrated disadvantage. The creators of the Project on Human Development in Chicago Neighborhoods derived a measure of concentrated disadvantage from the 1990 census data. This variable is based on a six item scale that sums the standardized neighborhood level measures of median income, percentage college educate, percentage with a household over $50,000, percentage of families below the poverty line (reverse coded), percentage on public assistance (reverse coded), and percentage with a household income less than $50,000 (reverse coded). Because current research uses the restricted version of the PHDCN, disadvantage is not a continuous index. The variable is split into three categories: low, medium, and high SES. Approximately 40 percent of the subjects in the current study came from neighborhoods of medium SES; 36 percent of the subjects are from neighborhoods classified as lower SES. For analysis, this variable will be dichotomous; 0 = medium and high SES and 1 = low SES.

Racial-Ethnic Composition. The ethnic composition of the neighborhood was also derived from the 1990 census. The variable is comprised of four dichotomous variables that are coded as follows: African American neighborhood cluster (NC) (i.e. the neighborhood cluster is made up of more than 70 percent African American), White NC, Hispanic NC, and Mixed NC (i.e. less than 70 percent of one single ethnic group).

Fifty-four percent of the subjects in the current research come from neighborhood clusters that are less than 70 percent of one ethnic group. Twenty one percent of the subjects in the current research come from neighborhoods that are more than 70 percent African American. In the current analysis, a dichotomous variable representing neighborhoods that are 70 percent or more Hispanic (12 percent) is used.

Table 3.8. Neighborhood Control Variables

	Frequency
Socio-economic Status	1913
Low	695
Medium	748
High	470
Ethnic Composition	1913
African American NC	401
Caucasian NC	261
Hispanic NC	211
Mixed NC	1040

Analytical Plan

Methodological Considerations

There are two major methodological issues that need addressed prior to the

analyses. The first of these concerns the complex sampling design of the PHDCN. Due

to respondents being recruited from specific neighborhood cells, the dataset is clustered

and respondents within each cell are likely to have similar characteristics on a range of

variables. If these correlations are not taken into account, the standard errors are biased

downward, which leads to an increased risk of incorrectly rejecting the null hypothesis

(UCLA, 2013).

To ensure that the clustered sampling design does not affect the standard errors,

and lead to type I errors, there are various methods that may be used. One method

considered for the current dissertation is clustered robust standard error. The benefit of

using such method is that, while less efficient than the default standard error, robust errors remain valid under less restrictive assumptions. The weakness of this method as it relates to the current research is the number of clusters in the dataset. To utilize robust standard errors, it is best to have a minimum of one hundred clusters or cases. The PHDCN includes 80 neighborhood clusters. While this is near adequate, there is still the potential for the results to be biased downward.

Instead of robust errors, fixed effects panel models will be utilized to remove the nuisance that is the clusters. Fixed effects models control for a time invariant variable in an analysis, in this case the neighborhood cluster in which the respondent resides. By using this type of model, neighborhood clusters are essentially dichotomized and dropped from the model, removing between group variance.

A second data concern is the distribution of the dependent variable, self-report offending. As with most delinquency research, a majority of the sample did not report committing any acts of delinquency in the past year. A small number of the sample reported a large number of acts. To address the skew when creating an SEM in Stata, the command ADF will be utilized. ADF is an acronym for asymptotic distribution free; by using this command, there are no assumptions made of normality or symmetry. The ADF command has been found to produce efficient results, as long as the data examined do not meet the assumptions of maximum likelihood estimators.

In the case that the ADF command yields no results, the SEM will be abandoned and a Poisson based negative binomial regression model will be estimated. This type of analysis has been widely applied in criminal justice research as a method of dealing with

event variables (e.g. offending), which are non-negative and discrete (i.e. cannot have a fraction of an offense).

Negative binomial regression is employed with running analysis with over-dispersed count data (i.e. when its variance exceeds its mean). This is the case for self-reported offending (variance = 2.4, mean = .88) as well as for interpersonal self-reported offending (SRO) (variance = 1.24, mean = .57). Property SRO was the least over dispersed with a difference of .12 (mean = .312, variance = .439). The Poisson based negative binomial regression models will provide results similar to that found when constructing a just identified SEM model, and thus will have similar coefficients. To create a negative binomial regression analysis in Stata, the command nbreg will be used. The command is followed by the dependent or endogenous variables and the independent or exogenous variables.

Analyses

Chapter four will first detail the results of the bivariate analysis completed on the dataset. Correlations will be calculated to assess any bivariate relationships between endogenous, exogenous, and control variables. These analyses will be completed to understand the relationship between ethnicity and parental management, generation and parental management, parental management and self-control, and self-control and delinquency. The preliminary analysis will also include t-tests to examine mean differences in central and control variables across groups to see whether Mexican-American and non-Mexican-American adolescents are exposed to different parenting

styles, have different levels of self-control, commit more delinquency, have more delinquent peers, and are of different SES. This will also be completed with generational status.

After the preliminary analysis has been completed, multiple path analyses or structural equation models will be estimated. Structural equation modeling (SEM) will be used to examine complex relationships among latent and observed variables. There are various types of SEM. In the current research, none of the variables are hypothesized to have a reciprocal effect on one another, meaning it is a recursive model. The model is also just identified, which means that all paths between variables will be determined. These models will be separated into two parts.

In the first part of this analysis, two structural equation models will be completed. Each will detail the hypothesized relationships between parental measures, self-control, and self-report offending; differences between the models will simply be that one will use data from Mexican-American respondents, and the other for non-Mexican-American respondents. Comparisons between the direct and indirect effects of parental management on self-control and delinquency between the two groups will be made.

The second part of the analysis will include three additional path analyses. The models will be identical to those in the previous part, estimating the relationship between parental measures, self-control, and delinquency. What will differ are the characteristics of the respondents in each. The three models will include only data from Mexican-American respondents; however, each model will include a different generational status (as previously defined). Comparisons will be made regarding the differences between the

direct and indirect effects of parental management on self-control and delinquency between the groups.

As mentioned previously, there is a chance that the ADF Stata command will not control for the skewed dependent variable in the equation. In the case that the ADF command does not aid in obtaining results, Stata will stop the estimation processes and issue an error report message. If this occurs, the structural equation model will be abandoned. Instead of being estimated simultaneously, the relationship between endogenous and exogenous variables will be determined using regression models.

Fixed effects ordinary least squares (OLS) regression models, also known as least squares with dummy variables regression, will first estimate the relationship between parenting and self-control for the Mexican-American and non-Mexican-American segment of the sample (Table 9). Fixed effects negative binomial regression models will be estimated for the relationship between self-control and delinquency, parenting and delinquency, and the relationship of both self-control and parenting on delinquency.

Table 3.9. Fixed Effects OLS and Negative Binomial Regression Model Commands

Type of Analysis	Commands Used
Fixed Effects OLS	regress dependentvariable independentvariable(s) controlvariable(s) neighborhood variables
Fixed Effects Negative Binomial Regression	nbreg dependentvariable independentvariable(s) controlvariable(s) neighborhood variables

The second step of the analysis will also be broken into separate equations if the SEM will not converge. First-generation Mexican immigrants will first be examined to determine the effects of parenting on self-control and delinquency. As in the first part of

the analysis, a fixed effects OLS model will be created to understand the relationship between parenting and self-control. A fixed effects negative binomial model will then be estimated to examine the relationship between self-control and delinquency, parenting and delinquency, and self-control, parenting, and delinquency. Equations will be estimated for second-generation Mexican immigrants and the group that includes both third generation Mexican immigrants and non-immigrants.

These analyses will add to current self-control literature that focuses on the invariance tenet by including groups often overlooked (e.g. Mexican-Americans and different generations). The results will improve understanding of the effects of acculturation on parenting as well as how these affect self-control and offending in a group that constitutes a growing portion of the U.S. population.

CHAPTER IV

RESULTS

Chapter four will describe the analysis and results of the current study. The chapter will present results of univariate and bivariate analyses, including t-tests and correlations. This analysis will be presented in tables first by ethnicity and then by generational status. After presenting the preliminary analysis, an effort will be made to understand the relationship between parenting, self-control, and delinquency.

The relationship between parenting, self-control, and delinquency will be determined in two steps. First, a fixed effects ordinary least squares (OLS) regression models will be used to estimate the relationship between parenting and self-control. These models will be completed for the groups of both Mexican-American and non-Mexican-American respondents, as well as for each group of Mexican-American respondents by generational status. Fixed effects negative binomial regression models will be estimated for the relationship between self-control and delinquency, parenting and delinquency, and the relationship of both self-control and parenting on delinquency. As with the previous models, there will be multiple runs to include ethnicity and generational status.

In summary, the following chapter is presented in four parts. The chapter will (1) present correlations between the variables of interest and control variables, (2) present t-tests to demonstrate mean differences in variables between groups of individuals, (3) present fixed effects OLS models to demonstrate the relationship between parenting and self-control, and (4) present fixed effects negative binomial models to demonstrate the effects of parenting and self-control on delinquency.

Bivariate Relationships between Independent, Dependent, and Control Variables

To better understand the bivariate relationships between independent and dependent, and control variables, correlation matrices are presented on the following pages. Gottfredson and Hirschi propose that parenting should have a negative relationship with low self-control and with delinquent behavior. When examining the sample as a whole (i.e. not broken down by ethnic or generational status), parenting was determined to have a negative relationship with low self-control (see Table 1), with the strongest relationship between parenting and the inhibitory control subscale. This indicates that the more parents monitor and discipline their children, the greater their ability to control inhibitions. Also in support of the theory, parenting and delinquency are negatively correlated. This correlation indicates that the greater the parenting score (i.e. more warmth and supervision a child receives), the less likely the subject is to engage in criminal behavior. Table 1 also demonstrates that low self-control has a

Table 4.1. Offending, Parenting, Low Self-Control, and Control Variables: Correlations (n = 1664 – 1903)

	A	B	C	D	E	F	G	H	I	J	K	L
A. Offending	1											
B. Interpersonal	.928*	1										
C. Property	.778*	.488*	1									
D. Parenting	-.079*	-.067*	-.077*	1								
E. Warmth	-.076*	-.071*	-.058*	.804*	1							
F. Supervision	-.046	-.033	-.062*	.652*	.1635*	1						
G. Lack Hostility	-.014	-.014	-0.01	.468*	.126*	.212*	1					
H. Low self-control	.149*	.143*	.103*	-.143*	-.092*	-.102*	-.092*	1				
I. Inhibitory	.146*	.137*	.106*	-.167*	-.107*	-.120*	-.098*	.809*	1			
J. Decision	.106*	.093*	.085*	-.048*	-.030	-.037	-.052*	.769*	.443*	1		
K. Sensation	.099*	.112*	.046*	-.087*	-.059*	-.042	-.037	.576*	.423*	.286*	1	
L. Persistent	.064*	.059*	.048	-.082*	-.049*	-.078*	-.06*	.643*	.324*	.413*	.055*	1
Control Variables												
M. Sex	.085*	.089*	.044*	-.027	-.032	.006	-0.01	.094*	.084*	.064*	.052*	.057*
N. Age	.190*	.202*	.106*	-.129	-.091	-.168	-.010*	-.028	-.010	-.080*	-.001	.0227
O. Peer Delinquency	.508*	.495*	.361*	-.150*	-.104*	-.168*	-.046	.125*	.126*	.055*	.096*	.088*
Neighborhood Variables												
P. Low SES	.019	.033	-.009	-.041	-.040	.002	-.053	.013	-.004	.032	.018	.008
Q. Hispanic	-.051*	-.063*	-.019	-.021	-.002	-.030	-.018	-.056*	-.044	-.045*	-.067*	-.007

*p < .05   n = 1664 - 1903

positive relationship with offending, as proposed by the authors of the general theory of crime (i.e. having low self-control is indicative of offending)

Table 4.1. Continued

	M	**N**	**O**	**P**	**Q**
Control Variables					
M. Sex	1				
N. Age	-.041	1			
O. Peer Delinquency	.002*	.591*	1		
Neighborhood Variables					
P. Low SES	-.023	-.058*	-.024	1	
Q. Hispanic	-.021	.001	-.020	.136*	1
*p < .05					

The control variable, peer delinquency, has a consistently significant relationship with parenting, low self-control, and offending. A greater score on the parenting scale is indicative of having fewer delinquent peers. Low self-control is positively related to having delinquent peers. Having delinquent peers is also strongly indicative of a greater propensity to commit crime.

Bivariate Relationships by Ethnicity

Table 2 provides the bivariate relationships between independent, dependent, and control variables, as separated by ethnicity. First, in the Mexican-American sample, the relationship between parenting and offending is negative. This relationship does not exist in the non-Mexican-American population. According to Gottfredson and Hirschi this relationship is not as important as the relationship between parenting and self-control.

Table 4.2. Offending, Parenting, Low Self-Control, and Control Variables by Ethnicity: Correlations

	A	B	C	D	E	F	G	H	I	J	K	L
A. Offending	1	.891*	.730*	-.031	.012	-.091*	.020	.139*	.153*	.091*	.098*	.045
B. Interpersonal	.937*	1	.341*	-.029	.020	-.089*	-.001	.136*	.144*	.078	.104*	.052
C. Property	.795*	.533*	1	-.031	-.011	-.052	.025	.079*	.098*	.066	.037	.016
D. Parenting	-.112*	-.097*	-.106*	1	.759*	.660*	.466*	-.119*	-.102*	-.053	-.092*	-.074
E. Warmth	-.118*	-.116*	-.083	.834*	1	.120*	.032	-.040	-.051	.033	-.033	.018
F. Supervision	-.046	-.028	-.081*	.645*	.194*	1	.264	-.130*	-.073	-.090*	-.089*	-.110*
G. Lack Hostility	-.045	-.033	-.039	.470*	.199*	.161*	1	-.083*	-.069	-.068	-.021	-.074
H. Low self-control	.117*	.108*	.089*	-.186*	-.127*	-.135*	-.132*	1	.791*	.753*	.574*	.638*
I. Inhibitory	.117*	.107*	.092*	-.221*	-.141*	-.183	-.142*	.808*	1	.409*	.413*	.303*
J. Decision	.079*	.062*	.071*	-.066*	-.053	-.039	-.065*	.759*	.427*	1	.230*	.382*
K. Sensation	.067*	.080*	.026	-.104*	-.076*	-.052	-.073*	.538*	.393*	.261*	1	.087*
L. Persistent	.052	.042	.049	-.098	-.067*	-.080*	-.067*	.639*	.314*	.411*	.000	1
Control Variables												
M. Sex	.124*	.114*	.072	-.002	-.023	.010	.016	.058	.020	.044	.055	.045
N. Age	.212*	.211*	.128*	-.086*	-.086*	-.099*	.015	-.066	-.069	-.073	-.029	.002
O. Peer Delinquency	.049*	.470*	.309*	-.146*	-.081	-.173*	-.052	.024	.060	-.025	.017	.022
Neighborhood Variables												
P. Low SES	-.091*	-.052	-.103*	-.073	-.058	-.011	-.064	.017	-.037	.032	.042	.032
Q. Hispanic	-.032	-.056	.015	-.015	-.033	-.002	.043	.064	.035	.052	.046	.049

*p < .05

Under the diagonal are the Mexican-American Respondents   n = 548 - 644

Above the diagonal are the Non-Mexican-American Respondents   n = 1018 - 1229

Table 4.2. Continued

	M	N	O	P	Q
A. Offending	.072*	.180*	.511*	.084*	.005
B. Interpersonal	.083*	.196*	.499*	.090*	.004
C. Property	.032	.093*	.377*	.046	.002
D. Parenting	-.042	-.158*	-.160*	-.012	.008
E. Warmth	-.038	-.095*	-.117*	-.029	.040
F. Supervision	-.017	-.220*	-.185*	.029	.007
G. Lack Hostility	-.031	.003	-.051	-.035	-.076*
H. Low self-control	.116*	-.021	.152*	.061*	-.002
I. Inhibitory	.117*	.007	.140*	.045	.002
J. Decision	.076*	-.102*	.073*	.074*	.005
K. Sensation	.051	-.000	.113*	.046	-.043
L. Persistent	.062*	.034	.105*	.015	.020
Control Variables					
M. Sex	1	-.042	.002	.006	.036
N. Age	-.040	1	.591*	-.051	-.001
O. Peer Delinquency	.000	.589*	1	.095	-.005
Neighborhood Variables					
P. Low SES	-.076*	-.058	-.068	1	.056*
Q. Hispanic	-.069	.033	.019	.158*	1

*p < .05

Under the diagonal are the Mexican-American Respondents
n = 548 - 644

Above the diagonal are the Non-Mexican-American Respondents
n = 1018 - 1229

Parenting is negatively related to low self-control, which is positively related to offending in the Mexican-American sample. This indicates that parents of Mexican-American adolescents monitor and discipline their children, which instills a high level of self-control. For the non-Mexican-American sample, there is also a negative relationship between parenting and low self-control and a positive relationship between low self-control and offending. These results suggest that the theory may find support in the current research.

Age and peer delinquency are positively related to offending in both samples. Older subjects and those with delinquent peers are more likely to report having committed a crime in the past year. In the Mexican-American sample, adolescents living in a low SES neighborhood reported less delinquency; the non-Mexican-American sample reported crime more when living in a low SES area.

Bivariate Relationships by Generational Status

Tables 3 and 4 demonstrate the bivariate relationships between independent, dependent, and control variables by generational status. For first-generation Mexican immigrants, parenting is negatively related to delinquency. In the second and third-generation groups, this relationship does not exist. Parenting is negatively related to low self-control in the sample of first and second-generation Mexican immigrants. In the third-generation group, this relationship does not exist. Low self-control has a positive relationship with delinquency in the first-generation sample (i.e. the lower one's self-control the greater their likelihood of offending). In the second-generation, only the inhibitory control measure of self-control is significantly related to delinquency; there is not a significant relationship between these variables in the third generation sample.

For first-generation Mexican immigrants, offending, and parenting are negatively related to low SES neighborhoods. In the second-generation group, low self-control is positively correlated to neighborhood SES and Hispanic neighborhoods, indicating that those who live in low SES and/or Hispanic neighborhoods are more likely to have low

Table 4.3. Offending, Parenting, Low Self-Control, and Control Variables by Generation (First and Second): Correlations

	A	B	C	D	E	F	G	H	I	J	K	L
A. Offending	1	.889*	.749*	.003	.065	-.082	0.01	.068	.120*	.047	.071	-.053
B. Interpersonal	.871*	1	.362*	.003	.082	-.078	-.017	.078	.117*	.046	.076	-.030
C. Property	.706*	.268*	1	.007	.007	-.048	.020	.022	.077	.022	.013	-.053
D. Parenting	-.211*	-.224*	-.098	1	.752*	.655*	.458*	-.110*	-.097	-.049	-.047	-.084
E. Warmth	-.210*	-.220*	-.089	.769*	1	.095	0.022	-.012	-.034	.034	-.004	-.018
F. Supervision	-.123	-.165*	-.005	.679*	.176*	1	.231*	-.158*	-.106*	-.118*	-.064	-.121*
G. Lack Hostility	-.001	-.011	.016	.422*	-.017	.350*	1	-.082	-.062	-.078	.011	-.083
H. Low self-control	.279*	.202*	.235*	-.176*	-.177*	-.122	-.021	1	.784*	.738*	.526*	.592*
I. Inhibitory	.215*	.156	.182*	-.146	-.170*	-.018	-.031	.779*	1	.400*	.387*	.220*
J. Decision	.159	.085	.182*	-.072	-.097	-.085	.032	.752*	.380*	1	.148*	.333*
K. Sensation	.104	.088	.073	-.183*	-.138	-.135	-.034	.545*	.333*	.232*	1	.028
L. Persistent	.310*	.250*	.216*	-.098	-.076	-.126	-.046	.709*	.428*	.420*	.12	1
Control Variables												
M. Sex	.105	.054	.126	.059	.045	.066	.158	.088	-.037	.124	.085	.084
N. Age	.193*	.193*	.118	-.095	-.155	-.026	.092	-.038	-.099	-.066	.011	.057
O. Peer Delinquency	.424*	.414*	.218*	-.150	-.137	-.167	-.006	.115	.122	-.058	.037	.242*
Neighborhood Variables												
P. Low SES	-.169*	-.081	-.202*	-.187*	-.165*	-.055	-.076	-.074	-.157*	.084	-.077	-.041
Q. Hispanic	-.118	-.120	-.052	-.070	-.107	.004	.110	-.052	.030	-.012	.013	-.170*

*p < .05

First generation Mexican Immigrant Respondents   Second generation Mexican Immigrant Respondents
Below the diagonal n = 124 - 157   Above the diagonal n = 353 - 414

Table 4.3. Continued

	M	N	O	P	Q
A. Offending	.138*	.221*	.504*	-.030	.012
B. Interpersonal	.142*	.231*	.470*	.007	-.022
C. Property	.062	.116*	.351*	-.064	.052
D. Parenting	-.007	-.070	-.176*	-.054	-.015
E. Warmth	-.061	-.056	-.090	-.034	-.022
F. Supervision	.013	-.104*	-.183*	-.002	-.023
G. Lack Hostility	-.011*	-.042	-.102	-.061	.030
H. Low self-control	.060	-.113*	.013	.111*	.154*
I. Inhibitory	.084	-.066	.073	.035	.059
J. Decision	.001	-.107*	-.009	.057	.104*
K. Sensation	.019	-.074	.023	.135*	.108*
L. Persistent	.046	-.045	-.045	.098*	.151*
Control Variables					
M. Sex	1	-.086	-.021	-.044	-.034
N. Age	.031	1	.616*	-.025	.101*
O. Peer Delinquency	.008	.508	1	.003	.051
Neighborhood Variables					
P. Low SES	-.176*	-.105	-.187*	1	.169*
Q. Hispanic	-.150	-.028	-.020	.043	1

*p < .05

First generation Mexican Immigrant Respondents
Below the diagonal n = 124 - 157

Second generation Mexican Immigrant Respondents
Above the diagonal n = 353 - 414

self-control. In the third-generation, all measures of delinquency have significant

correlations with the peer delinquency scale.

Table 4.4. Offending, Parenting, Low Self-Control, and Control Variables by Generation (Third): Correlations

	A	B	C	D	E	F	G	H	I	J	K	L
A. Offending	1											
B. Interpersonal	.922*	1										
C. Property	.704*	.375*	1									
D. Parenting	.027	.044	-.068	1								
E. Warmth	.078	.075	.004	.768	1							
F. Supervision	-.121	-.067	-.192	.650*	.133	1						
G. Lack Hostility	.120	.096	.077	.616*	.214	.280*	1					
H. Low self-control	.170	.157	.116	-.131	-.006	-.029	-.217	1				
I. Inhibitory	.147	.139	.081	-.103	.011	-.009	-.178	.813*	1			
J. Decision	.106	.086	.106	-.106	-.061	.064	-.234	.768*	.367*	1		
K. Sensation	.170	.166	.124	-.176	-.015	-.150	-.165	.728*	.581*	.459*	1	
L. Persistent	.089	.082	.048	-.012	.052	-.016	-.075	.746*	.477*	.542*	.243*	1
Control Variables												
M. Sex	.129	.133	.046	-.05	.077	-.104	-.114	-.019	-.214	.098	.122	-.022
N. Age	.238*	.196	.225*	-.123	-.088	-.220	.164	.074	-.045	.089	.052	.154
O. Peer Delinquency	.520*	.536*	.242*	-.024	.054	-.159	.128	-.159	-.186	-.141	-.098	-.055
Neighborhood Variables												
P. Low SES	-.181	-.166	-.146	.089	.129	.072	-.068	-.027	-.023	.010	.015	-.085
Q. Hispanic	-.126	-.122	-.095	.076	.053	.107	-.015	-.102	-.053	-.064	-.11	-.095

* p < .05   n = 64 - 83

Table 4.4. Continued

	M	N	O	P	Q
Control Variables					
M. Sex	1				
N. Age	.019	1			
O. Peer Delinquency	.132	.609*	1		
Neighborhood Variables					
P. Low SES	-.076	-.149	-.194	1	
Q. Hispanic	-.078	-.191	-.09	.329*	1
* p < .05 n = 64 - 83					

T-tests of Variables of Interest

The correlations were completed to understand the relationships between independent, dependent, and control variables in the current study. Independent-samples t-tests were conducted to compare parenting, low self-control, and delinquency in Mexican and non-Mexican samples, as well as in Mexican samples of differing generations. Differences between ethnicities will be reported first, followed by differences between Mexican-Americans of differing generational groups.

Table 5 presents the t-tests comparing the mean differences in key variables between the groups of Mexican-American and non-Mexican-American respondents. First, while there are significant differences in parenting between the two groups, the mean scores are not in support of the hypothesis that those of Mexican ancestry have higher scores on the parenting scale. The non-Mexican-American (M = .848, SD = .111) respondents had a higher mean parenting score than the Mexican-American (M = .836, SD = .12) respondents. These results indicate that ethnicity does have an effect on

parenting. The results suggest, specifically, that non-Mexican-Americans have a greater score on the parenting scale.

There was a significant difference in the mean low self-control scores for Mexican-American (M = 2.43, SD = .679) and non-Mexican-American (M = 2.81, SD = .675) respondents. These results indicate that ethnicity has an effect on low self-control. Specifically, the results suggest Mexican-American respondents were more likely to have lower scores on the low self-control scale (i.e. had higher levels of self-control). Results suggest a significant difference between the Mexican-American and non-Mexican-American adolescents in offending. Mexican-Americans (M = .617, SD = 1.02) reported less offending than non-Mexican Americans (M = 1.02, SD = 1.68) in the previous year.

Before moving on to compare the generational groups of Mexican Americans from the sample, it should be pointed out that the results are only partially supportive of the research hypotheses. Parenting scores in the Mexican-American sample were lower than the non-Mexican-American group, but they still had higher self-control and lower levels of offending. It could be suggested that the parenting measures are best used among the population they were created for – in the case of this theory, a mostly non-immigrant and non-white population.

Looking next at groups of immigrants, the first t-tests completed compares first generation and non-first generation immigrant respondents (Table 6). Results of these t-tests mirrored those of the Mexican-American vs. non-Mexican-American groups. Non-first-generation Mexican immigrants have higher parenting scores (M = .820, SD = .123), lower self-control (M = 2.71, SD = .694), and higher self-reported offending (M = .923,

SD = 1.58) than first-generation Mexican immigrant respondents. Second-generation

Mexican respondents report significantly higher self-control (M = 2.39, SD = .658) and

lower self-reported offending (M = .651, SD = 1.23) than their non-second generation

counterparts. For this group of respondents, there was no significant difference in the

parenting scores. When comparing third-generation/non-immigrant Mexican respondents

to those who are not third generation or greater, there are no significant differences

between mean parenting scores, low self-control scores, and self-reported offending.

Table 4.5. T-test Results for the Effect of Ethnicity on Offending, Parenting, and Self-Control Variables

Mexican American *vs.* non-Mexican American				
		Mexican	**Non-Mexican**	
		mean (sd)	**mean (sd)**	**t-statistic**
Offending	**(n = 1778)**	.617 (1.21)	1.02 (1.68)	5.31*
Interpersonal	**(n = 1780)**	.370 (.88)	.677 (1.2)	5.58*
Property	**(n = 1903)**	.240 (.580)	.349 (.699)	3.39*
Parenting	**(n= 1689)**	.836 (.12)	.848 (.111)	2.07*
Warmth	**(n = 1802)**	.718 (.244)	.718 (.223)	0.057
Lack of Hostility	**(n = 1813)**	.914 (.260)	.939 (.192)	2.30*
Supervision	**(n = 1820)**	.885 (.124)	.908 (.105)	4.11*
Low S-C	**(n = 1848)**	2.43 (.679)	2.81 (.675)	11.3*
Inhibitory	**(n = 1865)**	2.22 (.891)	2.59 (.95)	8.06*
Decision	**(n = 1874)**	2.66 (1.06)	3.14 (.965)	9.79*
Sensation	**(n = 1875)**	2.69 (1.04)	3.17 (.985)	9.82*
Persistence	**(n = 1874)**	2.25 (.925)	2.48 (.956)	5.02 *

Table 4.6. T-test Results for the Effect of Generation on Offending, Parenting, and Self-Control Variables

		First Generation	non-First Generation		Second Generation	non-Second Generation	
Mexican-Americans by Generational Status							
		mean (sd)	mean (sd)	t-statistic	mean (sd)	mean (sd)	t-statistic
Offending	(n = 1778)	.429 (1.07)	.923 (1.58)	3.74*	.651 (1.23)	.948 (1.62)	3.35*
Interpersonal	(n = 1780)	.200 (.785)	.604 (1.13)	4.27*	.393 (.879)	.620 (1.16)	3.58*
Property	(n = 1903)	.217 (.536)	.320 (.672)	1.85	.251 (.602)	.329 (.678)	2.11*
Parenting	(n= 1689)	.820 (.123)	.846 (.114)	2.48*	.841 (.121)	.845 (.113)	0.563
Warmth	(n = 1802)	.682 (.252)	.721 (.226)	1.95	.727 (.248)	.715 (.225)	-0.873
Lack of Hostility	(n = 1813)	.919 (.264)	.931 (.214)	.640	.912 (.263)	.935 (.204)	1.86
Supervision	(n = 1820)	.878 (.123)	.902 (.111)	2.55*	.888 (.128)	.903 (.108)	2.46*
Low S-C	(n = 1848)	2.33 (.660)	2.71 (.694)	6.60*	2.39 (.658)	2.76 (.691)	9.38*
Inhibitory	(n = 1865)	2.09 (.815)	2.49 (.951)	5.06*	2.20 (.912)	2.53 (.943)	6.35*
Decision	(n = 1874)	2.49 (1.05)	3.02 (1.01	6.20*	2.63 (1.05)	3.07 (.993)	7.81*
Sensation	(n = 1875)	2.69 (1.01)	3.04 (1.02)	4.01*	2.58 (1.01)	3.13 (1.00)	9.81*
Persistence	(n = 1874)	2.15 (.900)	2.42 (.954)	3.41*	2.25 (.939)	2.44 (.952)	3.56*

Table 4.6. Continued

		Third Generation	non-Third Generation	
Mexican-Americans by Generational Status				
		mean (sd)	mean (sd)	t-statistic
Offending	**(n = 1778)**	.805 (1.32)	.885 (1.55)	.44
Interpersonal	**(n = 1780)**	.584 (1.01)	.569 (1.11)	-.114
Property	**(n = 1903)**	.231 (.551)	.315 (.667)	1.12
Parenting	**(n= 1689)**	.839 (.111)	.844 (.115)	.416
Warmth	**(n = 1802)**	.735 (.022)	.717 (.232)	-.673
Lack of Hostility	**(n = 1813)**	.913 (.244)	.931 (.217)	.718
Supervision	**(n = 1820)**	.886 (.103)	.901 (.113)	1.12
Low S-C	**(n = 1848)**	2.81 (.701)	2.67 (.699)	-1.77
Inhibitory	**(n = 1865)**	2.57 (.840)	2.48 (.951)	-1.1
Decision	**(n = 1874)**	3.16 (.925)	2.96 (1.02)	-1.68
Sensation	**(n = 1875)**	3.29 (1.03)	2.99 (1.02)	-2.50*
Persistence	**(n = 1874)**	2.41 (.890)	2.40 (.955)	-.164

Fixed Effects Ordinary Least Squares and Negative Binomial Regression

Models

The original plan for analysis was to complete a structural equation model on the variables of interest. Due to the inability to simultaneously control for the skewed nature of the dependent variable and the clustered nature of the data, the structural equation has been abandoned. Instead of being estimated simultaneously, the relationship between independent and dependent variables will be determined using regression models. Though the method of analysis has changed, it will still be completed in a series of steps.

The relationships between parenting, low self-control, and delinquency will be examined by first looking at these relationships by ethnicity, to be followed by an examination of these relationships for Mexican-American adolescents of different generations. A fixed effects ordinary least squares (OLS) regression model will estimate

the relationship between parenting and low self-control; a fixed effects negative binomial regression will be used to estimate the relationship between low self-control and delinquency and parenting and delinquency. This model is often used in criminal justice research due to the ability to handle event variables that are non-negative, discrete, and over dispersed, which is the case with offending.

Fixed Effects OLS Regression Models

The current research uses fixed effects OLS regression models to examine the relationship between parenting and low self-control. A fixed effects model essentially suppresses from a model variables that are time stable which, in this case, account for clustering – neighborhood clusters. It is expected that the relationship between parenting and low self-control will be negative, with a stronger relationship between parenting and low self-control the Mexican-American respondents and for first and second-generation Mexican immigrant respondents. Tables 7 and 8 provide the results of these models.

Table 7 presents the results from the OLS models predicting low self-control for Mexican-American and non-Mexican-American respondents. With the effects of neighborhood variables suppressed from the model, the relationship between parenting and low self-control was strongest in the group of non-Mexican-American respondents (b = -1.01*). The relationship between parenting and low self-control in the Mexican-American sample is still in support of the theory, greater parenting warmth leads to higher self-control, but is much weaker (b = -.468) and only approaches significance (.102). For the models that examine the relationship between parenting and low self-

Table 4.7. Results of Fixed Effects OLS Regression Analysis between Parenting and Low Self-control by Ethnicity

	Non-Mexican-American Respondents (n=764)				Mexican-American Respondents (n = 437)			
	b	SE	t	p	b	SE	t	p
Parenting	-1.01	.248	-4.06	< .001	-.468	.286	-1.64	.102
Sex	.149	.049	3.05	.002	.072	.067	1.07	.284
Age	-.064	.013	-4.93	<. 001	-.048	.016	-2.88	.004
Parent SES	.002	.001	1.75	.081	.007	.002	2.66	.008
Peer Delinquency	.332	.058	5.70	< .001	.097	.082	1.18	.239
Low SES Neighborhood	.050	.198	.250	.799	-.123	.137	-.900	.370
Hispanic Neighborhood	-.150	.250	-.600	.549	.299	.137	2.18	.030
	R^2	.174	F	1.83*	R^2	.196	F	1.56*

Table 4.8. Results of Fixed Effects OLS Regression Analysis between Parenting and Low Self-control by Generation

	First Generation Immigrant Respondents (n=91)				Second Generation Immigrant Respondents (n=293)				Third Generation and Non Immigrant Respondents (n=53)			
	b	SE	t	p	b	SE	t	p	b	SE	t	p
Parenting	-.302	.773	-.390	.697	-.308	.338	-.910	.363	.614	2.41	.250	.802
Sex	-.058	.165	-.350	.724	.093	.082	1.13	.261	.211	.324	.650	.522
Age	-.065	.045	-1.43	.160	-.037	.020	-1.81	.072	.097	.085	1.14	.266
Parent SES	-.010	.007	-1.37	.175	.009	.003	2.64	.009	-.003	.009	-.320	.754
Peer Delinquency	.117	.205	.570	.569	.078	.102	.770	.442	-.652	.386	-1.69	.106
Low SES Neighborhood	-.193	.361	-.530	.596	.006	.161	.040	.970	-.454	.573	-.790	.437
Hispanic Neighborhood	.643	.363	1.77	.083	.355	.163	2.17	.031	.482	.548	.880	.388
	R^2	.531	F	1.48	R^2	.243	F	1.45*	R^2	.366	F	.390

control for different generations of Mexican-American respondents, only the model for second-generation immigrant respondent is statistically significant. In this model however, the control models living in a Hispanic neighborhood (.355) and a parent's socioeconomic status (.009) have a significant relationship with self-control.

Fixed Effects Negative Binomial Models.

In the current research, offending is the dependent variable. The measure of offending was created by adding up the number of types of offenses the respondent reported to have committed in the previous twelve months. Due to the count nature of this variable, a fixed effects negative binomial regression was used to examine the relationship between it and parenting, low self-control, and control variables. The fixed effects suppressed the effects of neighborhood clusters on the models; the results of these analyses are presented in Tables 9, 10, and 11.

For the current analysis, multiple models were used to best understand the relationship between parenting, self-control, and offending. Model 1 provides the results of the regression of parenting and control variables on offending. There are no significant relationships between parenting and delinquency in any of the groups used in the current research.

Low self-control was regressed on offending in Model 2. Low self-control has a statistically significant relationship with delinquency in the group of Mexican-American respondents, as well as in the groups of first generation and third generation/non-immigrant Mexican-American respondents. The relationship between low self-control

and delinquency was strongest in the group of third-generation/non-immigrant respondents. The significant positive coefficient for low self-control (1.65*) indicates that, controlling for all other variables in the model, for every one unit increase in a respondent's low self-control, the rate ratio for offending would be expected to increase by a factor of 5 [$e^{1.65}$-1) x100]. It should be noted that the sample size used for the third generation/non-immigrant Mexican-American sample is very small (approximately 50), which may affect the results of these models. A fixed effects OLS model was estimated for these models, as well, with the same conclusions.

The effects were also notable for first generation immigrant respondents, and for the Mexican-American respondents when analyzed as a whole group. Given that all other variables are held constant in the model [$e^{.83}$-1) x100], if the low self-control score of a first generation immigrant respondent were to increase by one point, the rate ratio for offending would be expected to increase by a factor of 2.3. A significant positive relationship between low self-control and delinquency (b = .441*) indicates that for Mexican-American respondents, a one point increase in low self-control increases the rate ratio of engaging in delinquent behavior by a factor of 1.5 [$e^{.44}$-1) x100].

Model 3 includes both parenting and self-control as predictors of delinquency. In these models, self-control has a significant effect on delinquency, but parenting does not. The significant relationship exists in all Mexican-American respondent groups. The strongest relationship between low self-control and delinquency was found in the third-generation respondent group. If a respondent's low self-control scale were to increase by one point, the rate ratio for offending would be expected to increase by a factor of 5.5 (b = 1.71*) [$e^{.1.71}$-1) x100].

The relationship was weaker by more than half the group of first generation Mexican immigrant respondents (b = .882*). If a respondent's low self-control score were to increase by one point, the rate ratio for offending would be expected to increase by a factor of 2.4 [$e^{.882}$-1) x100]. Finally, the relationship between low self-control and delinquency was weakest for Mexican-American respondents (b = .485*) and the second-generation Mexican immigrant respondents (b = .298*). Respectively, a one point increase in low self-control increase the rate ratio of delinquency by a factor of 1.62 and 1.34, respectively.

In each model, with the exception of third generation/non-immigrant Mexican-American respondents, peer delinquency has a significant effect on whether one offends. The variable has a consistently strong relationship in all respondent groups. In each group, having delinquent peers had a stronger effect on whether one offends than parenting or low self-control; this finding suggests that self-control theory is missing important components of predicting crime by not taking one's peers into account.

The results of the negative binomial models suggest that there is a significant effect of sex on offending for two of the groups examined. In the groups of Mexican-American respondents and the group of second-generation immigrant respondents, being male had a significant effect on whether an adolescent offended. In the group of non-Mexican-American respondents, the neighborhood control variable, living in a Hispanic neighborhood, had a significant and positive effect on delinquency. This relationship was strongest in Model 3.

Table 4.9. Results of Fixed Effects Negative Binomial Regression Analysis between Parenting, Low Self-Control, and Delinquency by Ethnicity

	Mexican-American Respondents			Non-Mexican-American Respondents		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
	n = 428	n = 473	n = 417	n = 741	n = 807	n = 725
Parenting	.517 (.695)	-	.636 (.666)	-.693 (.541)	-	-.984 (.556)
Low Self-Control	-	.441 (.113)*	.485 (.118)*	-	.081 (.076)	.019 (.082)
Sex	.467 (.169)*	.469 (.159)*	.402 (.163)*	.198 (.109)	.263 (.102)*	.197 (.110)
Age	.005 (.043)	.007 (.040)	.026 (.041)	-.089 (.029)*	-.074 (.027)*	-.082 (.030)*
Parent SES	.004 (.005)	.001 (.005)	.001 (.005)	-.001 (.003)	-.001(.003)	-.001 (.003)
Peer Delinquency	1.73 (.191)*	1.64 (.176)*	1.61 (.181)*	1.41 (.121)*	1.29 (.105)*	1.37 (.122)*
Low SES neighborhood	-.198 (.409)	-.313 (.388)	-.188 (.388)	.447 (.468)	.192 (.394)	.521 (.468)
Hispanic neighborhood	.200 (.409)	.015 (.384)	.090 (.381)	1.11 (.485)*	1.12 (.431)*	1.25 (.489)*

Table 4.10. Results of Fixed Effects Negative Binomial Regression Analysis between Parenting, Low Self-Control, and Delinquency by Generation

	First Generation Mexican Immigrant Respondents			Second Generation Mexican Immigrant Respondents		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
	n = 89	n = 109	n = 88	n = 287	n = 310	n = 280
Parenting	-4.36 (2.52)	-	-3.47 (2.28)	1.51 (.808)	-	1.42 (.799)
Low Self-Control	-	.839 (.324)*	.882 (.452)*	-	.233 (.142)	.298 (.142)*
Sex	.686 (.594)	1.10 (.461)*	.809 (.548)	.483 (.189)*	.450 (.192)*	.426 (.189)*
Age	.007 (.189)	-.084 (.119)	.018 (.176)	.012 (.048)	-.016 (.049)	.022 (.048)
Parent SES	.001 (.023)	-.004 (.018)	.016 (.021)	.005 (.008)	.001 (.008)	.002 (.008)
Peer Delinquency	1.64 (.684)*	2.16 (.489)*	1.49 (.632)*	1.77 (.237)*	1.78 (.244)*	1.70 (.233)*
Low SES neighborhood	-.511 (1.61)	-.456 (.574)	.165 (1.38)	.089 (.437)	.103 (.463)	.090 (.437)
Hispanic neighborhood	1.42 (1.30)	.067 (.660)	.466 (1.03)	-.062 (.443)	-.198 (.449)	-.097 (.433)

Table 4.10. Continued

	Third Generation and Non Immigrant Respondents		
	Model 1	Model 2	Model 3
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
	n = 52*	n = 54*	n = 49*
Parenting	-.931 (7.32)	-	3.59 (10.2)
Low Self-Control	-	1.65 (.851)*	1.71 (.905)*
Sex	1.36 (.673)*	1.26 (.663)*	1.21 (.671)
Age	.490 (.316)	.357 (.205)	.479 (.436)
Parent SES	.012 (.015)	.007 (.015)	.007 (.016)
Peer Delinquency	.401 (.768)	1.87 (1.09)	2.04 (1.19)
Low SES neighborhood	.337 (1.26)	.444 (1.32)	.313 (1.34)
Hispanic neighborhood	1.55 (.934)	1.55 (.921)	1.67 (1.05)

* It should be noted that these models are based on a very small number of cases (~50 cases).
Fixed effects OLS Regression models were estimated in addition to the fixed effects negative binomial models

CHAPTER V

CONCLUSION

This chapter will first present a brief review of self-control theory, including both an explanation of the theory as presented by Gottfredson and Hirschi (1990) as well as some of the support it has garnered since its inception. Next, the chapter will cover the methods used in the analyses. This will be followed by the results of the analyses and their implications. A discussion of the study's limitations and suggestions for future research will conclude the chapter.

The purpose of the current study is twofold. First, the study was intended to expand the limited research on Mexican-American adolescents by testing self-control theory on a sample of this population. Second, the study was to expand the research on generational status within the Mexican-American population. These groups were utilized to examine the invariance tenet of Gottfredson and Hirschi's (1990) theory. Ten hypotheses were tested to determine whether ethnicity or generational status have influence on the relationship between parenting, self-control, and delinquent behavior.

This study was completed to address the gaps in research on self-control theory as well as in research on Mexican-American crime. Previous research has examined self-

control theory using a variety of demographics, including but not limited to gender, race, ethnicity, and level of education. There is limited research on self-control using the Mexican-American population, and none to date using generational status. Beyond adding to the empirical research on the current theory used, using these groups is important for the purpose of guiding criminal justice decision-making.

It is predicted that in the next 30 years, the Hispanic population in the U.S. will increase to a proportion of 25 percent of the population. More than half of the Hispanic population is made up of individuals of Mexican ancestry. Many Mexican-Americans are recent immigrants, with as many as 30 percent of the U.S. immigrant population identifying Mexico as their country of ancestry. Due to this influx of individuals emigrating from Mexico, many individuals are of first or second-generation status. In order to best understand why this population offends and how best to address their offending, research needs to be completed.

Self-control Theory

Gottfredson and Hirschi created self-control theory in 1990 as an evolution of social bond theory. Both theories belong to a family of theories that explain crime from a control perspective. This perspective suggests that humans are inherently hedonistic and instead of asking why people choose to commit crime, seeks to explain why people do not commit crime. Theories that are included in this perspective assume delinquency is the result of a failure of some sort of social control (i.e. family, school, friends, and oneself).

Hirschi presented social bond theory in *Causes of Delinquency* (1969) twenty years prior to the proposed self-control theory. In this book, Hirschi proposed that psychological and social elements (i.e. attachment, commitment, belief, and involvement) lead to variation in morals, which in turn leads to variation in offending. Each of the theory's elements was considered to be of equal importance, though other criminologists have suggested that attachment is key (see: Curran & Renzetti, 1994, Vold & Bernard, 1986). Attachment reappeared as a theme in *A General Theory of Crime.*

A General Theory of Crime (1990) is the result of a combined effort by Gottfredson and Hirschi's to contribute to the control perspective. The premise of this theory is that *all* individuals are equally motivated to pursue their own self-interests when given the opportunity (Nakhaie, Silverman, & Lagrange, 2000), but those with low self-control have a greater criminal propensity. Attachment, specifically to one's family is the source of self-control. Gottfredson and Hirschi (1990) describe self-control as a time-stable (i.e. does not vary over one's life) personality trait identifiable by the following characteristics: being impulsive, insensitive, non-verbal, and shortsighted, as well as favoring physical activity over more academic or thoughtful tasks (Gottfredson & Hirschi, 1990). The authors propose that low self-control is the result of "ineffective or incomplete socialization", (Gottfredson & Hirschi, 1990, p. 96) with parental supervision and discipline as the source of socialization.

The theory is considered a general theory of crime, because the authors argue it is universal. Extensive research has been conducted to explore the generality of the theory. Self-control theory has been applied to those of different races (Vazsonyi & Flannery, 2004), ethnicity (Kaplan, Nápoles-Springer, Stewart, & Perez-Stable, 2001; Morris,

Wood, & Dunaway, 2007; Nakhaie et al., 2000), gender (Burton, Cullen, Evans, Alarid, & Dunaway, 1998; Gibson, Ward, Wright, Beaver, & Delisi, 2010), and country (Cheung & Cheung, 2008; Vazsonyi, Pickering, Junger, & Hessing, 2001). Most findings suggest that the self-control theory does have the capacity to be applied universally.

Until quite recently, what had been missing from the discussion is the inclusion of individuals who identify as or who are identified in official data as Hispanic. Vera and Moon (2013) used a sample of mostly Hispanic adolescents to examine self-control theory, with partially supportive results. The findings of this research suggest that there is not a relationship between parenting and low self-control in a majority Hispanic population. Miller et al. (2009) and Alvarez-Rivera and Fox (2010) utilized a sample of Puerto Rican adolescents to examine self-control theory and found mixed results. Miller and colleagues (2009) determined that maternal parenting was an important predictor of low self-control and offending but paternal parenting was not. Alvarez-Rivera and Fox (2010) found that low self-control is a predictor of delinquency, but that parenting, school, and friends have a greater influence.

Methods

The current study sought to answer the questions: (1) is self-control useful in predicting delinquency in a sample of Mexican-American adolescents the same it would in a non-Mexican-American sample of adolescents? and (2) assuming the theory explains crime in a Mexican-American sample, does it continue to do so when divided into groups by generational status? The hypotheses associated with each question reflect the basic

causal path of the self-control theory. The paths include (1) a negative relationship between close parenting and low self-control and (2) a positive relationship between low self-control and offending or the propensity to offend. A negative relationship is hypothesized to exist between parenting and offending. The relationship between parenting and offending should be mediated by self-control.

Specific to the first research question, the relationships between parenting, low self-control, and delinquency should be similar in all groups studied. However, due to the Hispanic culture placing a greater emphasis on family bond, the current hypothesis includes a prediction that Mexican-American adolescents will have higher self-control and report less offending. The second research question includes a hypothesis that less acculturated Mexican-American adolescents will have higher levels of self-control and report less offending than their more acculturated counterparts.

Chapter Three contains a through discussion of the methodology of this study. A brief summary of the methodology will be included here. To address the research hypotheses, data from the Project on Human Development in Chicago Neighborhoods: Longitudinal Cohort Study (PHDCN: LCS), an interdisciplinary study of the effects of family, school, and environment on adolescent development (Earls, 2002) were utilized. The data are ideal for this research due to the large Hispanic immigrant population in Chicago, the many data points to measure the independent and dependent variables, and because it has already been found useful in self-control literature (Morenoff & Astor, 2006; Sampson, Morenoff, & Raudenbush, 2005).

Of the three waves of data collected for the PHDCN, the current research relies on Waves 1 and Wave 2 data from cohorts of 9, 12, and 15 year olds. These age groups

were used because they have reached the age at which Gottfredson and Hirschi (1990) suggest that self-control should be developed and because these age groups at the second wave are two to three years older and are at high-risk for offending (Miller, 2012). To address the missing data points in the current research, a comparison was done between the respondents in the sample and the respondents lost due to attrition. Due to a lack of extreme differences between the groups, the data have been treated as if they are missing at random and case-wise deletion was used to drop cases with missing data.

Dependent Variables

The current study includes two dependent variables: low self-control and self-reported offending. Gottfredson and Hirschi suggest that parenting directly influences one's self-control. In this study it was measured with a scale of 16 behavioral items from a survey designed to gather information on a child's personality trait based on responses from their primary caretaker. Previous research using this dataset have used a total of 17 items, but due to the 15 year old cohort not having any information for the item measuring *will try anything once*, this measure was dropped. The measure of low self-control was split into four subscales based on the personality traits Gottfredson and Hirschi (1990) propose those who have low self-control possess. These include inhibition control, decision time, sensation-seeking behavior, and persistence. These subscales were used in preliminary analyses but were not explored in the regression analyses.

The second dependent variable used in the current research is a measure of offending, which is said to be a potential result of possessing low self-control. Self-

reported offending was included in the PHDCN, a measure of offending that is often criticized in criminological research. There are issues with the potential falsification of answers, the inability of a full range of delinquent activities to be included, and a potential for items overlapping (Elliot & Ageton, 1980). Another weakness that cannot be overlooked is the potential for those who have recently immigrated to the country underreporting crime for fear of legal consequences.

Self-reported offending was collected in Wave 2 of the PHDCN. Respondents were asked to self-report whether they had participated in a range of behaviors in the previous 12 months. A total of 19 law-violating behaviors were used to measure offending in the current research. Due to the skewed nature of a variable such as offending, a count variable was created, which was a sum of all items, with higher values denoting greater levels of involvement in crime.

Independent Variables

Two independent variables were used in the current research: parenting and low self-control. Measures of parenting were collected at Wave 1 using an in-home observation of the environment in which children were raised. Items used include the interaction between the primary caretaker and the subject while the observer was present, as well as rules that the caretaker has for the child regarding free time and use of drugs and alcohol. Parenting measures were split into three subscales based on parenting factors that Gottfredson and Hirschi (1990) suggest are important to instill self-control in their children: warmth, lack of hostility, and supervision and monitoring. As with the

offending and low self-control subscales, these are used in preliminary analyses, but are not included in the regression in the current research.

Analysis

Chapter Four presented the analyses completed in the current research. Univariate and bivariate analyses, including correlations and t-tests, were completed first to understand the relationship between key variables. Fixed effects ordinary least squares and fixed effects negative binomial regression were then used to determine the causal relationship between parenting, self-control, and delinquency.

Bivariate Correlates

Correlations were completed to understand the relationship between independent, dependent, and control variables. When the sample was examined as a whole, support was found for the self-control theory. Parenting demonstrated a negative relationship with low self-control and offending. Low self-control was found to have a positive relationship with offending. The same relationships exist when the study sample is split up into Mexican-American and non-Mexican-American groups.

The theory starts to lose support when separating the Mexican-American sample into groups by generational status. Parenting is negatively related to low self-control for respondents who fall into the first and second-generation, but not for those of third

generation or higher. For first-generation Mexican immigrants, low self-control has a positive relationship with offending; the same is not found for those of later generations.

T-Test Results

T-tests were used to determine whether there were differences in the means of the independent and dependent variables between ethnic groups and then between the Mexican-Americans of different generations. Results of the t-test for parenting comparing Mexican-American respondents and non-Mexican-American respondents yielded results counter to the hypothesis of this study; non-Mexican respondents had a higher mean parenting score. The mean differences for low self-control and for offending supported the study's hypothesis, with Mexican-American respondents having higher levels of self-control and lower levels of offending.

Comparing first-generation Mexican immigrant respondents to those who are not first-generation yielded similar results. Those identified as first-generation had lower parenting scores, but higher self-control and less offending than their counterparts. Finally, groups of second and third-generation Mexican immigrant respondents yielded comparable results, but measures started to lose statistical significance. In the t-tests for those of second-generation status, parenting measures were not significant; none of the measures were significantly different when comparing means of third-generation/non-immigrants and their counterparts.

Fixed Effects Ordinary Least Squares Models

Fixed effects OLS regression models were used to determine the relationship between parenting and low self-control. Gottfredson and Hirschi (1990) propose that close monitoring and parental discipline lead to higher self-control regardless of demographic. The current study operationalizes parenting as a combination of warmth, supervision, and lack of hostility. The low self-control scale used in the current study is composed of items that measure an adolescent's decision time, inhibition control, persistence, and risk-taking behaviors.

These models provide mixed results for the theory's suggestion that parenting levels influence one's level of self-control. For the sample of non-Mexican-American adolescents, higher parenting scores are indicative of higher self-control. In the Mexican-American sample, parenting did not have a significant relationship with low self-control. When the Mexican-American sample is split into groups by generation (e.g. first, second, third or greater), the relationship between parenting and low self-control remains insignificant. These results imply the parenting and self-control relationship may not apply in all ethnic groups.

Fixed Effects Negative Binomial Regression Models

Due to the dependent variable self-reported offending being skewed, fixed effects negative binomial regression was used to examine the relationship between parenting and offending and low self-control, control and offending. These results also provided little support for self-control theory. The analysis completed on non-Mexican-American

respondents determined that there was a relationship between parenting and self-reported offending in the expected direction – greater scores on the parenting scale are associated with less offending. This relationship disappears in the sample of Mexican-American adolescents and those of the first and second generation. A significant relationship reappears in the sample of third-generation/non-immigrant Mexican-Americans.

The relationship between low self-control and self-reported offending also has mixed results. In the Mexican-American and third-generation Mexican/non-immigrant Mexican-American samples, self-control had a significant effect on delinquency. The relationship was not found for any of the other groups. In each of the groups examined, an association with delinquent peers has a greater relationship with offending than any other variable.

Discussion

This study tested Gottfredson and Hirschi's self-control theory on a Mexican-American population, using the group as a whole and broken up into three levels of generational status. Chapter Four provided analyses on the relationships between parenting, self-control, and offending, while controlling for neighborhood effects. The results of the regression models used to understand these relationships were not supportive of the invariance tenet of the theory. In the discussion section, the limitations of the current research will be discussed first. The theoretical implications of the results are discussed next. Suggestions for future research are covered throughout, in an effort to provide better guidelines in a replication of this study.

Limitations

    This dissertation has several weaknesses that should be addressed. The first weakness is the way in which the missing data were treated. Cases were lost in this research due to missing data points, especially those who did not participate in the self-reported offending questionnaire of Wave 2. Should this study be replicated, there are methods to ensure a larger final study sample. Instead of dropping all cases without complete data, a type of mean substitution or multiple imputation to fill missing data points may be used. Missing data issues may also be solved by using a completely different data set, ensuring that it remains rich in the demographic population to be addressed (i.e. Mexican-American adolescents, different generations).

    There are two weaknesses in the current research that may be due to the way in which parenting is measured. First, monitoring, warmth, supervision, and lack of hostility are used to measure parenting in this study. While monitoring is key to parenting according to Gottfredson and Hirschi (1990), the authors suggest that discipline and attachment are also important; those measures were not included. It may be that some of the weaknesses found in the relationship between parenting, self-control, and offending can be explained by this oversight. The measures of parenting may also be inadequate when examining individuals who are of a different culture than European American. Those who identify as Mexican-American, especially those of the first of second-generation, may have closer bond to their family, but standards of warmth, discipline, and hostility may be different for these groups.

If a similar study were to be completed, these issues could not be solved with using the current dataset. The PHDCN does not have information on the level of attachment or discipline a child receives, nor does it include parenting measures that had been tested on specific cultures. A new dataset would need to be collected after first conducting a pilot survey to understand what measures of family attachment, supervision, and discipline are important in the Mexican-American culture.

Another weakness associated with parenting may be not including measures of family structure may have been detrimental to the study as well. While Gottfredson and Hirschi (1990) propose that family structure does not have a direct effect on self-control, it may have an affect on the type of parenting one receives. Including items such as the number of parents in the home, the number of children in the home, whether there is other family present, etc. might shed better light on the level of warmth and supervision one receives. This could be completed without collecting new data, as the PHDCN includes statistics on the number of siblings, number of family members in the home, and other measures of family structure.

The measurement of low self-control is also a weakness of the current research. The item *will try anything once* which is often used in self-control research, had more than 500 cases missing. Due to this large number of missing variables, the item was not included in the measure of low self-control. It may be that if this measure had been included in the model, the level of reliability may be better able to predict the propensity to crime.

The manner in which delinquency was measured is also problematic. Self-reported offending is measured with a count variable of how many types of crimes the individual committed in the previous year. This measure is skewed, which led to the necessity of using a negative binomial model to estimate the effects of parenting and self-control. This model may not have been a sufficient. Future research may choose a different model to estimate the effectiveness of self-control theory. Much research suggests that when looking at complex datasets, which include different variable levels, such as community, family, and personal levels in the PHDCN, a hierarchical linear model should be used.

Finally, the way that assimilation was measured in this study could have negatively affected the results. Generational status was used to measure assimilation, a measure that has been used in past assimilation research, but is losing support for being too weak. There may be first generation adolescents that are more assimilated to the U.S. than later generation adolescents due to factors including where they live and the identity of their family. Whether the adolescents speak English or Spanish, whether their family watches mostly Spanish television channels, and other variables that were included in the PHDCN might have been combined with generational status to create a better to measure assimilation.

Theoretical Implications

The goal of the current research was to add support for Gottfredson and Hirschi's self-control theory (1990), but did not find evidence to do so. The results suggest that there are many weaknesses with self-control theory when applying it to a Mexican-

American sample. The first of these weaknesses is the suggestion that the theory can be applied universally. It may be that Gottfredson and Hirschi's (1990) theory can only explain crime in a large and diverse population and not each group that makes up the larger and more diverse population. In social and behavioral sciences, this is referred to as the ecological fallacy. The current study did find the theory did well at explaining the incidence of crime when applied to all respondents, but did not do well to explain criminal propensity when split into groups of differing ethnicity or generation.

Another potential weakness of this theory is its fatalistic nature. It may be that self-control theory is partially effective in explaining delinquency, but that people are more dynamic that Gottfredson and Hirschi (1990) suggest. The results of the current research suggest that juvenile offending was influenced more by peers and less by low self-control. Higgins et al. (2007) found similar results in a study on self-control and sports fan binge drinking. Their research suggested that peer delinquency leaves the effect of self-control on delinquency insignificant. The results of these studies indicate that, while self-control may have some effect on whether one will offend, there are other forces that also influence offending. Other theories, such as age graded social bond theory and differential association theory take peer delinquency into account and appear to do well at predicting criminal behavior.

Sampson and Laub (1993) present age-graded social bond theory in *Crime in the Making*. Similar in nature to self-control theory, family plays an important role in controlling one's propensity to crime; however, school and peers are suggested to have similar levels of influence. The age graded social bond theory provides for individuals to be more dynamic by not suggesting there is a characteristic or trait individuals possess

throughout their lives. The propensity to offend can change based on the interaction between an individual and their environment.

Sutherland's theory of differential association is also invoked by the results that suggest a powerful influence of peer delinquency on criminal behavior. Differential association theory proposes that individuals who engage in delinquency learn how to do so from the people they surround themselves with. The more pro-social attitudes one's peers possess, the less likely one is to be delinquent; the more anti-social attitudes one's peers possess, the more likely one is to be delinquent. The current study found that there is a stronger significant and positive relationship between having delinquent peers and offending than having high scores on the parenting scale and having lower scores on the low self-control scale. This suggests that the values of one's peers are more important that those of one's family.

The results also suggest that there are issues with the assumption that parenting has a greater influence on the offending in Mexican-American group than in the group made up of other ethnicities. It is hypothesized in the current research that Mexican-American respondents will report less offending than their non-Mexican counterparts due to a greater level of attachment to parents and supervision that accompanies this attachment. This difference in offending, however, does not appear to be due to differences in parenting measures as they are currently operationalized. As mentioned in the limitations section of this chapter, this may have been due to the way in which parenting was measured. It may also be that there are other things that affect offending in Mexican-American populations.

Conclusion

This study adds to the numerous studies completed to examine the invariance tenet of the self-control theory. While much of the previous research supports the invariance of the self-control theory (Burton, Cullen, Evans, Alarid, & Dunaway, 1998; Cheung & Cheung, 2008; Gibson, Ward, Wright, Beaver, & Delisi, 2010; Kaplan, Nápoles-Springer, Stewart, & Perez-Stable, 2001; Morris, Wood, & Dunaway, 2007; Nakhaie et al., 2000; Vazsonyi & Flannery, 2004; Vazsonyi, Pickering, Junger, & Hessing, 2001), the results of the current research did not provide any additional support. Despite these findings, research examining the theory and the groups focused on in the current study should continue.

Through rich in measures necessary for this dissertation, the PHDCN may not have enough measures on ethnicity and generational status to properly complete this research. Future research may benefit from using a different sample or different measures than used in the current research. It would be imperative to ensure the sample has a large portion of Mexican-American individuals, as well as measures of cultural importance.

Based on the negative results for self-control theory and the impact peer delinquency seems to have on delinquency, it may also be of benefit to conduct research comparing differential association, self-control theory, and age-graded social bond theory to provide a better understanding of what works best to predict delinquency. Gottfredson and Hirschi (1990) may have the base of a solid theory, but could have been too fatalistic

with the assumption that people do not change throughout their lives. A modified version

of the theory including the ability to change may be better applied to all demographics.
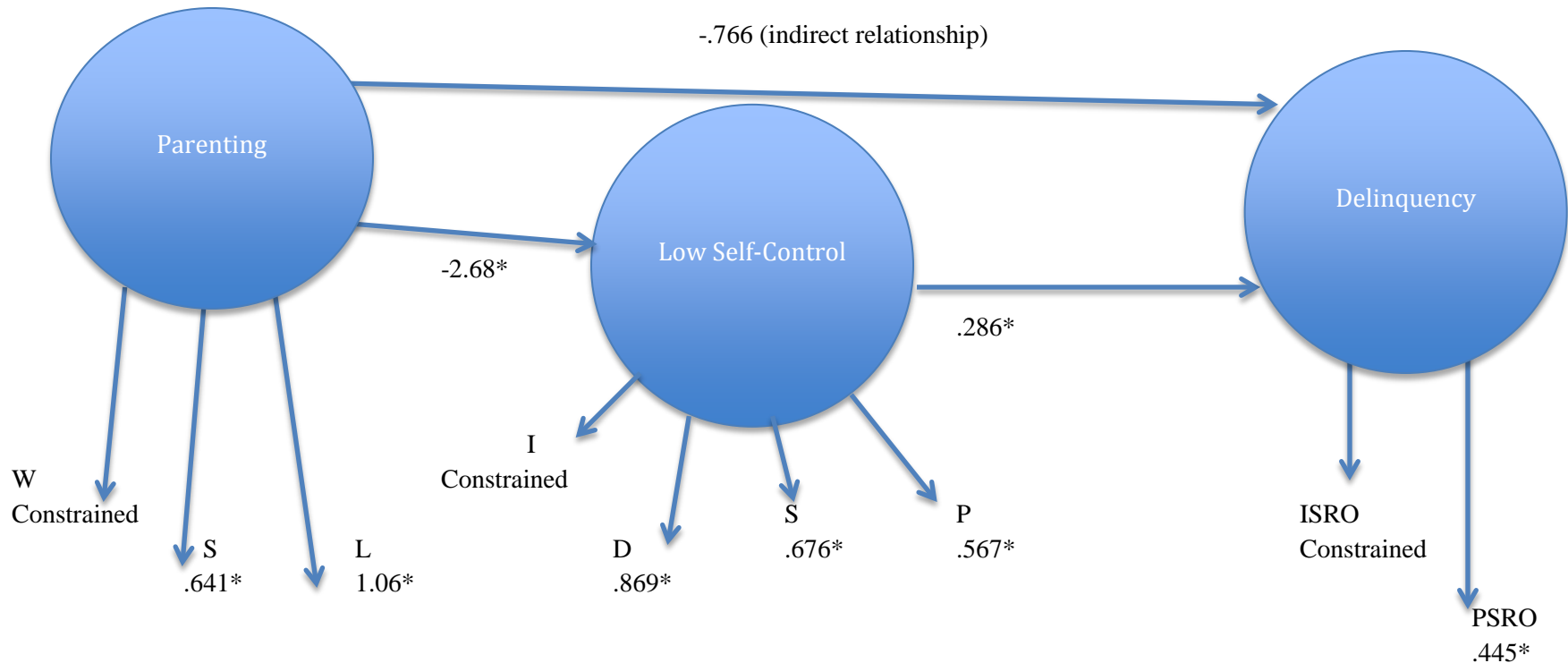
APPENDIX

STRUCTURAL EQUATIONAL MODELS/PATH ANALYSES

For the current research, the plan for analysis was to create structural equation models (SEM), or path analyses, using parenting, low self-control, and delinquency variable to examine the self-control theory. As mentioned in chapter 3, when running these analyses, the skewed dependent variable and the clustered nature of this variable must be addressed. However, when both were controlled for in the SEM, the statistical program used produced an error report. This means that only the skewedness of the independent variable or the clustered nature of the dataset can be taken into account when running SEM's.

Despite these shortcomings, the models were attempted. First the entire sample was analyzed using SEM without taking into account the skewedness of the dependent variable (A). The model suggests that as the score on the parenting scale increases, ones score on the low self-control scale decreases. Also suggested by the results of the model is that as ones low self-control score increases, the count of reported delinquency increases. Additional analysis determined that parenting has a negative and indirect relationship with count delinquency. Very few model fit statistics are available when controlling for clustered variables. Of the two that are, the SRMR indicates the model is a good fit for the variables (less than .08).
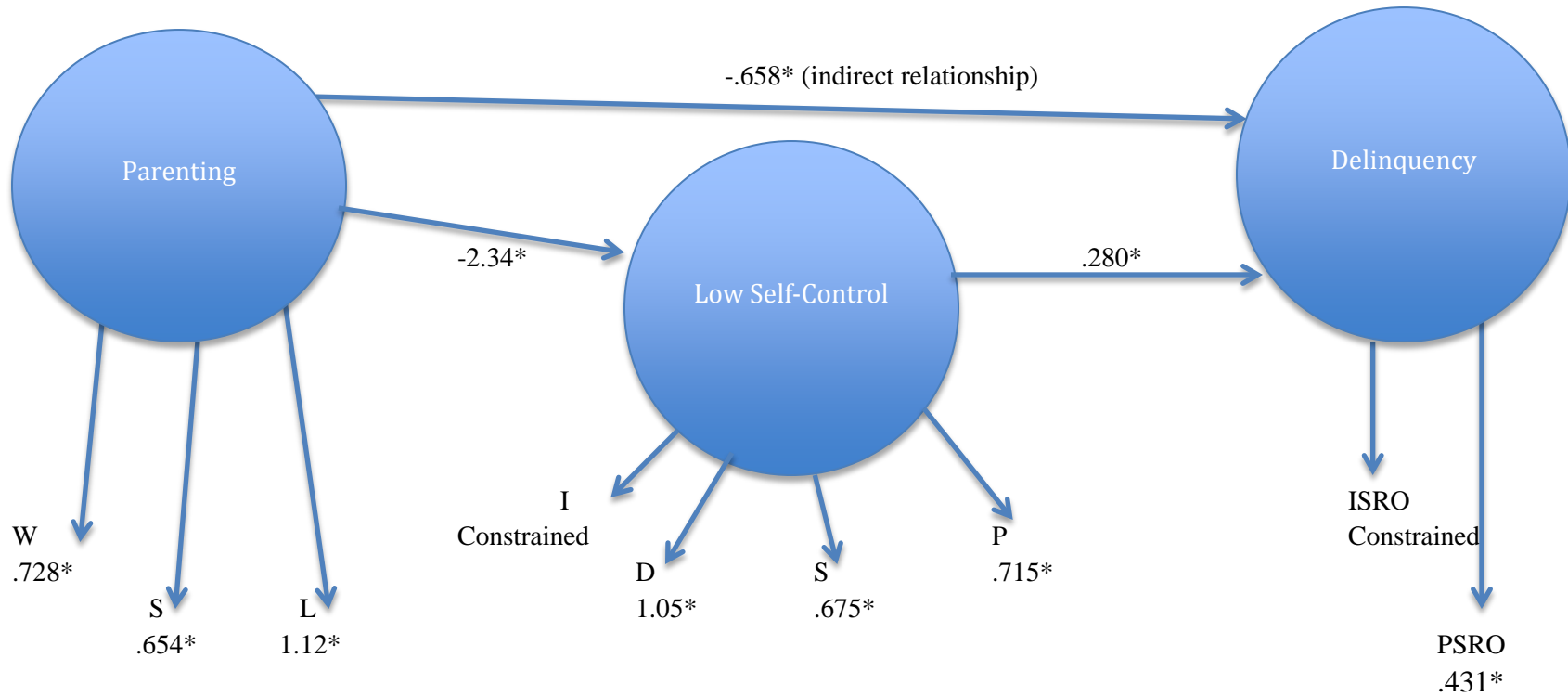
121

The entire sample was then analyzed using SEM without taking into account the

clustered nature of the data (B). The relationships between parenting and low self-control

and between low self-control and self-reported delinquency were significant and similar

to the relationships in the previously ran model. The chi-squared value associated with

this model is 178.86 and is found to be significant (p<. 001). The indirect relationship

between parenting and delinquency is significant and negative. When not controlling for

the clustered nature of the data, the goodness of fit statistics were numerous. The

RMSEA = .063; the CFI = .788; the SRMR = .054 (which suggests that the model is a

good fit for the variables); and CD = .36.

A: Structural Equation Model using the entire sample and controlling for the clustered data

-.766 (indirect relationship)

Parenting

Low Self-Control

Delinquency

-2.68*

.286*

W
Constrained

S
.641*

L
1.06*

I
Constrained

D
.869*

S
.676*

P
.567*

ISRO
Constrained

PSRO
.445*

Goodness of Fit Indices
SRMR = .037
CD = .395
(n=1528)

B: Structural Equation Model using the entire sample and controlling for the skewed dependent variable

-.658* (indirect relationship)

Parenting

Delinquency

-2.34*

Low Self-Control

.280*

W
.728*

S
.654*

L
1.12*

I
Constrained

D
1.05*

S
.675*

P
.715*

ISRO
Constrained

PSRO
.431*

Goodness of Fit Indices (n = 1528)
Chi Sq = 178.86 *
RMSEA = .063   SRMR= .054
CFI = .788   CD = .36

REFERENCES

Akins, S., Mosher, C., Smith, C.L. & Gauthier, J.F. (2008). The effect of acculturation on patterns of Hispanic substance use in Washington State." *Journal of Drug Issues,* 38 (1): 103-118.

Alvarez-Rivera, L.L. & Fox, K.A. (2010). Institutional attachments and self-control: Understanding deviance among Hispanic adolescents. *Journal of Criminal Justice,* 38: 666-674.

Antonaccio, O. & Tittle, C.R. (2008). Morality, self-control, and crime. *Criminology,* 46 (2): 479-510.

Arneklev, B.J., Cochran, J.K., & Gainey, R.R. (1998). Testing Gottfredson and Hirschi's "low self-control" stability hypothesis: An exploratory study. *American Journal of Criminal Justice,* 23 (1): 107-127.

Arneklev, B.J., Grasmick, H.G., & Bursik, Jr., R.J. (1999). Evaluating the dimensionality and invariance of "low self-control." *Journal of Quantitative Criminology*, 15 (3): 307-331.

Arneklev, B.J., Grasmick, H.G., Tittle, C.R., & Bursik, Jr., R.J. (1993). Low self-control and imprudent behavior. *Journal of Quantitative Criminology*, 9 (3): 225-247.

Bachman, J.M., Wallace, M.A., O'Malley, P.M, Johnston, L.D., Kurth, C.L., & Neighbors, H.W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American High School Seniors, 1976-89. *American Journal of Public Health,* 81 (3): 372-7.

Baker, J.O. (2010). The expression of low self-control as problematic drinking in adolescents: An integrated control measure. *Journal of Criminal Justice,* 38: 237-44.

Barlow, Hugh D. (1991). Review essay. Explaining crimes and analogous acts, or the unrestrained will grab at pleasure whenever they can. *Journal of Criminal Law and Criminology*, 82: 229-242.

Baron, S.W. (2003). Self-control, social consequences, and criminal behavior: Street youth and the general theory of crime. *Journal of Research in Crime and Delinquency,* 40: 403-25.

Barrera, M. Jr., Biglan, A., Ary, D., & Li, F. (2001). Replication of a problem behavior model with American Indian, Hispanic, and Caucasian youth. *Journal of Early Adolescence,* 21 (2): 133-57.

Beck, K.H., Boyle, J.R., & Boeckeloo, B.O. (2004). Parental monitoring and adolescent drinking: Results of a 12-month follow up. *American Journal of Health Behavior*, 28 (3): 272-9.

Benda, B. (2005). The robustness of self-control in relation to form of delinquency. *Youth and Society,* 36 (4): 418-44.

Berry, J. W. (2006). Acculturation: A conceptual overview. In M. H. Bornstein & L. R. Cote (Eds.), *Acculturation and parent-child relationships: Measurement and Development* (pp. 13-29). Mahwah, NJ: Lawrence Erlbaum Associates.

Bouffard, J.A. & Rice, S.K. (2011). The influence of the social bond on self-control at the moment of decision: Testing Hirschi's redefinition of self-control. *American Journal of Criminal Justice*, 36: 138-52.

Boyd, R.J. & Higgins, G.E. (2006). Can parental support mediate the link between low self-control and deviance? *Criminal Justice Studies,* 19 (3): 257-273.

Bursik, R.J. (2006). Rethinking the Chicago School of Criminology: A new era of Immigration. In Immigration and Crime: Race, ethnicity, and violence, eds. Ramiro Martinez Jr. and Abel Valenzuela, Jr. NY, NY: University Press.

Burt, C.H., Simons, R.L., & Simons, L.G. (2006). A longitudinal test of the effects of parenting and the stability of self-control: Negative evidence for the general theory of crime. *Criminology*, 44 (2): 353-96.

Burton, V.S. Jr., Cullen, F.T., Evans, T.D., Alarid, L.F., & Dunaway, R.G. (1998). Gender, self-control, and crime. *Journal of Research in Crime and Delinquency*, 35 (2): 123-47.

Canter, R.J. (1982). Family correlates of male and female delinquency. *Criminology*, 20 (2): 149-168.

Cernkovich, S.A. & Giordano, P.C. (1987). Family relationships and delinquency. *Criminology*. 25 (2): 295-321.

Cheung, N.W.T. & Cheung, Y.W. (2008). Self-control, social factors, and delinquency: A test of the general theory of crime among adolescents in Hong Kong. *Journal of Youth and Adolescence*, 37: 412-430.

Curran, D. & Renzetti, C.M. (1994). *Theories of crime*. Boston: Pearson.

Desmond, S.A. & Kubrin, C.E. (2009). The power of place: Immigrant communities and adolescent violence. *The Sociological Quarterly*, 50: 581-607.

DiPietro, S.M. (2010). *Immigrant assimilation, family functioning, and delinquency: A test of mediating and moderating influences*. (Doctoral Dissertation).

Dishion, T.J., Patterson, G.R., & Skinner, M.L. (1991). Family, school, and behavior antecedents to early adolescent involvement with antisocial peers. *Developmental Psychology,* 27 (1): 172-80.

Durkheim, E. (1961). *Moral Education* (E. K. Wilson & H. Schnurer, Trans.). New York: The Free Press.

Earls, F.J. (2002) *Project on human development in Chicago neighborhoods: Longitudinal cohort study*, 1994-2001 (Study description): Henry A. Murray Research Center, Harvard University.

Elliott, D.S. & Ageton, S.S. (1980). Reconciling race and class differences in self-reported and official estimates of delinquency. *American Sociological Review* 45 (1): 95–110.

Epstein, J.A., Botvin, G.J. & Diaz, T. (2000). Alcohol use among Hispanic adolescents: Role of linguistic acculturation and gender. *Journal of Alcohol and Drug Education*, 45 (3): 18-32.

Epstein, J.A., Botvin, G.J. & Diaz, T. (2001). Linguistic acculturation associated with higher marijuana and polydrug use among Hispanic adolescents. *Substance Use and Misuse*, 36, 477-499.

Escovar, P. & Lazarus, P. (1982). Cross-cultural child rearing practices: Implications for school psychology. *School Psychology International,* 3: 143-8.

Evans, T.D., Cullen, F.T., Burton Jr., V.S., Dunaway, R.G., & Benson, M.L. (1997). The social consequences of self-control: Testing the general theory of crime. *Criminology*, 35 (3): 475-504.

Feldman, S.S. & Weinberger, D.A. (1994). Self-restraint as a mediator of family influences on boys' delinquent behavior: A longitudinal study. *Child Development*, 65: 195-211.

Felson, R.B. & Osgood, D.W. (2008). Violent crime. In E. Goode (Ed.), *Out of control: Assessing the General Theory of Crime* (pp. 160-72). Stanford, CA: Stanford University Press.

Forehand, R. & Kotchick, B.A. (1996). Cultural diversity: A wake-up call for parent training. *Behavior Therapy*, 24: 187-206.

Foshee, V. & Bauman, K.E. (1994). Parental attachment and adolescent cigarette smoking initiation. *Journal of Adolescent Research,* 9: 88-104.

Geis, C. (2008). Self-control: A hypercritical assessment. In E. Goode (Ed.), *Out of control: Assessing the General Theory of Crime* (pp. 203-16). Stanford, CA: Stanford University Press.

Germán, M. Gonzales, N.A., & Dumka, L. (2009). Familism values as a protective factor for Mexican-origin adolescents exposed to deviant peers. *Journal of Early Adolescence,* 29 (1): 16-42.

Gibbons, D.C. (1994). Talking about crime and criminals: Problems and issues in theory and development in criminology. Englewood Cliffs, NJ: Prentice Hall.

Gibbs, J.J., Giever, D., & Higgins, G.E. (2003). A test of Gottfredson and Hirschi's General Theory using structural equation modeling. *Criminal Justice and Behavior*, 30 (4): 441-58.

Gibbs, J.J., Giever, D., & Martin, J.S. (1998). Parental management and self-control: An empirical test of Gottfredson and Hirschi's general theory. *Journal of Research in Crime and Delinquency*, 35 (1): 40-70.

Gibson, C., Schreck, C.J., & Miller, M. (2004). Binge drinking and negative alcohol-related behaviors: A test of self-control theory. *Journal of Criminal Justice*, 32: 411-420.

Gibson, C.L., Sullivan, C.J., Jones, S., & Piquero, A.R. (2010). "Does it take a village?" Assessing neighborhood influences on children's self-control. *Journal of Research in Crime and Delinquency*, 47 (1): 31-62.

Gibson, C.L., Ward, J.T. Wright, J.P., Beaver, K.M., & Delisi, M. (2010). Where does gender fit in the measurement of self-control? *Criminal Justice and Behavior*. 37 (8): 883-903.

Gil, A.G., Wagner, E.F., & Vega, W.A. (2000). Acculturation, familism, and alcohol use among Latino adolescent males: Longitudinal relations. *Journal of Community Psychology,* 28 (4): 443-58.

Glueck, S. & Glueck, E. (1952). *Delinquents in the making*. New York: Harper & Brothers.

Gordon-Larsen, P., Harris, K.M., Ward, D.S., & Popkin, B.M. (2003). Acculturation and overweight related behaviors among Hispanic immigrants to the U.S.: The National Longitudinal Study of Adolescent Health. *Social Sciences Medicine,* 53: 2023-34.

Gottfredson, M.R. & Hirschi, T. (1990). *A general theory of crime*. Stanford: Stanford University Press.

Gove, W.R. & Crutchfield, R.D. (1982). The family and juvenile delinquency. *The Sociological Quarterly,* 23: 301-19.

Grasmick, H.G., Tittle, C.R., Bursik Jr., R.J., & Arneklev, B.J. (1993). Testing the core implications of Gottfredson and Hirschi's general theory of crime. *Journal of Research in Crime and Delinquency,* 30 (1): 5-29.

Greenberg, D.F. (2008). Age, sex, and racial distribution of crime. In E. Goode (Ed.), *Out of control: Assessing the General Theory of Crime* (pp. 38-48). Stanford, CA: Stanford University Press.

Hay, C. (2001). Parenting, self-control, and delinquency: A test of self-control theory. *Criminology,* 39 (3): 707-36.

Hay, C. & Forrest, W. (2008). Self-control theory and the concept of opportunity: The case for a more systematic union. *Criminology,* 46 (4): 1039-1072.

Higgins, G.E. (2002). General Theory of Crime and deviance: A structural equation modeling approach. *Journal of Crime and Justice*, 25 (2): 71-95.

Higgins, G.E. Tewksbury, R., & Mustaine, E.E. (2007). Sports fan binge drinking: An examination using low self-control and peer association. *Sociological Spectrum,* 27: 389-404.

Hirschi, T. (1969). *Causes of delinquency.* Berkeley: University of California Press.

Hirschi, T. (2004). Self-control and crime. In R.F. Baumeister & K.D. Vohs (Eds.), Handbook of self-regulation: Research, theory, and applications (pp. 537-552). New York: The Guilford Press.

Hirschi, T. & Gottfredson, M. (1993). Commentary: Testing the general theory of crime. *Journal of Research in Crime and Delinquency*, 30: 47-54.

Hirschi, T. & Gottfredson, M. (2001). Self-control theory. In R. Paternoster & R. Bachman (Eds.) *Explaining criminals and crime* (pp. 81-96). Los Angeles, CA: Roxbury Publishing Company.

Hirschi, T. & Gottfredson, M. (2008). Critiquing the critics: The authors respond. In E. Goode (Ed.), *Out of control: Assessing the General Theory of Crime* (pp. 217-32). Stanford, CA: Stanford University Press.

Huizinga, D., Esbensen, F., & Weihar, A. (1991). Are there multiple paths to delinquency? *Journal of Criminal Law and Criminology*, 82: 83-118.

Intravia, J., Jones, S., & Piquero, A.R. (2011). The roles of social bonds, personality, and perceived costs: An empirical investigation into Hirschi's "new" control theory. *International Journal of Offender Therapy and Comparative Criminology*, 20 (10): 1-19.

Jones, S., Cauffman, E., Piquero, A.R. (2007). The influence of parental support among incarcerated adolescent offenders: The moderating effects of self-control. *Criminal Justice and Behavior*, 34 (2): 229-45.

Kaplan, C.P. Nápoles-Springer, A., Stewart, S.L., & Perez-Stable, E.J. (2001). Smoking acquisition and young Latinas: The role of socio environment and personal factors. *Addictive Behaviors,* 26: 531-503.

Keane, C., Maxim, P.S., & Teevan, J.J. (1993). Drinking and driving, self-control, and gender: Testing a general theory of crime. *Journal of Research in Crime and Delinquency,* 30 (1): 30-46.

Knight, G.P., Losoya, S.H., Cho, Y.I., Chassin, L., Williams, J.L., & Cota-Robles, S. (2012). Ethnic identity and offending trajectories among Mexican-American juvenile offending: Gang membership and psychological maturity. *Journal of Research on Adolescence,* 22 (4): 782-96.

Kopak, A.M. & Hawley, F.F. (2012). Family warmth and delinquency among Mexican Americans and white youth: detecting the causal variables. *OJJDP Journal of Juvenile Justice,* 1 (2): 52-67.

Krohn, M. D., Stern, S. B., Thornberry, T. P., & Jang, S. J. (1992). The measurement of family process variables: The effect of adolescent and parent perceptions of family life on delinquent behavior. *Journal of Quantitative Criminology* 8: 287-315.

LaGrange, T.C. & Silverman, R.A. (1999). Low self-control and opportunity testing: The general theory of crime as an explanation of gender differences in delinquency. *Criminology,* 37 (1): 41-72.

Larzelere, R.E. & Patterson, G.R. (1990). Parental management: Mediator of the effect of socioeconomic status on early delinquency. *Criminology,* 28 (2): 301-24.

Loeber, R. & Dishion, T. (1983). Early predictors of male delinquency: A review. *Psychological Bulletin,* 94 (1): 68-99.

Longshore, D., Chang, E., Hsieh, S. & Messina, N. (2004). Self-control and social bonds: A combined control perspective on deviance. *Crime & Delinquency,* 50 (4): 542-564.

Longshore, D., Chang, E., & Messina, N. (2005). Self-control and social bonds: A combined control perspective on juvenile offending. *Journal of Quantitative Criminology*, 21 (4): 419-437.

Longshore, D., Stein, J.A., & Turner, S. (1998). Reliability and validity of a self-control measure: Rejoinder. *Criminology,* 36 (1): 175-82.

Longshore, D. & Turner, S. (1998). Self-control and criminal opportunity: Cross-sectional test of the General Theory of Crime. *Criminal Justice and Behavior*, 25 (1): 81-98.

Longshore, D., Turner, S., & Stein, J. A. (1996). Self-control in a criminal sample: An examination of construct validity. *Criminology*, 34: 209-228.

Lopez, K.M. & Miller, H.V. (2011). Ethnicity, acculturation, and offending: findings from a sample of Hispanic adolescents. *The Open Family Studies Journal*, 4 (1): 27-37.

Marchenko, Y. (2009). *Multiple Imputation Analysis using Stata's mi Command*. Unpublished paper presented at 2009 UK Stata Users Group Meeting, London, UK.

Magoon, M.E. &Ingersoll, G.M. (2006). Parental modeling, attachment, and supervision as moderators of adolescent gambling. *Journal of Gambling Studies*, 22 (1): 1-22.

Matsueda, R.L. & Heimer, K. (1987). Race, family structure, and delinquency: A test of differential association and social control theories. *American Sociological Review,* 52: 826-840.

Max Plank Institute for Research on Collective Goods. (2012, April). *Low self-control as a source of crime: A meta-study*. Germany: Christoph Engel.

McNulty Eitle, T., Gonzalez Wahl, A., & Aranda, E. (2009). Immigrant generation, selective acculturation, and alcohol use among Latina/o adolescents. *Social Science Research,* 38 (3): 732-42.

Miller, H.V. (2011). Acculturation, social context, and drug use: findings from a sample of Hispanic adolescents. *American Journal of Criminal Justice,* 36: 93-105.

Miller, H.V., Barnes, J.C., & Beaver, K.M. (2011). Self-control and health outcomes in a nationally representative sample. *American Journal of Health and Behavior*, 35 (1): 15-27.

Miller, H.V., Jennings, W.G., Alvarez-Rivera, L.L., & Lanza-Kaduce, L. (2009). Self-control, attachment, and deviance among Hispanic adolescents. *Journal of Criminal Justice,* 37 (1): 77-84.

Miller, H.V. (2012). Correlates of delinquency and victimization in a sample of Hispanic youth. *International Criminal Justice Review*, 22 (2): 153-70.

Morenoff, J.D. & Astor, A. (2006). Immigration, assimilation, and crime: Generational difference in youth violence in Chicago. In Immigration and Crime: Race, ethnicity, and violence, eds. R. Martinez Jr. & A. Valenzuela, Jr. NY, NY: University Press.

Morris, G.D., Wood, P.B., & Dunaway, R.G. (2007). Testing the cultural invariance of parenting and self-control as predictors of American Indian delinquency. *Western Criminology Review*, 8 (1): 32-47.

Nakhaie, M.R., Silverman, R.A., & Lagrange, T.C. (2000). Self-control and social control: An examination of gender, ethnicity, class, and delinquency. *Canadian Journal of Sociology*, 25 (1): 35-59.

Nye, F.I. (1958). Family relationships and delinquent behavior. New York: John Wiley.

Osgood, D.W., McMorris, B.J., & Potenza, M.T. (2002). Analyzing multiple-item measures of crime and deviance I: Item response theory scaling. *Journal of Quantitative Criminology*, 18, (3): 267-296.

Pabon, E. (1998). Hispanic adolescent delinquency and the family: A discussion of sociocultural influences. *Adolescence,* 33 (132): 941-55.

Pantin, H., Schwartz, S. J., Sullivan, S., Coatsworth, J. D., & Szapocznik, J. (2003). Preventing substance abuse in Hispanic immigrant adolescents: An ecodevelopmental, parent-centered approach. *Hispanic Journal of Behavioral Sciences, 25*: 469-500.

Paternoster, R. & Bachman, R. (2001). Control theories of crime: Introduction. In R. Paternoster & R. Bachman (Eds.) *Explaining criminals and crime* (pp. 73-80). Los Angeles, CA: Roxbury Publishing Company.

Paternoster, R. & Brame, R. (1997). Multiple routes to delinquency? A test of developmental and general theories of crime. *Criminology,* 35 (1): 49-84.

Pew Research Center: Pew Hispanic Center. (2005, January). *Hispanic: A people in motion*. Washington, DC: Roberto Suro, Richard Fry, Rakesh Kochhar, Jeffrey Passel, Sonya Tafoya, Duke C. Benavides, Mary Seaborn, & Angela F. Luben.

Pew Research Center: Pew Hispanic Center. (2009, March). *Latino Children: A Majority are U.S. –born Offspring of Immigrants.* Washington, DC: Richard Fry & Jeffrey S. Passel.

Pew Research Center: Pew Hispanic Center. (2009, December). *Between Two Worlds How Young Latinos Come of Age in America.* Washington, DC: Paul Taylor, Rakesh Kochhar, Richard Fry, Gretchen Livingston, Daniel Dockterman, Mark Hugo Lopez, Jeffrey S. Passel, Gabriel Velasco, & Mary Seaborn.

Pew Research Center: Pew Hispanic Center. (2010, October). *Illegal immigrant backlash, worries divides Latinos*. Washington, DC: Mark Hugo Lopez, Rich Morin, & Paul Taylor.

Pew Research Center: Pew Hispanic Center. (2012, April). *Net migration from Mexico falls to zero – and perhaps less*. Washington, DC: Jeffrey Passel, D'Vera Cohn, & Ana Gonzalez-Barrera.

Pew Research Center: Pew Hispanic Center. (2012, April). *When labels don't fit: Hispanics and their views of identity*. Washington, DC: Jeffrey Passel, D'Vera Cohn, & Ana Gonzalez-Barrera.

Piquero, A.R. (2008). Measuring self-control. In E. Goode (Eds.), *Out of control: Assessing the General Theory of Crime* (pp. 26-37). Stanford: Stanford University Press.

Piquero, A.R. & Bouffard, J.A. (2007). Something old, something new: A preliminary investigation of Hirschi's redefined self-control. *Justice Quarterly,* 24 (1): 1-27.

Piquero, A.R., Gibson, C.L., & Tibbetts, S.G. (2002). Does self-control account for the relationship between binge drinking and alcohol-related behaviors? *Criminal Behaviour and Mental Health*, 12: 135-54.

Piquero, A.R. & Rosay, A.B. (1998). The reliability and validity of Grasmick et al.'s self-control scale: A comment on Longshore et al. *Criminology*. 36 (1): 157-173.

Polakowski, M. (1994). Linking self and social control with deviance: Illuminating the structure underlying a General Theory of Crime and its relation to deviant activity. *Journal of Quantitative Criminology,* 10 (1): 41-78.

Paral, R. & Norkewicz. (2003). The Metro Chicago immigration fact book. Institute for Metropolitan affairs: Roosevelt University Press.

Portes, A. & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *The ANNALS of the American Academy of Political and Social Science,* 530 (1): 74-96.

Pratt, T.C. & Cullen, F.T. (2000). The empirical status of Gottfredson and Hirschi's general theory of crime: A meta-analysis. *Criminology*, 38 (3): 931-964.

Reckless, W.C. (1967). *The crime problem*. New York: Appleton-Century-Crofts.

Reiss, A.J. (1951). Delinquency as the failure of personal and social controls**.** *American Sociological Review*, 16 (2): 196-207.

Rising, B. (November, 2010). *Multiple Imputation*. Unpublished paper presented at Stata Corp LP 2010 Italian Stata Users Group Meeting, Bologna, Italia.

Sabogal, F., Marin, G., Otero-Sabogal, R., Marin, B.V., & Perez-Stable, E.J. (1987). Hispanic familism and acculturation: What changes and what doesn't? *Hispanic Journal of Behavioral Sciences*, 9: 397-42.

Sampson, R.J. & Laub, J.H. (1993). Crime in the Making: Pathways and Turning Points through Life. Cambridge, Mass.: Harvard University Press

Sampson, R.J., Morenoff, J.D., & Raudenbush, S.W. (2005). Social anatomy of racial and ethnic disparities in violence. *American Journal of Public Health*, 5: 224-32.

Schwartz, S.J., Mason, C.A., Pantin, H., Szapocznik, J. (2009). Longitudinal relationships between family functioning and identity development in Hispanic adolescents: Continuity and change. *The Journal of Early Adolescence,* 29 (2): 177-211.

Sellers, C.S. (1999). Self control and intimate violence: An examination of the scope and specifics of the General Theory of Crime. *Criminology*, 37 (2): 375-404.

Shekarkhar, Z. & Gibson, C.L. (2011). Gender, self-control, and offending behaviors among Latino youth. *Contemporary Criminal Justice,* 27 (1): 63-80

Shoemaker, D.J. (1996). *Theories of delinquency: An examination of explanations of delinquent behavior (3rd ed.).* New York: Oxford University Press.

Simpson, Sally S. and Lori Ellis. 1995. "Doing gender: Sorting out the caste and class Conundrum." *Criminology,* 33: 47-81.

Smith, C. & Krohn, M.D. (1995). Delinquency and family life among male adolescents: The role of ethnicity. *Journal of Youth and Adolescence.* 24(1): 69-93.

Taylor, C. (2001). The relationship between social and self-control: Tracing Hirschi's criminological career. *Theoretical Criminology*, 5 (3): 369-88.

Thomson, M.D. & Hoffman-Goetz, L. (2009). Defining and measuring acculturation: A systematic review of public health studies with Hispanic population in the U.S. *Social Sciences and Medicine,* 69: 983-91.

Toby, J. (1957). Social disorganization and stake in conformity: Complementary factors in the predatory behavior of hoodlums. *The Journal of Criminal Law, Criminology, and Police Science*, 48 (1): 12-17.

UCLA Analyzing clustered data, http://statistics.ats.ucla.edu/stat/stata/library/cpsu.htm

U.S. Census Bureau (2005). Hispanic population passes 40 million. Retrieved from http://www.census.gov/newsroom/releases/archives/population/cb05-77.html.

U.S. Census Bureau. (2010). Hispanics in the U.S. Washington, D.C. U.S. Census bureau, population division. Retrieved from http://www.census.gov/population/www/socdemo/hispanic/hispanic_pop_present ation.html.

Unnever, J.D., Cullen, F.T., & Pratt, T.C. (2003). Parental management, ADHD, and delinquency involvement: Reassessing Gottfredson and Hirschi's general theory of crime. *Justice Quarterly,* 20 (3): 471-500.

Vazsonyi, A.T. & Crosswhite, J.M. (2004). A test of Gottfredson and Hirschi's General Theory of Crime in African American adolescents. *Journal of Research in Crime and Delinquency,* 41 (4): 407-32.

Vazsonyi, A.T. & Flannery, D.J. (1997). Early adolescent delinquent behaviors: Associations with family and school domains. *The Journal of Early Adolescence*, 17 (3): 271-93.

Vazsonyi, A.Y. & Klanjšek, R. (2008). A test of self-control theory across different socioeconomic strata. *Justice Quarterly*, 25 (1): 101-31.

Vazsonyi, A.T., Pickering, L.E., Junger, M., & Hessing, D. (2001). An empirical test of the General Theory of Crime: A four-nation comparison study of self-control and the prediction of deviance. *Journal of Research in Crime and Delinquency,* 38 (2): 91-131.

Vazsonyi, A.T., Clifford Wittekind, J.E., Belliston, L.M., & Van Loh, T.D. (2004). Extending the general theory of crime to "The East:" Low self-control in Japanese late adolescents. *Journal of Quantitative Criminology,* 20 (3): 189-216.

Vera, E.P. & Moon, B. (2013). An empirical test of low self-control theory among Hispanic youth. *Youth Violence and Juvenile Justice,* 11 (1): 79-93.

Vold, G.B. & Bernard, T.J. (1986). *Theoretical criminology.* New York: Oxford University Press.

Walker, S., Spohn, C., & DeLone, M. (2007). *The color of justice: Race, ethnicity, and crime in America* (4th ed). Belmont, CA: Wadsworth.

Williams, F.P. & McShane, M.D. (2004). *Criminological theory.* New Jersey: Prentice Hall.

Williams, M.W.M., Fletcher, R.B., & Ronan, K.R. (2007). Investigating the theoretical construct and invariance of the self-control scale using CFA. *Journal of Criminal Justice*, 35: 205-18.

Wood, P.B., Pfefferbaum, B., & Arneklev. B.J. (1993). Risk-taking and self-control: Social psychological correlates of delinquency." *Journal of Crime & Justice,* 16: 111-130.

Winfree Jr, L.T., Taylor, T.J., He, N., & Esbensen, F. (2006). Self-control and variability over time: Multivariate results using a five-year, multi-site panel of youths. *Crime and Delinquency,* 52 (2): 253-86.

Wright, J.P. & Beaver, K.M. (2005). Do parents matter in creating self-control in their children? A genetically informed test of Gottfredson and Hirschi's theory of low self-control. *Criminology*, 43(4): 1169-1202.

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