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SELF-CONTROL THEORY: AN EXPLORATION OF RACIAL DISPARITIES IN
OFFENDING

By

EmmaLeigh E. Kirchner

B.A., University of Louisville, 2009

A Thesis

Submitted to the Faculty of the
College of Arts and Sciences of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

Master of Science

Department of Justice Administration

University of Louisville

Louisville, Kentucky

May 2011

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A Thesis Approved on

April 12, 2011

by the following Thesis Committee:

Thesis Director (George Higgins)

Richard Tewksbury

Seana Golder

DEDICATION

This thesis is dedicated to my parents

Steve Kirchner

and

Barbara Kirchner Keith

and my grandmother,

Margie "Memaw" Kirchner

for always allowing me to be the person I am
and always encouraging me to reach new heights
(even when they don't understand them).

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She is always capable of calming me down and allowing me to see the bigger picture.

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ABSTRACT

SELF-CONTROL THEORY: AN EXPLORATION OF RACIAL DISPARITIES IN OFFENDING

EmmaLeigh E. Kirchner

April 12, 2011

This study seeks to examine whether racial disparities in offending can be explained through self-control theory. The study utilized longitudinal responses of a nationally representative sample of 1700 adolescents. Parenting and self-control measures are taken from the mothers supplemental survey and peer pressure and offending are taken from self-reports from the adolescents at a later time.

Structural equation modeling was used to examine the racial differences in self-control theory. Both a measurement model and a structural model are presented. The results of the study find empirical support for the construct of self-control theory, even within the face of racial disparities. However, support was not found for the link between race and parenting and therefore does not show support for self-control theory's assumption that parenting can account for differences in offending across races. Both theoretical and policy implications are discussed.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	iv
ABSTRACT	vi
INTRODUCTION.....	1
THEORETICAL PERSPECTIVE	6
REVIEW OF RELEVANT LITERATURE	10
Self-Control and Offending.....	10
Parental Management and Self-Control.....	12
Race and Self-Control.....	13
Peer Association and Self-Control	16
The Present Study.....	18
METHODS.....	19
Sampling and Procedures	19
Missing Data.....	21
Measures	22
Analysis Plan.....	25
RESULTS.....	33
Step 1: Descriptive Statistics.....	33
Step 2: t-tests	37
Step 3: Correlations.....	41
Step 4: Measurement Model	43
Step 5: Structural Model.....	49
DISCUSSION	54
CONCLUSION.....	71
References	73
Appendix A.....	86
Curriculum Vitae.....	89

LIST OF TABLES

Table 1: Descriptive Statistics.....	34
Table 2: T-Tests	39
Table 3: Tetrachoric Correlation Matrix.....	Error! Bookmark not defined.
Table 4: Fit Statistics for Measurement Model.....	44
Table 5: Measurement Model.....	46
Table 6: Correlations of Latent Measures within Measurement Model	47
Table 7: Fit Statistics of SEM.....	49

LIST OF FIGURES

Figure 1: Self-control Theory Model	33
Figure 2: Visual Model of Correlations Among Latent Variables.....	48
Figure 2: Final Structural Equation Model.....	52

CHAPTER I

INTRODUCTION

Crime is a problem in the United States. In 2007, violent crimes cost Americans \$2 billion and property crimes cost \$16 billion (Bureau of Justice Statistics, 2010). Both major forms of crime reporting, arrest data as well as victimization data, show a large disparity between black and white crime rates (Bureau of Justice Statistics, 2010; Felson, Deane, & Armstrong, 2008; Hawkins, Laub, Lauritsen, & Cothorn, 2000; Sampson & Laub, 1994). Blacks only account for a little over 12 percent of the population (U.S. Census Bureau, 2000), yet they account for around 40 percent of murderous offenses in the United States (Uniform Crime Report, 2009). A racial disparity is present amongst offenses, although the disparity is more pronounced when examining violent offenses (i.e., violent offenses other than murder) rather than drug or property crimes (Zimring & Hawkins, 1997). Among adolescents non-whites report higher rates of property crime, as well as comparable rates for assault within a nationally representative sample (Hawkins et al., 2000). In 2005, blacks, aged 18-29 accounted for over 40 percent of the prison population (Bureau of Justice Statistics, 2006).

Along with disparities in crimes amongst black adults, the same disparities exist within black adolescent populations. Williams, Gonzalez, Neighbors, Nesse,

Abelson, Sweetman, and Jackson (2007) examined longitudinal data to examine racial differences in delinquent acts, alcohol, and marijuana use. The data being examined was from the Seattle Social Development Project (SSDP) that began in 1985. The sample the researchers used consisted of 588 black and white youth as well as their parents. The sample was first interviewed when the children were in the 7th grade and every year after until the children had reached the 12th grade. The study included measures of delinquent behavior, justice system involvement, alcohol and marijuana use, race, gender, free lunch status, parental supervision, clarity of family rules and delinquent friends. The results of the study revealed blacks were not more likely than whites to initiate drug and alcohol abuse, nor commit non-violent delinquent acts. However, there was a significant difference when violent delinquent acts were examined. Blacks were more likely to initiate such acts and these differences were accounted for by parental supervision, clarity of rules in the home, as well as association with delinquent peers. These findings represent one example consistent with previous research that found support for blacks being involved in a disproportionate amount of violent crime and offending.

Research has found black youths are committing a disproportionate amount of crimes and delinquent acts, especially violent acts compared to their white counterparts (Williams et al., 2007). In 1999, blacks accounted for 25 percent of all violent crimes committed by juveniles (Uniform Crime Report, 1999). In the same year, black juveniles only accounted for 19 percent of the population and were involved in 54 percent of arrests for robbery and 49 percent

of juvenile arrests for murder (Uniform Crime Report, 1999). Along with violent crimes, black juveniles are also disproportionately committing status offenses and other types of deviant behaviors. One study found blacks were 7.4 times more likely to be arrested for breaking curfew in California (Males & Macallair, 1999). For status offenses, black youths are more likely to be petitioned to court, as well as be placed in out-of-home placement (Steinhard, 1996). As well as being involved in crime, black youths are also disproportionately present within the criminal justice system. In the New York City youth detention centers, black youth account for 95 percent of the center's population (NYC Department of Juvenile Justice, 2001). Along with disproportionate crimes rates, blacks also suffer more negative social outcomes from drug use and abuse (Scheier & Botvin, 1998).

Drug use has been tied to more violent types of crime in numerous studies (Anglin & Speckart, 1988; Banay, 1942; Clayton & Tuchfeld, 1982; Collins, 1988; Dawkins & Dawkins, 1983; Gary, 1980; Harper, 1976; Lewis, Cloninger, & Paid, 1983; Lewis, Shanok, Pincus, & Glaser, 1979; McCord, 1981; O'Donnell, 1966; Simonds & Kashani, 1980; Wieczorek, Welte, & Abel, 1990). According to Wallace, Forman, Guthrie, Bachman, O'Malley, and Johnston (1999) alcohol is the most commonly used drug by black adolescents. Research on drug and alcohol abuse rates put blacks at the bottom of the list for drug use among ethnicities. However, research has also found that although blacks are the lowest reporting group, as other ethnicities' alcoholism decreases with age, blacks remain high (Caetano & Clark, 1998). Blacks are also more likely to die from

complications such as liver cirrhosis from alcohol consumption (Johns Hopkins, 2010) even though their alcohol use tends to be more moderate. Illicit drug use by blacks starts at an early age, on average, 12 years old (Vega, Gil, & Zimmerman, 1993). Drug use among black youth is at a lower rate than whites; however, blacks are more likely to have to deal with social problems due to illicit drug use (Scheier & Botvin, 1998). Like alcohol they are also more likely to remain stable drug users much later in life than whites (Kandel, Yamaguchi, & Chen, 1992). Therefore, although blacks may at times use less amounts of drugs and alcohol than whites, they will use them farther into their life span and will suffer more socially from the use of them.

According to the statistics previously presented racial differences are present in offending rates, as well as risky behaviors. Gottfredson and Hirschi (1990) claim their *General Theory of Crime* can account for all forms of offending that include drug and alcohol use. Self-control is the individual's ability to foresee the consequences of their actions (Gottfredson & Hirschi, 1990). Gottfredson and Hirschi (1990) argued that those with low levels of self-control will be more likely to commit crimes and analogous acts. This occurs because the characteristics of low self-control and offending are synonymous with one another. Self-control levels are developed through proper parental management that occurs before ages 8 and 10. Gottfredson and Hirschi (1990) believe that their self-control theory can account for the offending disparity amongst races through ineffective parental management. Research in this area could be very

important because a racial difference in self-control could have both theoretical and policy implications.

A gap exists in the literature pertaining to the efficacy of the structure of self-control theory explaining offending. Few researchers have examined the influence that race has on offending using self-control theory, but they have opted to use race as a control variable (Junger & Tremblay, 1999; Junger, West & Timman, 2001; LaGrange & Silverman, 1999; LeBlanc, 1993; Vazsonyi, Pickering, Junger, & Hessing, 2001). Those researchers that have examined the influence of race on offending using self-control theory (Hay, 2001; Hay & Carter, 2008; Higgins, & Ricketts, 2005; Longshore, 1998; Longshore et al., 1996; Longshore & Turner, 1998; Vazsonyi & Crosswhite, 2004, Pratt et al., 2004) have failed to include the entire structure of self-control theory (parental management→self-control→offending).

The purpose of this thesis is to try to address the gap in the literature by examining the structure of self-control theory, and its ability to account for the racial disparities in crime using structural equation modeling. First, the basics of self-control theory are presented, as introduced by Gottfredson and Hirschi (1990). Second, a review of the relevant literature on self-control theory is presented that presents a gap in the understanding of self-control and how it can account for racial disparities in offending. Third, the methods of the current study are presented and explained, as well as the analysis plan given. Fourth, the results are presented. Finally, a discussion of the findings of this study are presented as well as theoretical and policy implications.

CHAPTER II

THEORETICAL PERSPECTIVE

Gottfredson and Hirschi's (1990) *General Theory of Crime* introduced self-control theory to criminology. The most basic component of the theory is that individuals are rational beings. Individuals are capable of making their own decisions, based solely on weighing the consequences of their actions. By weighing the consequences individuals will ultimately choose actions that will bring them the most pleasure and the least amount of pain. Along with this, Gottfredson and Hirschi (1990) point out that not all individuals will find the same actions pleasurable or painful. Some individuals may find crime and deviance to be pleasurable.

Gottfredson and Hirschi (1990) defined crime as, "acts of force or fraud undertaken in pursuit of self-interest" (p.15). Gottfredson and Hirschi (1990) expand crime to include analogous acts (i.e., underage drinking, risky sexual behavior). Gottfredson and Hirschi (1990) argued no matter the crime or deviant behavior, crime and self-control --especially low self-control-- share several characteristics. They argued, "criminal acts will tend to be short lived, immediately gratifying, easy, simple, and exciting" (Gottfredson & Hirschi, p.14,

1990). Gottfredson and Hirschi (1990) believe that the individuals who find these acts most pleasurable have low levels of self-control.

Self-control refers to the individual's ability to foresee the consequences of their action(s) (Gottfredson & Hirschi, 1990). According to the theory, those who lack self-control are impulsive, self-centered, physical (rather than mental), risk-seeking, unable to see long-term consequences, and prefer simple tasks (rather than difficult) (Gottfredson & Hirschi, 1990). Those who have these characteristics will have a tendency to find crime and deviance attractive. This is because of the close proximity between the characteristics of crime and self-control (i.e., immediate gratification, simple, easy, and exciting). Gottfredson and Hirschi (1990) state:

The dimensions of self-control are, in our view, factors affecting calculation of the consequences of one's acts. The impulsive or shortsighted person fails to consider the negative or painful consequences of his acts, the insensitive person has fewer negative consequences to consider; the less intelligent person also has fewer negative consequences to consider (has less to lose) (p. 95).

Gottfredson and Hirschi (1990) find that one main reason is responsible for low self-control and that is ineffective parental management.

Gottfredson and Hirschi (1990) argue the four main parental management tasks that must be performed effectively in order to create an efficient amount of self-control, are attachment, monitoring, analyzing behavior, and discipline. First, the parent must be attached to the child to form an emotional bond. Second, monitoring allows parents to gather behavioral information. The third task is for

parents to analyze the behavior(s) of their child to determine whether the behavior is criminal or deviant. Fourth, when parents deem the behavior as criminal or deviant, they are to perform non-corporal punishment for deviance.

For self-control to develop effectively, Gottfredson and Hirschi (1990) believe these four tasks must be performed both consistently and efficiently throughout the first eight to ten years of a child's life. Without consistent and efficient parental management within the first eight to ten years of a child's life, children are likely to develop very low self-control levels. The self-control levels that are developed by the age of eight to ten will then stay consistent throughout the life course (Gottfredson & Hirschi, 1990). Overall, the structure of Gottfredson and Hirschi's (1990) theory is that ineffective or poor parental management will lead to low levels of self-control, and low levels of self-control will lead to offending.

This study uses Gottfredson and Hirschi's (1990) theory to understand racial disparities in delinquent behavior. Gottfredson and Hirschi (1990) point out minority groups are less likely to consistently and effectively perform the steps of parenting tasks. Gottfredson and Hirschi (1990) state:

There are differences among racial and ethnic groups... in levels of direct supervision by family, and thus there is a 'delinquency' component to racial differences in delinquency rates, but as with gender, differences in self-control probably outweigh differences in supervision accounting for racial or ethnic variations (p.153).

Gottfredson and Hirschi (1990) argue, "research on racial differences should focus on differential child-rearing practices" (p.153). While Gottfredson and

Hirschi (1990) discuss ineffective parental management to create the racial difference in crime, other theories have pointed to things such as peer association or peer influence.

Unlike other crime theories, such as Akers (1985) version of social learning theory that emphasizes delinquent peer association as a cause of offending, Gottfredson and Hirschi (1990) believe that delinquent peer association is simply a consequence of low self-control. Further, Gottfredson and Hirschi (1990) believe that peers do not influence the self-control level of others. In Gottfredson and Hirschi's (1990) view, individuals that have the characteristics of low self-control make bad friends. However, although "bad" friends, they are often fun, or "the life of the party", and this makes these individuals attractive to others that are likely to have low self-control; thus, these individuals are in contact with others who are impulsive, risk-taking, self-centered, physical (rather than mental), unable to see long-term consequences and prefer simple (rather than difficult) tasks, creating an entire group of individuals with low self-control.

The review of the relevant literature will show that Gottfredson and Hirschi's (1990) theory has empirical support. In addition, this review of the literature will show that less empirical attention has been given to explaining racial disparities in offending using Gottfredson and Hirschi's (1990) self-control theory, than other forms of tests of self-control theory (i.e., parental management --> self-control-->offending or self-control -->offending).

CHAPTER III

REVIEW OF RELEVANT LITERATURE

This review of the relevant literature will provide information that will show the current state of the empirical validity of the theory. The literature review will begin with a brief presentation of the literature that has examined the connection between low self-control and offending. The literature review will then briefly review the literature that has examined the connection between the major concepts of the theory (i.e., parental management, self-control, and offending). These two presentations will provide some indication that self-control theory has validity in general. Then, those studies which examined race in the context of self-control theory will be presented. Very few studies have utilized race as more than a control variable when testing the theory and currently no studies have examined the entire structure of self-control theory and its ability to account for racial disparities in offending. Next, the literature review will show the relevance of including delinquent peer association in tests of self-control theory.

Self-Control and Offending

Self-control theory is one of the most widely tested theories within criminology (Akers, 1991; Geis, 2000, Marenin & Reisig, 1995; Pratt & Cullen, 2000; Pratt, Turner & Piquero, 2004; Sampson & Laub, 1993; Tittle, 1991). Since its presentation in 1990, most researchers have examined the relationship between self-control and offending (Benson & Moore, 1992; Brownfield & Sorenson, 1993; Grasmick, Tittle, Bursik, & Arneklev, 1993; Paternoster & Brame, 1998, Piquero & Tibbetts, 1996; Polakowski, 1994; Pratt & Cullen, 2000; Winfree & Bernat, 1998). Almost all the studies have found a link between low levels of self-control and deviant or “analogous” acts (Brownfield & Sorenson, 1993; Giever, 1995; Grasmick, et al., 1993; Higgins, 2002; Longshore, 1998; Longshore, Turner, & Stein, 1996; Nagin & Paternoster, 1993; Polakowski, 1994; Wood, Pfefferbaum & Arneklev, 1993; Piquero & Tibbetts, 1996; Pratt & Cullen, 2000; Winfree & Bernat, 1998), giving much empirical validity for Gottfredson and Hirschi’s (1990) self-control theory.

To provide a clearer picture of empirical validity for Gottfredson and Hirschi’s (1990) theory, Pratt and Cullen (2000) provided a meta-analysis. Their meta-analysis consisted of 21 empirical studies examining the connection between low self-control and offending. Their meta-analysis showed moderate support for the link between low self-control and offending. The link between low self-control and offending has continued to be supported in more current research (Baker, 2010; Jennings, Higgins, Tewksbury, Gover & Piquero, 2010; Jeong & Eamon, 2009, Vazsonyi & Huang, 2010). Only recently has the focus of

research shifted from offending and self-control to the “cause” of self-control levels that Gottfredson and Hirschi (1990) believe to be parental management.

Parental Management and Self-Control

The structure of Gottfredson and Hirschi’s (1990) theory is that poor or ineffective parental management leads to low self-control and individuals with low self-control are more likely to offend. Unfortunately, the structure of the theory has been empirically tested less than the connection between low self-control and offending. However, some literature does exist that has examined the connection between parental management, self-control, and offending. For example, the following studies have supported the connection between parental management, low self-control, and offending (Burt, Simons, & Simons, 2006; Cochran, Wood, Sellers, Wilkerson & Chamlin, 1998; Feldman & Weinberger, 1994; Gibbs, Giever, & Higgins, 2003; Gibbs, Giever, & Martin, 1998; Hay, 2001; Hay & Forrest, 2008; Hope & Chapple, 2005; Hope, Grasmick, & Pointon, 2003; Nofziger, 2008; Perrone, Sullivan, Pratt, & Margaryan, 2004; Polakowski, 1994; Pratt et al., 2004; Unnever, Cullen, & Pratt, 2003). In short, these studies suggest that a connection between parental management, self-control, and offending exists as Gottfredson and Hirschi (1990) suggested.

Overall, the literature to this point has successfully shown that Gottfredson and Hirschi’s (1990) theory has empirical support. To be clear, these studies have shown that there is at least a moderate link between self-control and offending. Further, their assumptions about parental management, self-control, and offending are supported in the empirical literature. However, this literature is

not able to speak to the efficacy of racial disparities in offending using self-control theory.

Race and Self-Control

While the literature above shows that self-control theory has empirical validity, few studies of the theory have addressed racial disparities in offending. Gottfredson and Hirschi (1990) point out that their theory of self-control accounts for all races and ethnicities. From above, Gottfredson and Hirschi (1990) argued that racial disparities in offending are likely to be accounted for because of racial differences in parental management that will translate into differences in self-control and culminate into differences in offending.

Some researchers have used race as a control measure (Junger & Tremblay, 1999; Junger, et al., 2001; LaGrange & Silverman, 1999; LeBlanc, 1993; Vazsonyi, et al., 2001). This means that race was not the focus of the study, but they were attempting to hold race constant. In other words, the researchers were attempting to account for the effect of self-control on offending while holding race constant. Another reason that race has not been focused on specifically is because the samples were not diverse enough to account for racial disparities. Unfortunately, these studies did not perform a direct test of Gottfredson and Hirschi's (1990) assumptions of how race may account for racial disparities in offending.

Fewer studies, than those mentioned above, have been conducted to explore racial disparities in offending using self-control theory (Hay, 2001; Longshore, 1998; Longshore et al., 1996; Longshore & Turner, 1998; Vazsonyi &

Crosswhite, 2004; Pratt, et al., 2004). Some themes come from the literature. One persistent theme from these studies, which examine race, is that they do not take into account the full structure of self-control theory (parental management→self-control→offending). For example, Longshore (1998) used secondary data from the Treatment Alternatives to Street Crime (TASC) programs evaluation to examine the relationship between self-control and opportunity as a predictor of both personal and property crimes. The sample from the TASC program was all criminal offenders. The sample had an ample racial distribution. Specifically, 57 percent of the sample was African American; therefore, allowing Longshore (1998) to examine the relationship of self-control and offending in the context of race. Longshore's (1998) findings were consistent with the beliefs of Gottfredson and Hirschi (1990). He found that self-control was correlate of offending, no matter the race of the individual, but did not include a measure of parental management. Therefore, this study is unable to speak of the full structure of self-control theory.

Vazsonyi and Crosswhite (2004) examined self-control theory in a sample of adolescents. They found that self-control had a link with offending, no matter the race of the individual. This is consistent with Gottfredson and Hirschi (1990). Gottfredson and Hirschi (1990) argue that race should not disrupt the link between self-control and offending. The study did not, however, account for parental management in anyway; therefore, it was not able to account for the full structure of self-control theory as well as race.

One study that attempts to examine self-control theory and race is Pratt, Turner, and Piquero (2004). Specifically, their study examined parental management and self-control as well as race. Their findings did show significant differences in supervision as well as discipline. Blacks within the sample showed low levels of supervision, as well as elevated levels of discipline. If the discipline included corporal punishment Gottfredson and Hirschi (1990) believe this is not conducive to the creation of self-control. A problem with this study is that Pratt et al. (2004) did not examine the link between parental management, self-control, and offending—they stopped at self-control. Therefore the research could not speak of the entire structure of self-control theory.

Higgins and Ricketts (2005) examined race as an independent measure when assessing self-control and offending. Using Gang Resistance Education and Training (GREAT) data, with a sample of 5,935 eighth graders, to conduct a multiple group analysis they found that although self-control did predict offending for whites, it did not account for the offending of blacks. This study like all of the others which examined race did not include a measure of parental management; therefore, they concluded partial support for self-control theory, by showing that the link between self-control and offending was present although only for whites and not for blacks.

Hay and Forrest (2008) included race as a control measure, when examining self-control and offending. Their findings remained consistent with other research that self-control is a reliable predictor of offending, however their results that mentioned race were only in their preliminary results. According to

these results there may be a difference in blacks and whites when it comes to unsupervised time away from home, time with peers and adult absence. However, although the statistics showed a significant difference amongst blacks and whites, the researchers did not test this idea any further. The study also did not account for the structure of self-control theory by including all concepts of self-control theory (parental management, self-control, and offending). Although once again, this study as well did not account for parental management, eliminating the possibility to test the structure of self-control theory with race as Gottfredson and Hirschi (1990) argued.

These studies show that race has been included in studies of self-control and offending. However, none of these studies examine the entire structure of self-control theory (parental management→self-control→offending). The above studies show that researchers have also failed to examine whether self-control theory can explain racial disparities in offending. These studies provide partial support for self-control theory. Full support cannot be given due to the fact the entire structure of the theory has not been tested using race. Therefore, more research is necessary in this area.

Peer Association and Self-Control

Before any study on self-control can be performed, delinquent peer association and its effects must be considered. According to Gottfredson and Hirschi (1990), individuals with low self-control make bad friends. Those with low

self-control will come together to create peer groups that have low self-control.

Therefore, peers will not affect one's self-control level.

Research to support the theory that low self-control is the only predictor of crime and offending has been scarce (Meldrum, 2008; Pratt & Cullen, 2000). Consistently, researchers have shown that delinquent peer association is a necessary measure to include in tests of self-control theory (Baron, 2004; Burton, Cullen, Evans, & Dunaway 1994; Burton et al., 1998; Evans, Cullen, Burton, Dunaway, & Benson, 1997; Perrone et al., 2004; Pratt & Cullen, 2000). These researchers have argued that concepts of self-control theory are not able to account for the connection between delinquent peer association and offending. In other words, when low self-control has a link with offending, delinquent peer association does as well.

Overall, the empirical literature provides evidence about Gottfredson and Hirschi's (1990) self-control theory. The literature shows that empirical validity does exist in the connection between self-control and offending. In addition, the overall structure of self-control theory (i.e., parental management --> self-control->offending) has support as well. Further, the literature shows that fewer researchers have examined the role of race in structure of self-control theory to explain racial disparities in offending. Those that have done this have only shown partial support for the structure of self-control theory in the context of explaining the racial disparities in offending; thus, leaving a gap in the literature. Finally, the literature shows that delinquent peer association is important to include in tests of self-control theory.

The Present Study

The purpose of the present study is to fill a gap in the self-control theory literature. Specifically, this study examines the racial disparities in the structure of self-control theory; thus, this study examines the following expectations that come from the theory and the literature. First, consistent with previous research (Felson, et al., 2009; Hawkins et al., 2000; Sampson & Laub, 1994; Williams, et al., 2007; Windsor & Negi, 2009) this author expects to find disparities in offending. Second, Gottfredson and Hirschi (1990) argued that racial differences would exist in parental management, self-control, and offending. Third, to avoid misspecifying the empirical models (Evans et al., 1997; Pratt & Cullen, 2000), peer pressure will have a direct link with offending. These expectations will be tested using the National Longitudinal Survey of Youth (NLSY) and structural equation modeling (SEM).

This study is important for two reasons. First, the study attempts to account for racial differences in the measures of self-control theory and offending. Second, the results of this study may be used to justify developing policy implications to improve parental management, self-control, and potentially reduce instances of offending.

CHAPTER IV

METHODS

Below the methods of the current study are presented. Sampling and procedures, measures, and the analysis plan are introduced.

Sampling and Procedures

The present study used data from the National Longitudinal Survey of Youth (NLSY79)¹. This study began in 1979 and is sponsored by the Bureau of Labor Statistics. The study is conducted by the Center for Human Resource Research at The Ohio State University. The Center for Human Resource Research contracted with the National Opinion Research Center at the University of Chicago conducted all interviews for the study. The data was collected using semi-structured interviews. An interviewer asked all questions and the respondent was asked to respond with a particular set of answers, depending on the question, giving their responses to the interviewer, who entered them into the

¹ This particular study utilizes secondary data (data not collected for the purpose of this study). There are advantages to this form of analysis (Babbie, 2002). For one, cost is reduced by not having to conduct surveys or interviews. It also allows researchers to gain nationally representative samples much more quickly because the data has already been collected. Cons to secondary analysis exist as well that must be mentioned. The largest problem with secondary data analysis is that the data were not originally collected to answer the specific research question the researcher is trying to answer (Agresti & Finlay, 2006). However, statistical tests allow researchers to analyze how valid measures are for a variable, as is with the NLSY.

data set. This is different from a qualitative interview because there are set questions with particular answers, rather than open-ended responses (Dantzker & Hunter, 2009). All participants were interviewed annually beginning in 1979 on various items that included financial, community, and personal experiences. In 1986, the Center for Human Resource Research began the interviews about the children of females of the original 1979 cohort. In 1995, children who were aged 15 years or older were assessed through their own self-reports including attitudinal and behavioral questions. The data also included criminal backgrounds and deviant acts that the adolescents reported to the interviewer.

The original nationally representative sample consisted of 12,686 men and women, who were all between the ages of 14-22 in 1979 (Bureau of Labor Statistics, 2009). In 1986, the women within the original cohort began answering extensive questions about their children, referred to as the Children of the NLSY79. These children began answering self-report surveys as well in 1995 or once they had reached fifteen years of age. Due to the fact women in the original cohort may have had children at any time, the sample size of children fluctuated throughout the years. In the initial year of survey for children, 1986, the sample size was 5,255 and in 2002 that sample had grown to 7,467. As of 2002, 1,625 of the sample were Hispanic, 2,412 were Black and 3,430 were Non-Black and Non-Hispanic.

For this study, one specific cohort was chosen from the nationally representative sample. Using all children born to mothers of the original 1979 cohort who were born between the years of 1988-1990 a sample of 1700 was

extracted. This new sample remains generalizable and nationally representative for two reasons. The sample is a systematic random sample. The sample consists of all races and genders from participants across the country. Children born between 1988-1990 were chosen to include measures of self-control theory that were imperative to the study because the same measures were not taken every year of the NLSY79.

The NLSY79 has been used for many different research interests that differ from the original idea of labor statistics. For the purpose of this study, the NLSY79 has been used multiple times to examine self-control theory (Beaver, Wright, DeLisi, & Vaughn, 2008; Chapple, 2005; Chapple & Hope, 2003; Hay, 2001; Hay & Forrest, 2008; Higgins et al., in press; Nofziger, 2008; Pratt, et al., 2004; Turner & Piquero, 2002; Wright & Cullen, 2001).

Missing Data

All longitudinal studies have problems with missing data. Missing data causes estimation issues. This is of particular importance when those individuals missing responses are systematically different than those without missing responses (Brame & Piquero, 2003). To handle the problem of missing data full information maximum likelihood, FIML², was employed. FIML allows researchers the ability to reduce the bias presented by missing data when using structural equation modeling (Allison, 2003; Enders 2001).

² FIML stops the iteration process than restarts it, searching for the perfect parameters for the missing data. Once found these new parameters are plugged in. FIML has been shown empirically to not introduce a bias (Enders, 2001).

Measures

Self-Control. The measure of self-control was a behavioral scale of 11 items from Nofziger (2008). Theoretically, the items capture behavioral measures, as Hirschi and Gottfredson (1993) and Gottfredson (2006) argue should be used with this age group. The self-control items were observed items reported by the mother. The mothers were asked to rate their child's sudden change in mood, difficulty concentrating, impulsivity, and other measures (see Appendix A for complete list of measures used to complete this scale) these measures were all part of the Behavioral Problems Index. Each measure was on a 3 point Likert-type scale: 1=often true, 2=somewhat true, and 3=not at all true. These items were then recoded so that higher responses would reflect higher levels of low self-control (1=not true at all, 2=somewhat true, and 3=often true). All of these measures were taken in 1998, when the children were 8-10 years old.

Offending. A participation index was created to create the offending measure. This scale was consistent with other studies (Turner & Piquero, 2002). The participation index included 9 items from a self-report survey, of the children of the original cohort. Once children turned fifteen they began completing this portion of the survey (Bureau of Labor Statistics, 2009). The items included in the participation index for offending asked the youths how many times they had committed a specific act in the past year (i.e., stayed out past curfew, hurt someone bad enough to need a doctor) these items were coded 1=never, 2=once, 3=twice, and 4=more than twice (see Appendix A for a complete list of items used to create these observed measures). These items were then recoded

to 0=never, 1=at least once. These items were then combined into four separate measures, (i.e., property, violent, and status offenses and alcohol use) based on types of crime.. alcohol offenses had a range of 0-1, violent offenses had a range of 0-1, property offenses had a range of 0-2, and finally status offenses had a range of 0-5. For each of the measures, higher scores indicate more participation in the activity. In 2006, all of this data was collected when the individuals were 16-18 years old.

Parental management. The parental management measures in this study came from Nofziger (2008). Parental management examined several aspects of the parenting process: monitoring, discipline, privileges and an added scale of expectations that also examined supervision. Here, two of the concepts of parental management will be used--monitoring and discipline. To capture these concepts, four measures will be used. Both supervision and expectations are to examine monitoring and punishment and privileges both to examine discipline within this data (Nofziger, 2008). This study measured parental management in 1996, when the children in the sample were 6-8 years old. All parental management responses were taken from the mother supplement of the data in 1996. This particular time period is chosen because it is when Gottfredson and Hirschi (1990) believe children are still impressionable and self-control levels have not yet been determined.

The current study used a dichotomous measure of monitoring from the question "When your family watches TV together, do you or your child's father (stepfather or father figure) discuss the TV programs with him or her?", this was

recoded 1=yes, 0=no. This gives the monitoring measure a range of 0-1. Higher scores reflect more monitoring.

Also, to investigate further into monitoring, parents were asked how often their child is expected to: make his or her own bed, clean his or her own room, clean up after spills, and pick up after him or herself. They were asked to respond 1-5 (1=almost never, 2=less than ½ the time, 3= ½ the time, 4=more than ½ the time, and 5= almost always). These responses were then added together to create an additive scale of expectations. That gave a range of 4-20 for the expectations measure. Higher scores mean higher expectations as a child.

To examine discipline, parents were given the following question: “Sometimes children get so angry with their parents they say things like ‘I hate you’ or swear in a temper. Which action(s) would you take if this happened?” The responses included: talking, spanking, ignoring, or taking away specific privileges (for a complete list see Appendix A). The parents answered yes or no and the responses were then coded 1=yes, 0=no. The privilege measures were combined to create a participation index of 6 items. The range of responses for the privilege measure was 0-6. Higher scores mean that the child had more privileges taken away for misbehavior.

Peer Pressure. A measure of peer pressure, also used by Patterson and Stouthamer-Loeber (1984); Crockett, Raffaelli, and Shen (2006); and Lahey, Van Hulle, D’Onofrio, Rodgers, and Waldman (2008) was also included in the study to

assess its relationship to deviance and self-control. These measures were taken in 2006, at the same time as the offending measures when the individuals were 16-18 years old³. This measure was created from five questions from the youth self-report questionnaire. The question asked the youth to report yes or no to whether they felt pressured to try cigarettes, try drugs, drink alcohol, skip school, and/or to commit a crime. Their responses were coded 1=yes, 0=no and combined to create a peer pressure measure. The range of the peer pressure measure responses was 0-5. Higher scores reflect more peer pressure.

Race. Finally, race was included not as a control measure. Instead, race was included as an independent variable central to the study. Gottfredson and Hirschi (1990) argued there should be racial differences in parental management, self-control, and offending. To measure, race one item was used. The item was coded 1=black and 0=non-black.

Analysis Plan

The first step of this analysis is to examine the descriptive statistics for each measure. The mean is presented first. The mean is the average score for that particular measure (Hinton, 1995). The mean allows examination of where the responses are concentrated within the sample. Means are capable of being used with any level of data, nominal, ordinal, ratio or interval (Sirkin, 2006). It should also be noted that extreme outliers can affect the results of the mean.

³ Peer pressure measures were taken when the respondents were 16-18 years old. By taking the measures from a different year than self-control a casual model is created, essentially making it impossible that this particular peer measure effect the measure of self-control. However, by taking it in the same wave as offending a direct link can be made between peer pressure and offending, still consistent with Gottfredson and Hirschi (1990).

The standard deviations for each measure are presented next. The distributions of the measures are important to understanding the normalcy of the data. The standard deviation is simply the square root of the variance of the particular measure (Dietz & Kalof, 2009). This measure shows the dispersion of the measure(s). The standard deviation also relates everything to the mean, allowing a better understanding of a particular response location compared to the general consensus of the sample (Proctor & Badzinski, 2002). Also, like the mean, extreme outliers can affect the standard deviation of a distribution. Standard deviations are meant for interval level data and above.

Skewness is a measurement of the symmetry, or lack of symmetry of a distribution (Proctor & Badzinski, 2002). If the data are evenly distributed and normal the skewness will be equal to zero and distributions will resemble a bell curve. Negative skewness will indicate data that is skewed to the left, and a positive skewness will indicate the data is skewed to the right (Allan & Skinner, 1991). It is important to present the skewness of the distribution in order to see how normal the distribution is.

Kurtosis points out any peaks or flatness of a distribution (Proctor & Badzinski, 2002). Like skewness, a normal distribution will have a kurtosis statistics around 0. Flat distributions are referred to as platykurtic, peaked curves are referred to as leptokurtic (Agresti & Finlay, 2006). This, like skewness, is important to determine the normality of the distribution.

The second step of the analysis is the t-test. The t-test is important to this particular analysis because it is comparing two separate populations. The t-test gives researchers the ability to compare the means of two separate groups and determine if they are significantly different from one another (Welkowitz, Cohen, & Ewen, 2010). This is important to this study to be able to compare blacks and non-blacks and find a significant difference in the individual items of parental management, self-control, and offending from one another. This test is important in testing the expectations of this study that there will be a significant difference in offending, parental management, and self-control among blacks and non-blacks. If the t-statistic is positive, the first mean is larger than the second. If the t-statistic is negative, the first mean is smaller than the second. When the t-statistic is greater than 2, whether positive or negative, there is statistical significance between the groups (Welkowitz, Cohen, & Ewen, 2010).

The third step is a presentation of the correlations. Correlations measure both the direction as well as strength of the relationship between two measures (Kolenikov, Steinley, & Thombs, 2009). Correlation coefficients will range from -1 to 1 (Kolenikov, Steinley, & Thombs, 2009). Correlation coefficients that equal -1 show a perfect negative correlation, and those that equal 1 are a perfect positive correlation. Those correlations with a coefficient of 0 are considered to be unrelated. Bivariate correlations assume that all data is interval or ratio data. However, for the purposes of this analysis, tetrachoric correlations were employed because of the dichotomous measures (Kolenikov, Steinley, & Thombs, 2009). For correlations to be significant the p-value must be below .05.

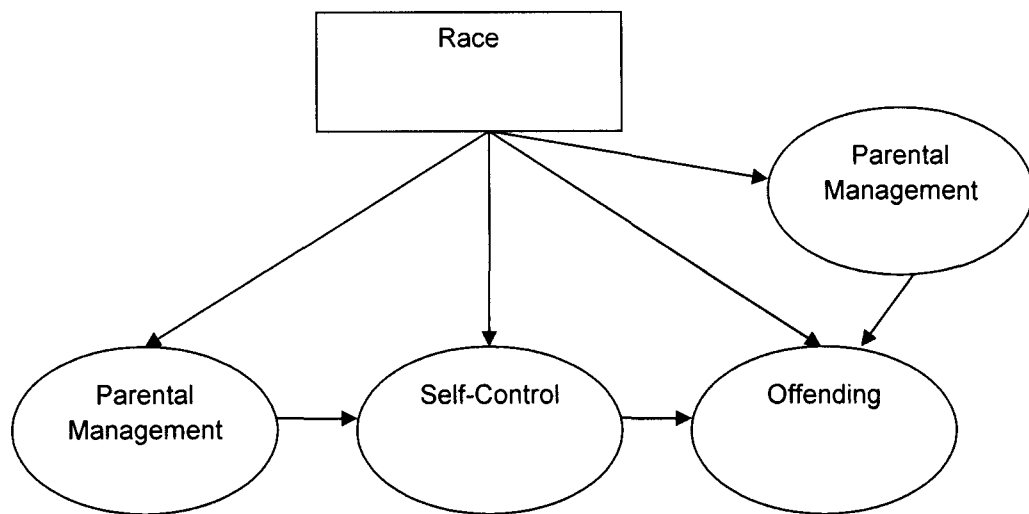
When moderate correlation levels (i.e., approximately=0.20) are found, more research is warranted to explain the correlations. The analysis now turns to the components of structural equation modeling.

The fourth and fifth steps are a presentation of the structural equation modeling process to address the expectations of the study, beginning with the measurement model. Structural equation modeling (SEM) is a theory-driven process. Therefore, the latent measures and the observed measures being assessed are consistent with previous literature. SEM allows us to test a theory and the links between the observed and latent measures as specified by the theory. SEM also allows researchers to use latent, rather than only observed measures. The use of latent measures adds a whole new dimension to research possibilities, especially when it comes to theory testing, as in the current study. This is because all measures cannot be observed by an individual, such as self-control, but rather the observation of other items, in this particular case the characteristics of self-control (i.e. impulsivity, risk-taking) may account for the latent measure, in this case, self-control. Unique to SEM is the ability to include observed measures, to create latent measures. The model introduced should be central to the theory, see Figure 1 for a model of self-control theory. This particular analysis could have compared blacks and non-blacks using a multiple group comparison. However, this was not chosen due to its controversy within SEM literature⁴ (Meade & Bauer, 2007). This particular analysis utilized Muthen's (1989)

⁴ Meade and Bauer (2007) argue that for stability in using a multiple group comparison not only will a large sample size be a necessity but a large number of indicators as well. Very little empirical support has been shown that has helped determine the factors used within multiple group comparisons.

Multiple Indication Multiple Cause (MIMIC) model. This allows the use of a dummy variable to compare the sample as a whole. The null hypothesis that the means are the same for each group is tested. Those beta weights within the final structural model from the dummy variable being tested will show those items that have a significant difference in means between the two groups.

Figure 1: Model of Self-Control Theory



The SEM process begins with the measurement model, which utilizes factor analysis. Two types of factor analysis exist: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Exploratory factor analysis is most often used in social science research. When using this form of factor analysis, the researcher is not aware how many measures may indicate a latent measure; thus, this form of factor analysis is atheoretical (Kim & Mueller, 1978; Maruyama, 1998; Skrondal & Rabe-Hesketh, 2004). In other words, exploratory factor analysis is simply searching for the factors that will lead to the latent measure being investigated (Kim & Mueller, 1978). A factor

is technically a combination of two or more measures (Stevens, 1986). However, as is the case in this study, the researcher is aware of the links between the observed measures and the latent measures based on self-control theory. Therefore, confirmatory factor analysis is used. CFA is part of structural equation modeling and is sometimes referred to as the measurement model. This study utilizes confirmatory factor analysis as well as Mplus Version 5.2 Software to complete the SEM.

The estimation of the CFA yields a substantial amount of information. First, the factor loadings in the measurement model are produced. Kline (2005) argued that these factor loadings should be 0.50 and above to indicate strong factor loadings. Second, fit statistics help determine if the model fits the data (Kline, 2005). A number of fit statistics are often used to make this determination: chi-square, comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean residual (SRMR). The chi-square measures the likelihood that the relationship between the independent and dependent measure is simply by chance (Heck, 2001). For the purposes of SEM, an insignificant chi-square is needed, normally a large sample size would make chi-square insignificant (Heck, 2001). However, if a chi-square is found to be significant more fit statistics should be found. The CFI measures the lack of fit between the observed covariance and the theoretical covariance matrices (Kelloway, 1998). The RMSEA examines the parsimonious fit of the model; a RMSEA of less than .05 will equal adequate fit (Maruyama, 1997). Next, the SRMR examines the difference between the observed covariance and the

theoretical covariance; this requires a statistic of less than .08, to show good model fit (Kline, 2005). The fit statistics are important in testing the fit of the model to the data, when all fit statistics are significant, except for chi-square the model can be considering “good-fitting” (Bollen & Long, 1993).

The fifth step in the analysis occurs once the CFA has been shown to have adequate fit with data and the factor loadings have been estimated. This step is the presentation of the full structural model. This model estimates the links between the measures as in Figure 1. In addition, the standardized estimates between the connections of the latent measures and the fit statistics are also presented.

SEM may be used with categorical or dichotomous measures. A tetrachoric correlation is simply a correlation between two observed measures that have been measured as a dichotomous measure (Bonett & Price, 2005). To complete the CFA as well as SEM, tetrachoric correlations were necessary in order to generate a SEM with dichotomous measures for this thesis. Tetrachoric correlations can be interpreted the same as a Pearson correlation, with those correlations approaching 1/-1 representing a stronger correlation (Uebersax, 2006). Mplus 5.2 was employed to enter tetrachoric correlations to create the SEM. Finney and Distefano (2006) recommend the use of weighted least square, WLS, as a robust estimator under these circumstances (i.e., using tetrachoric correlations). WLS allows for weighted least squares estimates--mean, variance, adjusted chi-square and scaled standard errors. This will change the standard root mean square residual (SRMR) to a weighted root square mean residual

(WRMR) that is appropriate for non-normal continuous data (Muthen & Muthen, 2002).

CHAPTER VI

RESULTS

The analysis of this data took place in steps. First, descriptive statistics are discussed for all measures. Second, a t-test is presented to show the significant differences in means between blacks and non-blacks in the data for all measures. Third, correlations are presented for all measures. Fourth, the measurement model was tested. Fifth, the structural model of the theory is presented.

Step 1: Descriptive Statistics

This study is meant to examine the differences between blacks and non-blacks, specifically differences in parental management, self-control, and offending. Table 1 presents all of the measures for the entire sample, with mean and standard deviation. To present the descriptive statistics for each observed measure, they have been presented by latent measure. Both skewness and kurtosis should be as close to one as possible to present a normal data distribution. However, this analysis will use structural equal modeling and according to Kline (2010) only a skew of greater than three and a kurtosis of greater than 20 will become problematic. Therefore these statistics are not

discussed because although some may resemble a non-normal distribution all are acceptable to be used in structural equation modeling.

TABLE 1: DESCRIPTIVE STATISTICS

Latent Measure	Measure	Mean	Std. Deviation	Range	Skewness	Kurtosis
Parental Management	Monitor	0.86	0.35	0-1	-1.94	2.29
	Spank	0.17	0.38	0-1	1.75	1.07
	Talk	0.48	0.50	0-1	0.09	-2.00
	Ignore	0.05	0.23	0-1	0.06	13.58
	Expectations	15.62	3.79	4-20	-0.63	-0.39
	Privileges	0.91	1.30	0-6	1.48	1.62
Self-Control	Mood	1.71	0.64	1-3	0.34	-0.69
	Argues	1.73	0.66	1-3	0.36	-0.78
	DifCon	1.49	0.65	1-3	0.99	-0.15
	DisOb	1.59	0.58	1-3	0.36	-0.75
	NotSorry	1.38	0.61	1-3	1.39	0.82
	Impulsive	1.51	0.59	1-3	0.69	-0.49
	Restless	1.45	0.63	1-3	1.09	0.10
	Stubborn	1.45	0.58	1-3	0.85	-0.27
	Temper	1.41	0.58	1-3	1.10	0.22
	Breaks	1.12	0.36	1-3	3.12	9.67
	Attention	1.52	0.64	1-3	0.84	-0.35
Peer Pressure	Pres_Cig	0.08	0.27	0-1	3.08	7.49
	Pres_Drugs	0.09	0.29	0-1	2.87	6.22
	Pres_Alcoh	0.17	0.37	0-1	1.80	1.25
	Pres_SkipS	0.14	0.34	0-1	2.13	2.53
	Pres_Crime	0.05	0.22	0-1	4.17	15.41
Offending	Alcohol	0.26	0.44	0-1	1.08	-0.84
	Property	0.16	0.44	0-2	2.75	7.02
	Violent	0.13	0.33	0-1	2.22	2.95
	Status	1.68	1.37	0-5	0.58	-0.43

Some of the parental management measures were dichotomous, except for expectations and privileges. The average response for monitoring was 0.86. Therefore, 86 percent of the sample said they discussed television programs with their children. The standard deviation for monitoring was 0.35. The average response for spank was 0.17, once again dichotomous; therefore, 17 percent of parent's response to a tantrum was spanking their child. The standard deviation was 0.38. The mean response to talk was 0.48, 48 percent of the sample responded to a tantrum by talking with their child. The standard deviation was 0.50. The average response to ignore was 0.05. Therefore, only 5 percent of respondents responded to a tantrum by their child, simply by ignoring it. The standard deviation was 0.23. The mean response of the expectations measure, that once constructed was a 20 point likert-type scale, with a scale of 4-20. Lower responses signaled parents had less expectations of the child, and higher responses meant very high expectations from the parents. The average response was 15.62, meaning parents generally had high expectations of their children within this sample. The standard deviation was 3.79. Privilege was a participation index created for response to a tantrum being taking away privileges. This was based off of six items, each dichotomous, making the scale of responses 0-6. A zero responses stated the parents took away no privileges for a tantrum, while a 6 meant the parents took away all privileges mentioned in the survey. The average response was 0.91, stating parents within this survey took away close to one privilege for a tantrum. The standard deviation was 1.30. Due to the non-normality of the parental management measures, they could be

transformed. However, transforming (e.g., square root, logarithm, reciprocal) the measure will distort the meaning of the actual measure therefore the measures are left alone to keep the meaning of the measure intact.

Eleven items were used as observed measures of self-control. Each item was answered on a 3-point likert-type scale. All of the measures mean responses were between 1.12 and 1.73. All 11 items were not presented in detail as parental management measures because the self-control measures were normal and shared common means (see Table 1 for a complete listing of the measures, means, standard deviations, skewness and kurtosis).

Peer pressure like the parental management measures was also dichotomous. Pressure to try cigarettes yielded an average response of 0.08 that means only 8 percent of the youth felt pressure from their friends to smoke cigarettes. The standard deviation was 0.27. Pressure to do drugs also had a very low average response, the mean was 0.09, and therefore only 9 percent of the sample felt pressured to try drugs. The standard deviation was 0.29. Pressure to drink alcohol was slightly higher, with an average response of 0.17, or 17 percent of the sample saying they felt pressured to drink alcohol. The standard deviation was .37. Pressure to skip school yielded an average response of 0.14, 14 percent of the sample felt pressured by friends to skip school. The standard deviation was .34. Pressure to commit crimes was the lowest mean response, with 0.05, or 5 percent of the sample feeling pressured. The standard deviation was 0.22. Like the parental management measures, the peer pressure

measures could have also been transformed. To retain the meaning of the measure, they were not transformed.

Offending descriptive statistics were presented next. Alcohol crimes were made up of one dichotomous (after recoding) measure: been drunk in the past year. There was an average response of 0.26 that means just over one fourth of the sample had been drunk at least once in the past year. Standard deviation was 0.44. Property crime was made up of two items that included: damaged school property, and stolen something that makes the responses 0-2. The average response was 0.16 that means most respondents did not commit either crime. Standard deviation was 0.44. Violent offenses were also dichotomous (after recoding) and included the response to one item: hurt someone bad enough to need a doctor. The mean response was 0.13, so around 13 percent of the sample had at least one time hurt someone else. The standard deviation was 0.33. However, it is important to note both violent crime and alcohol crime was dichotomous. Finally, status offenses was made up of five items: stayed out past curfew, parents brought to school because of bad behavior, skipped school, stayed out late without parents' permission, and lied to parents. This gives a scale of 0-5. The average response was 1.68 that means the respondents on average committed almost two of these acts. The standard deviation was 1.37.

Step 2: t-tests

Table 2 presents the differences for all the measures organized by race. The expectation in this thesis is that there will be differences in all the measures

of self-control theory between races. According to this table, the t-statistic shows a significant difference in means for all measures of parental management except “ignore”. The significant difference in parental management between races is consistent with Gottfredson and Hirschi’s (1990) self-control theory and the expectations of this thesis.⁵ Therefore, the differences are preliminary and further analysis is necessary.

⁵The t-test was used here, even though it is a violation of the assumptions of interval level data for the dependant variable. The key here is that it is a difference in the proportions. This is meant to provide preliminary evidence and not be the final assessment.

TABLE 2: T-TESTS

Latent Measure	Measure	Black		Non-Black		t
		Mean	Std. Deviation	Mean	Std. Deviation	
Parental Management	Monitor	0.77	0.42	0.90	0.31	-5.37*
	Spank	0.31	0.46	0.12	0.33	9.03*
	Talk	0.56	0.50	0.45	0.50	3.08*
	Ignore	0.04	0.19	0.06	0.24	-1.36
	Expectations	16.08	3.99	15.44	3.69	2.35*
	Privileges	1.05	1.41	0.86	1.26	2.55*
Self-Control	Mood	1.76	0.65	1.69	0.63	1.77
	Argues	1.67	0.67	1.76	0.66	-2.19*
	DifCon	1.56	0.67	1.46	0.64	2.48*
	DisOb	1.58	0.59	1.60	0.57	-0.54
	NotSorry	1.45	0.66	1.34	0.58	2.82*
	Impulsive	1.52	0.60	1.51	0.59	0.45
	Restless	1.54	0.66	1.41	0.61	3.45*
	Stubborn	1.45	0.60	1.45	0.57	-0.09
	Temper	1.41	0.58	1.40	0.58	0.22
	Breaks	1.15	0.43	1.11	0.33	2.04*
	Attention	1.59	0.67	1.49	0.62	2.46*
Peer Pressure	Pres_Cig	0.07	0.25	0.09	0.28	-1.24
	Pres_Drugs	0.07	0.25	0.10	0.30	-1.70
	Pres_Alcoh	0.07	0.26	0.21	0.41	-5.84*
	Pres_SkipS	0.12	0.32	0.35	0.32	-1.12
	Pres_Crime	0.05	0.22	0.05	0.22	0.05
Offending	Alcohol	0.16	0.37	0.31	0.46	-5.00*
	Property	0.18	0.45	0.15	0.43	0.99
	Violent	0.15	0.36	0.12	0.32	1.55
	Status	1.74	1.41	1.66	1.35	0.91

According to Gottfredson and Hirschi (1990) and expected in this study, the self-control measures would be different for blacks and non-blacks. Of the 11 measures, sudden changes in mood ($t=1.77$), disobedience at home ($t=-0.54$), impulsivity ($t=0.45$), stubbornness ($t=-0.09$) and strong temper ($t=0.22$) do not show a statistical significance between races. However, the other 6 measures do

show a significant difference according to the t-statistic. Between blacks and non-blacks, argues too much ($t=-2.19$, $p<.05$), difficulty concentrating ($t=2.48$, $p<.05$), not sorry after misbehaving ($t=2.81$, $p<.01$), restlessness ($t=3.45$, $p<.01$), breaks things on purpose ($t=2.04$, $p<.05$), and demands too much attention ($t=2.46$, $p<.05$) have means that are significantly different from one another. This supports the expectation that there will be a significant difference in self-control among races. These results are consistent with previous research that found differences in self-control levels for blacks and non-blacks (Hay, 2001; Longshore et al., 1996; Longshore, 1998; Longshore & Turner, 1998; Lynskey-Peterson, et al., 2000; Pratt, et al., 2004).

Peer pressure measures were examined next in the t-test. Of the five measures of negative peer pressure, only the pressure to drink alcohol ($t=-5.84$, $p<.00$) was significantly different between blacks and non-blacks. The other four measures, pressure to smoke cigarettes ($t=-1.24$), pressure to try drugs ($t=-1.70$), pressure to skip school ($t=-1.12$), and pressure to commit a crime ($t=0.05$), showed no significance. This shows that among the two races, non-blacks seem to be affected more by peer pressure for alcohol use than blacks, however no other significant differences among peer pressure measures exist in this data between blacks and non-blacks. However, like the parental management measurements, peer pressure measures were also dichotomous. Therefore further analysis must be conducted.

Gottfredson and Hirschi (1990) as well as this author expected that there would be racial differences in offending. Of the four offending measures, only one

was found to be significantly different between blacks and non-blacks. Property offenses ($t=0.99$), status offenses ($t=0.91$), as well as violent offenses ($t=1.55$) showed no difference between means. However, alcohol use ($t=-5.00$, $p<.00$) did show significant difference from blacks and non-blacks that is consistent with previous research (Felson et al., 2008; Hawkins et al., 2000; Higgins & Ricketts, 2005; Pratt, et al., 2004; Sampson et al., 2002; Sampson & Laub, 1994). Overall, the t-test presents mixed findings that there are differences between blacks and non-blacks in these data.

Step 3: Correlations

Correlations were performed to examine the amount of shared variance between all the measures in the study (to see a complete correlation matrix see Table 3). Mplus version 5.2 was employed to run the correlations for each measure because tetrachoric correlations were necessary to account for all dichotomous measures, tetrachoric correlations are important because they allow for a distribution more suitable for dichotomous measures. In all, 11 dichotomous measures were used in the final analysis. They included parental monitoring, responding to a tantrum with spanking, responding to a tantrum by talking, responding to a tantrum by ignoring, pressure to try cigarettes, pressure to try drugs, pressure to drink alcohol, pressure to skip school, pressure to commit a crime, violence, and drugs or alcohol. Some of the correlation coefficients may seem like multicollinearity. However, since these measures will be used to create the same latent measure in structural equation modeling, high correlation coefficients are wanted.

Table 3: Tetrachoric Correlation Matrix

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1.Monitor	1.00																											
2.Spank	0.51	1.00																										
3.Talk	0.90	0.60	1.00																									
4.Ignore	0.48	0.24	0.46	1.00																								
5.Mood	0.49	0.36	0.45	0.29	1.00																							
6.Argue	0.50	0.36	0.48	0.31	0.80	1.00																						
7.DifCon	0.43	0.33	0.42	0.25	0.74	0.77	1.00																					
8.Dis	0.46	0.39	0.47	0.30	0.78	0.83	0.76	1.00																				
9.NotSorry	0.45	0.34	0.45	0.22	0.70	0.71	0.69	0.74	1.00																			
10.Impulsive	0.47	0.35	0.46	0.28	0.76	0.78	0.80	0.80	0.73	1.00																		
11.Restless	0.44	0.34	0.43	0.26	0.74	0.75	0.82	0.74	0.71	0.82	1.00																	
12.Stubborn	0.44	0.32	0.42	0.22	0.80	0.81	0.74	0.81	0.73	0.78	0.76	1.00																
13.Temper	0.46	0.35	0.44	0.28	0.80	0.81	0.75	0.80	0.72	0.79	0.76	0.82	1.00															
14.Breaks	0.47	0.34	0.48	0.27	0.77	0.76	0.76	0.79	0.75	0.78	0.75	0.77	0.79	1.00														
15.Attention	0.42	0.32	0.40	0.29	0.76	0.77	0.74	0.77	0.68	0.76	0.75	0.74	0.76	0.78	1.00													
16.Pcig	0.18	0.12	0.25	0.08	0.27	0.23	0.26	0.25	0.21	0.26	0.25	0.25	0.25	0.25	0.22	1.00												
17.Pdrug	0.20	0.11	0.27	0.08	0.25	0.21	0.22	0.24	0.20	0.26	0.21	0.20	0.25	0.25	0.29	0.83	1.00											
18.Pdrink	0.30	0.06	0.32	0.19	0.22	0.24	0.23	0.23	0.16	0.26	0.19	0.20	0.24	0.23	0.25	0.76	0.82	1.00										
19.Pskip	0.23	0.03	0.23	0.01	0.19	0.21	0.18	0.22	0.15	0.23	0.16	0.21	0.20	0.17	0.21	0.58	0.69	0.66	1.00									
20.Pcrim	0.19	0.23	0.25	0.16	0.38	0.30	0.30	0.33	0.28	0.33	0.28	0.30	0.37	0.32	0.31	0.56	0.74	0.60	0.69	1.00								
21.Black	0.05	0.27	0.12	-0.09	0.17	0.11	0.17	0.13	0.18	0.15	0.19	0.14	0.14	0.17	0.18	0.00	-0.02	-0.18	0.03	0.06	1.00							
22.Expectations	0.80	0.56	0.78	0.39	0.44	0.44	0.40	0.44	0.41	0.43	0.40	0.40	0.41	0.44	0.39	0.16	0.19	0.26	0.18	0.26	0.13	1.00						
23.Privileges	0.57	0.48	0.74	0.25	0.33	0.35	0.32	0.33	0.30	0.32	0.31	0.31	0.32	0.30	0.30	0.11	0.11	0.11	0.11	0.22	0.06	0.56	1.00					
24.Status	0.24	0.13	0.24	0.04	0.29	0.31	0.28	0.31	0.28	0.29	0.29	0.28	0.27	0.30	0.30	0.39	0.38	0.37	0.46	0.33	0.12	0.21	0.14	1.00				
25.Violence	0.17	0.08	0.17	-0.01	0.18	0.20	0.22	0.26	0.23	0.26	0.23	0.17	0.21	0.22	0.21	0.32	0.36	0.30	0.44	0.45	0.13	0.14	0.09	0.49	1.00			
26.Alcohol	0.31	0.13	0.33	0.25	0.26	0.31	0.25	0.29	0.23	0.26	0.25	0.26	0.26	0.28	0.26	0.47	0.54	0.56	0.45	0.35	-0.09	0.28	0.19	0.57	0.45	1.00		
27.Property	0.10	0.08	0.08	0.05	0.12	0.10	0.12	0.13	0.14	0.12	0.12	0.12	0.10	0.12	0.13	0.20	0.23	0.15	0.18	0.25	0.06	0.08	0.09	0.41	0.28	0.29	1.00	

The correlations among parental management measures are relatively high and positive. Monitoring is closely correlated to all of the parental management measures. Ignoring a tantrum is the least correlated among parental management measures. Having high expectations of one's children is highly correlated with monitoring and spanking consistent with Nofziger (2008) as well as Higgins, Kirchner, Marcum, and Ricketts (in press). All eleven self-control items were positively and highly correlated with one another. This is consistent with self-control theory and well as previous studies. The correlation between all of the measures of self-control shows that all measures work together in some form or fashion, and therefore, they all play a role in offending. Peer pressure measures were also highly correlated and positive with one another, the lowest score being 0.56. Being black was not highly correlated with any of the other measures. It was negatively correlated with ignoring a tantrum, pressure to do drugs, and pressure to drink. These three negative correlations show that non-blacks are more likely than blacks to ignore their children's tantrums, feel pressure to do drugs and feel pressure to drink. There were moderate and positive correlations between all offending measures.

Step 4: Measurement Model

For each latent measure, one of the factor loadings for each set of observed measures was set to one. This provides a scale and helps to identify the model. To identify the model, two components are necessary. To begin, each latent measure must have at least three observed measures to identify it. Second, among each set of observed measures, one covariance must be

manually set to one. From there standardized coefficients are examined to test convergent validity. Standardized coefficients over 0.50 will give convergent validity. After examination all standardized coefficients were over 0.50, except for property crimes.

The measurement model was then tested using confirmatory factor analysis (CFA). Once performed if all fit statistics show proper fit of the data, structural models are ran and assessed. According to the measurement model, the following goodness-of-fit statistics were given: chi-square= 153.10, (df=18 p<0.00); CFI=0.97; RMSEA=0.03; WRMR=0.88 (See Table 4). These goodness-of-fit statistics show that the chi-square that tests the current model against a model with no restrictions is significant. However, the sample size does affect the significance of chi-square (Agresti & Finlay, 1996).

Table 4: Fit Statistics for Measurement Model

Fit Index	Acceptable Fit	Obtained Value
Chi-square	not sig.	153.10, p≤0.00
Comparative Fit Index (CFI)	≥0.95	0.97
Root Mean Square Error of Approximation (RMSEA)	≤.05	0.03
Weighted Root Mean Square Residual (WRMR)	Around 1	0.88

Therefore, due to the sample size and the significance of chi-square more goodness of fit statistics are necessary. The chi-square of 153.10 allows rejection of the null hypothesis that these two models are the same. The CFI, or comparative fit index is on a scale of 0 to 1. The closer to 1, the better the model fit, therefore 0.97 shows very good model fit to the data. The root mean square

error of approximation, RMSEA, should be less than 0.05, in this case the results show a RMSEA of 0.03 that once again shows good model fit to the data. The weighted root mean square error, WRMR was 0.88. All the above measurements showed that the model fit the data well, see Table 5 for a complete view of the measurement model. Overall, the fit to the data was good so further exploration is warranted and a structural model, Mplus version 5.2 was employed for this analysis. The results of the fit statistics show discriminate validity.

Table 5: Measurement Model

Latent Measure	Measure		Factor Loading
Parental Management	MonitorTV	Discuss TV programs with Child	0.93*
	Talk	Respond to tantrum by talking	0.96*
	Spank	Respond to tantrum by spanking	0.66*
	Ignore	Respond to tantrum by ignoring it	0.50*
	Privileges	Respond to tantrum by taking privileges	0.67*
	Expectations	Expectations for child at home	0.86*
Self-Control Peer Pressure	Mood	Child has sudden changes in mood or feeling	0.88*
	Argue	Child argues too much	0.89*
	DifCon	Child has difficulty concentrating, cannot pay attention	0.86*
	DisOb	Child is disobedient at home	0.90*
	NtSorry	Child does not seem to feel sorry after she or he misbehaves	0.82*
	Impulsive	Child is impulsive, or acts without thinking	0.89*
	Restless	Child is restless or overly active, cannot sit still	0.86*
	Stubborn	Child is stubborn, sullen or irritable	0.87*
	Temper	Child has a very strong temper and loses it easily	0.88*
	Breaks	Child breaks things on purpose	0.89*
	Attention	Child demands a lot of attention	0.85*
	PCigs	Pressured to try cigarettes	0.85*
	PDrugs	Pressured to try drugs	0.92*
	PDrink	Pressured to drink alcohol	0.86*
	PSkipSch	Pressured to skip school	0.77*
PCrime	Pressured to commit a crime	0.84*	
Offending	Alcohol	Alcohol offenses in past year	0.76*
	Violent	Violent offense in past year	0.62*
	Property	Property offenses in past year	0.37*
	Status	Status offenses in past year	0.75*

*=P<.01

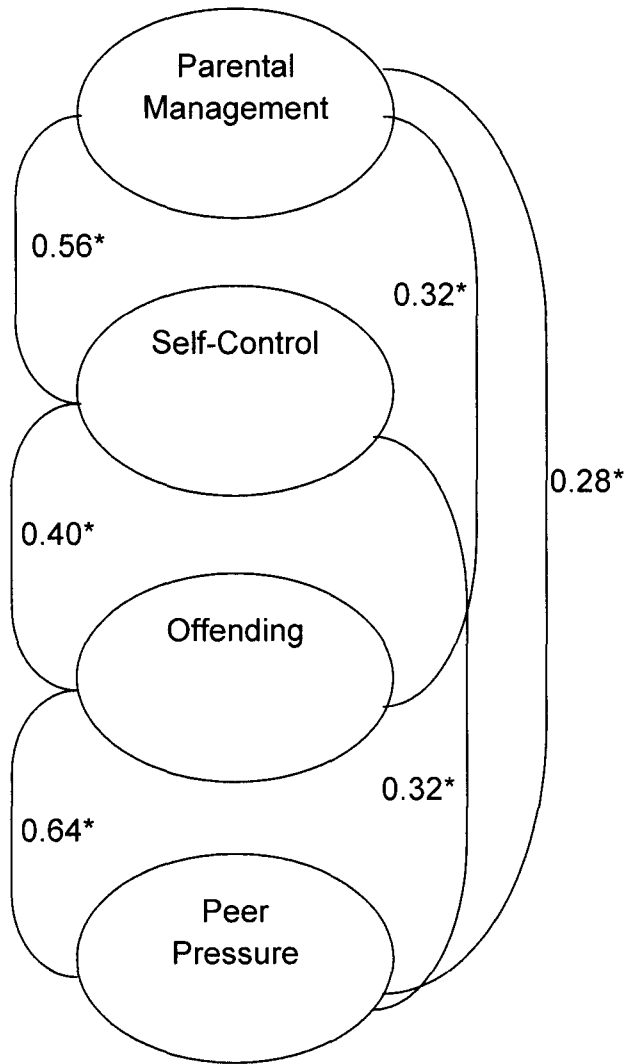
Also within the measurement model were the correlations between latent measures that are included in Table 6. All measures included in the study were significantly correlated to one another in the expected direction. This indicates preliminary support for Gottfredson and Hirschi's (1990) theory, but a structural model is necessary for a complete test of the theory.

TABLE 6: CORRELATIONS OF LATENT MEASURES WITHIN MEASUREMENT MODEL

	Self-Control	Parental M.	Peer Pressure	Offending
Self-Control	1.00			
Parental M.	0.56*	1.00		
Peer Pressure	0.32*	0.28*	1.00	
Offending	0.40*	0.32*	0.64*	1.00

*p≤.05

Figure 2: Visual Model of Latent Measure Correlations



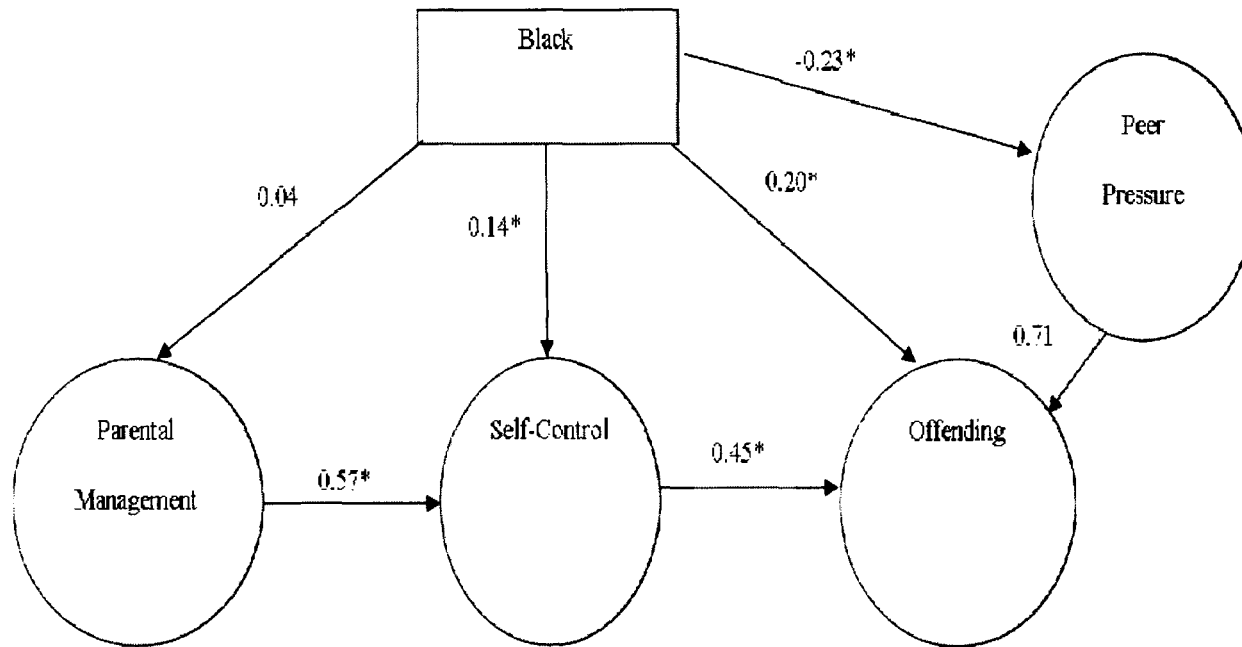
Step 5: Structural Model

Structural equation modeling (SEM) is a statistical technique that explores the sufficiency of a preset theoretical model to explain relationships between observed and latent measures (Kline, 2005). SEM allows the concurrent testing of multiple inferential pathways in cross-sectional data (Byrne, 2001). SEM for the current study was run using the latent measures: parental management, self-control, peer pressure, offending, and race (see Figure 2 for complete model). The following goodness of fit statistics were found (see Table 7).

Table 7: Fit Statistics of SEM

Fit Index	Acceptable Fit	Obtained Value
Chi-square	not sig.	226.16, $p \leq 0.00$
Comparative Fit Index (CFI)	≥ 0.95	0.95
Root Mean Square Error of Approximation (RMSEA)	≤ 0.05	0.04
Weighted Root Mean Square Residual (WRMR)	Around 1	1.11

Figure 3: Final Structural Equation Model



The chi-square of 226.16 ($df=73$, $p \leq 0.00$) is significant. This can be disregarded because once again chi-square is affected by sample size. From there the CFI of 0.95, RMSEA of 0.04, and WRMR of 1.11 all show good fit. Therefore all of the fit statistics show a good fit to the data. From there, the paths may be examined. The path coefficient for parental management to self-control was 0.57, with a p-value of 0.00. This is consistent with Gottfredson and Hirschi (1990) as well as previous research that parental management is important in developing self-control levels (Burt et al., 2006; Cochran et al., 1998; Feldman & Weinberger, 1994; Gibbs et al., 1998; Hay, 2001; Hay & Forrest, 2008; Hope & Chapple, 2005; Hope, Grasmick, & Pointon, 2003; Nofziger, 2008; Perrone et al., 2004; Polakowski, 1994; Pratt et al., 2004; Unnever, Cullen, & Pratt, 2003).

The path coefficient for self-control and offending was 0.45 and was also significant at the 0.00 level. This path was also consistent with self-control theory as well as previous research that found a direct relationship between self-control and offending (Brownfield & Sorenson, 1993; Driscoll, 1992; Giever, 1995; Grasmick, et al., 1993; Higgins, 2002; Longshore, 1998; Longshore, Turner, & Stein, 1996; Nagin & Paternoster, 1993; Piquero & Tibbetts, 1996; Polakowski, 1994; Pratt & Cullen, 2000; Winfree & Bernat, 1998; Wood, Pfefferbaum & Arneklev, 1993).

The path between peer pressure and offending had a path coefficient of 0.71 and was not significant. This could show consistency with the idea of Gottfredson and Hirschi (1990) that children who lack self-control make friends

with others with low self-control because they are generally bad friends and will therefore commit more crime and deviance.

The final test of paths within the SEM was that of race on all of the measures. The SEM did not show a significant path between the two measures for race and parental management. The path between race and self-control had a path coefficient of 0.14, and was significant at the 0.00 level. Peer pressure had a path coefficient of -0.23, and was significant also at a 0.00 level. Finally, offending and race had a path coefficient of 0.20 and was significant with a p-value of 0.01. These results are key to the expectations of the current study. The first expectation that there would be significant racial difference in offending received empirical support from this study. The second expectation of the current study that stated there would be significant racial differences in parental management were not found within this study, this is also inconsistent with the views of Gottfredson and Hirschi (1990). The third expectation that there would be significant differences in self-control among races was found in this study and is consistent with Gottfredson and Hirschi's (1990) argument. The results are important both to this study as well as the theory of self-control itself. Although it does seem there is a race effect on self-control, peer pressure and offending, race does not seem to have an effect on parental management. This shows that although race is significantly related to all measures except for parental management, racial disparities cannot be explained as Gottfredson and Hirschi (1990) theorized. However, race was significantly related to self-control, therefore there is a racial difference in self-control as expected. Self-control, however,

cannot explain all of the difference in race and offending. This also means there must be other forces at work within childhood that ultimately effect self-control and may account for the racial differences in self-control as well as more items that affect offending that account for the racial disparities within offending.

CHAPTER VII

DISCUSSION

A consistent issue within the literature and previous research is that racial disparities in offending do exist. Researchers have directly focused on the scope of the problem of black crime for decades. Blacks represent 40 percent of the murderous offenders in this country (Uniform Crime Report, 2009). Along with high rates of committing violence, blacks are more likely to die from a homicide as well (Fox & Zawitz, 2003; Fingerhut & Kleinman, 1990). These statistics do not only include adults, black juveniles account for 25 percent of all violent crimes committed by juveniles, although they only account for 19 percent of the population (Uniform Crime Report, 1999). According to Gottfredson and Hirschi (1990) these problems can be accounted for by self-control theory. Gottfredson and Hirschi's (1990) self-control theory suggests all individuals are rational beings, allowing them to weigh the consequences of their actions and chose the actions that will bring them the most pleasure, as well as the least amount of pain. According to their theory, individuals with low levels of self-control exhibit several characteristics: impulsivity, self-centeredness, prefer physical tasks (rather than mental), prefer simple tasks (rather than difficult), seek immediate gratification, and are risk-taking. Individuals with low self-control will find crime

as well as analogous acts to bring them pleasure and little pain because they are able to foresee the consequences of their actions. Therefore those with low self-control are more likely to commit crime and deviance.

According to Gottfredson and Hirschi (1990) self-control is instilled by consistent and effective parental management by the ages of 8 and 10, from this time self-control will remain stable throughout the life course. Self-control theory states that parental management must include four tasks: attachment to the child, monitoring of the child to gather behavioral information, analyzing the child's behavior to determine whether it is deviant, and finally disciplining the child. Gottfredson and Hirschi (1990) theorize the most effective form of discipline will be strong disapproval by a parent that the child feels attached to and corporal punishment (i.e., spanking) is the least effective form of discipline. Parental management is the largest contributing factor to levels of low self-control and will therefore account for any gender or racial disparities because parents of different ethnicities, as well as parents with children of different genders, will parent their children differently.

Other theorists propose that peers will play a role in offending (Akers, 1998). However, Gottfredson and Hirschi (1990) believe that low self-control is the only contributor to offending. Self-control is established by the age of eight or ten and those who have established low self-control will simply make bad friends. However, others with low self-control will be drawn to them due to their personality characteristics (i.e. impulsivity, risk taking) and will therefore create a peer group of individuals with comparable self-control levels. This accounts for

delinquent peer groups being formed; however, their formation is not the reason for offending. The individuals within these groups already have the characteristics most conducive to offending.

The purpose of the current study was to examine whether racial disparities in offending can be explained by self-control theory. According to Gottfredson and Hirschi (1990), racial differences in low self-control as well as offending should be accounted for through parental management, essentially making this particular study a test of self-control theory itself. Structural equation modeling, SEM, was utilized to test the theory using a nationally representative sample of adolescents from the NLSY79.

The results of this study show partial support for Gottfredson and Hirschi's (1990) self-control theory. T-tests were used to examine racial differences in self-control theory. The t-test allows researchers to examine if the mean between two groups is statistically significant. According to these results all parental management measures (except ignoring tantrums by their child) showed a significant difference between races. This is consistent with self-control theory (Gottfredson & Hirschi, 1990) and shows preliminary support for self-control theory. Gottfredson and Hirschi (1990) believed that different races and ethnicities would parent their children differently, therefore creating a significant difference between races.

When examining the results of the t-test more than half of the self-control measures showed a significant difference between blacks and non-blacks. This

is consistent with both self-control theory as well as previous research (Hay, 2001; Junger & Tremblay, 1999; Junger, et al., 2001; LaGrange & Silverman, 1999; LeBlanc, 1993; Longshore, 1998; Longshore et al., 1996; Longshore & Turner, 1998; Pratt, et al., 2004; Vazsonyi et al., 2001; Vazsonyi & Crosswhite, 2004). According to self-control theory this difference should exist due to the parenting differences across races, this is because according to self-control theory, parental management is the main contributor to self-control.

According to the t-test peer pressure measures did not show significant differences in the means of each measure for the two race groups, except for pressure to try alcohol. However, like parental management measures, peer pressure measures were dichotomous so further investigation was warranted.

Upon final examination of the t-test, offending measures were compared. Only one of the offending measures showed a significant difference between blacks and non-blacks, using alcohol. However, as well as violent crime, this measure was dichotomous. The dichotomous nature of the variable may actually be causing the insignificance. Both property crimes as well as status offenses were not based off of dichotomous measures and showed no significant difference between blacks and non-blacks. This would also be consistent with previous research on racial disparities in crime (Bureau of Justice Statistics, 1995; Felson, et al., 2008; Hawkins et al., 2000, Sampson & Laub, 1994); however, is not conclusive, only preliminary evidence of a racial disparity in offending.

Due to the use of dichotomous measures, further investigation was warranted. Therefore the use of SEM was employed. SEM is more advanced from a t-test, as well as correlations or regressions because it allows the researchers use of latent measures, more fit statistics, and a test of the theory itself. SEM is also truly multivariate and can account for missing data. This study began with a measurement model and continued with the structural model.

The measurement model allows the research to test the fit of the measures to the data, as well as test the observed measures as a source of the latent measure. Latent measures were created for parental management, low self-control, offending, and peer pressure. Parental management was created by the use of 6 observed measures (monitor, talk, spank, ignore, privileges, and expectations) that were used by Nofziger (2008). Low self-control was made of 11 observed measures that created a behavioral measure of self-control, also used by Nofziger (2008). Offending was created from 4 observed measures (originally nine measures, combined by types of offending) that were status offenses, alcohol offenses, violent offenses, and property offenses. The fourth latent measure was peer pressure, assembled by five observed measures measuring negative peer pressure, utilized by Crockett, Raffaelli, and Shen (2006) as well as Wright and Cullen (2001). The fit statistics of this model showed good fit, besides a significant chi-square that can be accounted for by sample size. The fit statics assume the observed measures for each of the latent measures are good, as well as consistent. Within the measurement model, correlations among all latent variables were both significant and in the right

direction, giving preliminary support for self-control theory and the expectations of the thesis. These findings suggest a full SEM is warranted that allows for a connection of the links between the latent measures created and tested.

The SEM in this study utilized the four latent measures previously discussed as well as an observed measure for race. This allowed a complete test of the theory. The results show paths between parental management, low self-control, peers, and offending consistent with Gottfredson and Hirschi (1990) as well as previous studies that examined the parental management component of self-control theory along with offending (Burt et al., 2006; Cochran et al., 1998; Feldman & Weinberger, 1994; Gibbs et al., 1998; Hay, 2001; Hay & Forrest, 2008; Hope & Chapple, 2005; Hope, et al., 2003; Nofziger, 2008; Perrone et al., 2004; Polakowski, 1994; Pratt et al., 2004; Unnever, Cullen, & Pratt, 2003).

According to Gottfredson and Hirschi (1990) there should be a direct and significant path from race to parental management to account for both the disparities in self-control as well as offending across races. However, all of the paths were significant, except for parental management. Therefore there are racial differences amongst self-control levels, as well as offending that is consistent with Longshore (1998) as well as Vazsonyi and Crosswhite (2004) but only shows partial support for self-control theory. The findings of this study suggest racial differences cannot be explained by parental management as suggested by Gottfredson and Hirschi's (1990) self-control theory, and can only be partially explained by self-control itself. Therefore there are more constructs

missing that may form both self-control as well as later offending that can explain more of the racial disparities in offending. The closest study to test this, Pratt, Turner, and Piquero (2004) used neighborhood characteristics to explain parental management differences. They did find differences in parental management when poor neighborhood characteristics were present; however, this study was a direct analysis of the theory itself and did not include neighborhood characteristics. Therefore, according to the findings of this thesis, more components may be needed to create self-control levels that is not consistent with Gottfredson and Hirschi (1990). This implies direct theoretical implications by adding a possibility of more than just insufficient parental management as a predictor of low self-control. This could lead to other possibilities that should be tested such as peer association, neighborhood characteristics, or possibly genetics. These results could also be insufficient, because of the measure of parental management. It is possible that the two parental management tasks not included in this analysis: attachment and analyzing behavior for wrong doing, are where the racial differences in parenting may exist.

It is important to note that the theory's structure works, even with race being included. Parental management remains a good predictor of self-control, and self-control a good predictor of offending. However, because race was significantly linked to both self-control as well as offending, self-control theory cannot account for all of the racial disparities in offending. These findings may also suggest that racial differences are more complicated than Gottfredson and

Hirschi (1990) first theorized. Testing these constructs is beyond both the scope of self-control theory as well as the current study. However, the study does show support for the structure of self-control theory and policy implications may be developed from this finding. Importantly, if these policies work we may indirectly reduce instances in racial disparities in offending given the partial support for Gottfredson and Hirschi's (1990) assumptions of self-control theory (i.e., racial differences in self-control and offending).

Hirschi and Gottfredson (1994, 2000) developed their own crime control policies from their theory. They give eight recommendations, the first three tell what not to do rather than how to fix the problem:

1. Do not try to control crime through incapacitating adults. This individuals have already finished much of their criminal activity.
2. Do not try to control crime through rehabilitation of adults. No evidence that treatment programs at this time in the life course make a difference in criminal offending.
3. Do not try to control crime by changing penalties within the criminal justice system. Individuals who would be effected will not consider penalties of their actions.
4. Limit the amount of unsupervised activities by teenagers. By doing so, opportunity to commit crime and deviance becomes limited.
5. Restrict pre-emptive policing, including sweeps, stings, etc.
6. Inquire the depiction of crime by the criminal justice system, as well as the media. Criminals are not professionals.

7. More support should be given to programs focusing on early education and efficient child care, especially those programs that target dysfunctional children and teach parents the importance of supervision.
8. Policies that support two-parent households should also be supported. Focusing on programs that instill the importance of monitoring and proper discipline. Teen pregnancy prevention programs should be of high importance.

Specifically, items seven and eight partially pertain to the findings of this research. Further support for these items will be given throughout this portion of the section.

The current research found more items may be needed to create self-control; however, a significant and direct link from parental management to self-control existed. This has policy implications to allow for possible parental management programs for early child development. Many programs have been introduced throughout the past few decades that deal with anti-social behaviors in children and the prevention of those behaviors. One such program is The Incredible Years.

The Incredible Years, developed by Webster-Stratton, is a program for both parents and teachers, as well as children to help children ages 0-12 with social and self-control skills and ultimately help reduce aggressive and delinquent behaviors. The program is constructed of several series that each emphasize

different skills for different age groups. The basic series emphasizes parental management skills that have been found to encourage a child's social aptitude and decrease anti-social behaviors. There are three versions of the series, separated by age group: baby/toddler (1 month to 2 years), preschool (3-5 years), and school age (6-12 years). The Incredible Years requires participation by the school or teaching organization that makes it both unique and effective. The use of video, role-playing, and homework for all participants is essential to the program as well. The program has been tested by researchers numerous times. The program has claimed that 4-8 year old children who were a part of the program showed decrease in both aggressive behaviors as well as destructive behaviors, many researchers have found evidence to support these claims (Beauchaine, Webster-Stratton, & Reid, 2005; Taylor, Schmidt, Pepler, & Hodgins, 1998; Webster-Stratton, Reid, & Hammond, 2004; Webster-Stratton, Kolpacoff, & Hollinsworth, 1988; Webster-Stratton, 1992). Parents who went through the program also reduced use of spanking and other forms of corporal punishment (Gross, Fogg, Webster-Stratton, Garvey, Julion, & Grady, 2003; Gross, Fogg, Webster-Stratton, & Grady, 1999; Webster-Stratton, 1982), that directly pertains to Gottfredson and Hirschi's (1990) argument that spanking is the least effective form of punishment (Piquero et al., 2008). This research shows empirical support for programs aimed at helping parental management techniques will affect the characteristics of self-control, ultimately helping curb levels of offending.

Another popular program assessed in the above mentioned meta-analysis (Piquero et al., 2008) was Triple P-Positive Parental Management Program, developed by Sanders and colleagues in 1999. The program introduces parents to non-corporal techniques to manage their child's behavior. Similar to The Incredible Years, Triple P-Positive Parental Management Program has several stages (depending on the severity of the child's behavior). The most basic stage, like The Incredible Years introduces basic parental management techniques to the parents. Numerous studies have also found empirical evidence supporting the program's necessity in curbing problematic behaviors among children and corporal punishment by parents (Leung, Sanders, Leung, Mak, & Lau, 2003; Markie-Dadds, & Sanders, 2006; Morawska & Sanders, 2000; Sanders, Markie-Dadds, Tully, & Bor, 2000).

While parental management programs are important policy implications of self-control theory, self-control itself has also been shown to be a predictor of offending. Therefore, focus must be moved to treating low self-control itself, because it has been found to be a predictor of crime and offending in both previous research (Brownfield & Sorenson, 1993; Driscoll, 1992; Gibbs, et al., 1998; Gibbs, et al., 2003; Giever, 1995; Grasmick, et al., 1993; Higgins, 2002; Longshore, et al., 1996; Longshore, 1998; Nagin & Paternoster, 1993; Piquero & Tibbetts, 1996; Polakowski, 1994; Pratt & Cullen, 2000; Winfree & Bernat, 1998; Wood, et al., 1993), as well as in the current study.

A recent meta-analysis by Piquero, Jennings and Farrington (2010) examined programs that focused on treating or improving characteristics of low

self-control. Their particular study separated studies by outcome source.

Through their analysis of 34 studies they found three important additions to the literature. First, the programs within the study actually improved the children's self-control levels. Second, the same programs also reduced offending. Third, the effects of the program remained despite different moderating measures.

Below are several examples of programs included in Piquero et al.'s (2010) meta-analysis.

Lynch, Geller, and Schmidt (2004) analyzed a program for preschool age children through early elementary that was set to decrease anti-social behaviors by the children, called *AI's Pals: Kids Making Healthy Choices*. Lynch and colleagues' study was part of a multi-year, multi-state analysis of the value of this program. Like the previous programs mentioned, it consisted of a school-based, teacher program, as well as parent curriculum. Unique to this program was a year long in school curriculum to supplement the program that included both original materials and music. The school curriculum consists of two lessons each week that last between 15-20 minutes. The lessons introduce children to real life situations that help them learn social skills. The lessons include puppet-led talks, music, books, pictures, and are fun and engaging for the children. The study of the program found that children who underwent the entire process had reinforced their social-emotional proficiency as well as coping skills. The children also successfully suppressed antisocial and aggressive behaviors.

Lakes and Hoyt (2004) examined a school-based martial arts training program and its effectiveness in promoting self-control. The children within the

program were Kindergarten-5th grade. The program, LEAD (Leadership Education Through Athletic Development) taught the children basics of traditional Moo Gong Ryu techniques that included blocks, kicks and punches. The children also learn board-breaking, body-stretching, and deep-breathing relaxation techniques. Those within the program were taught the importance of only using martial arts to protect themselves, and never to hurt another person, unless for self-defense. The control group in this study attended regular physical education classes. The results of the study found that martial arts improved the students self-control. Other tests revealed students within the martial arts group also showed improvements in math tests, a reduction of conduct problems and higher attention scores.

All of the programs discussed did show large and significant effect sizes though Piquero, Jennings, and Farrington's (2010) meta-analysis. Therefore they all made significant differences in the levels of self-control developed by the children within each program. The meta-analysis also stated that "interventions aimed at improving socialization and child rearing practices in the first decade of life offer benefits for improving self-control as well as reducing offending/crime" (Piquero et al., p.820, 2010). These findings are consistent with the previous meta-analysis mentioned (Piquero, et al., 2008) that focused on early family/parenting programs. Therefore although programs that focus on self-control and parental management may be different, ultimately parental management effects self-control levels (Burt et al., 2006; Cochran et al., 1998; Feldman & Weinberger, 1994; Gibbs et al., 1998; Hay & Forrest, 2008; Hay,

2001; Hope & Chapple, 2005; Hope, et al., 2003; Nofziger, 2008; Perrone et al., 2004; Polakowski, 1994; Pratt et al., 2004; Unnever, et al., 2003), as theorized by Gottfredson and Hirschi (1990), as well as shown in the present study.

Policy implications have been given for both parental management as well as self-control that ultimately affect offending. However, the ultimate goal of this study was to examine racial disparities and the ability of self-control theory to explain them. According to the findings of this study those racial disparities in offending still exist, even when controlling for self-control. Therefore policies that focus on self-control may ultimately lower offending rates; they will not however diminish the racial gap in offending. Consequently, the findings of this study warrants more research on both the cause of racial disparities as well as the elements of self-control theory, because it seems as though Gottfredson and Hirschi (1990) may have left something out in the development of self-control.

The results of this study show support for the structure of self-control theory. There were also racial disparities found in both self-control as well as offending. Although racial disparities did not seem present in parental management within this data, programs that aim at teaching parents better parental management techniques should ultimately reduce racial disparities in offending. Programs that specifically help to curb behaviors consistent with low self-control should ultimately decrease racial disparities in offending as well. Therefore, programs implied by the support for self-control theory itself should not only reduce levels of offending, but racial disparities in offending as well.

Limitations

The current study does have limitations. The first limitation being the measurement for parental management. A measure for monitoring and discipline are included, however efficient measures for attachment as well as recognizing deviant behaviors are not. This measure for parental management was used in a previous study (Nofziger, 2008). Previous studies that have examined parental management have also included measures lacking at least one of the four tasks of effective parental management (Burt et al., 2006; Cochran et al., 1998; Feldman & Weinberger, 1994; Gibbs et al., 1998; Hay, 2001; Hay & Forrest, 2008; Hope & Chapple, 2005; Hope, et al., 2003; Nofziger, 2008; Perrone et al., 2004; Polakowski, 1994; Pratt et al., 2004; Unnever, Cullen, & Pratt, 2003). Therefore it is hard to decide if there have been very many studies that have been able to completely capture self-control theory as Gottfredson and Hirschi (1990) laid it out.

The measure of race within this study is also insufficient. This author would have liked to include a measure of racial identity, both for mother as well as the child. A measure that was able to capture racial identity would ask the respondent a question such as "how black do you feel?." Specific parents as well as children who may "feel" more white or black may act differently. However, such a measurement within this data does not exist. The measure used for race was merely a dichotomous measure that only separated blacks from non-blacks.

The last limitation of this study was the lack of genetic information on the respondents. Recent literature has suggested there may be genetic links in self-control theory (Beaver, et al., 2008; Wright & Beaver, 2005). Wright and Beaver (2005) used a sample of twins to examine self-control, including genetics as a measure. Their findings suggest genetics should be examined along with socialization when investigating self-control.

Future Research

First and foremost future studies of self-control theory should make sure to include the entire structure of the theory (parental management → self-control → offending). This will help add to the literature where it is currently lacking. The link between self-control and offending has been empirically supported numerous times (Pratt & Cullen, 2000) and research of the theory must move forward.

Future research should also focus on creating a measure of parental management that includes all four parental management tasks (attachment, monitoring, analyzing behavior for wrongdoing, non-corporal punishment). Unless all four tasks are included in a measure, self-control theory's assumptions that it can account for racial disparities through ineffective parental management cannot be dismissed.

Research that intends to examine racial differences should also include a measure of both race as well as racial identity, which was included as a limitation of the current study. The race an individual identifies with could vary

possibly change their views on all parental management tasks as well as frequency of offending or possible peer associations.

Furthur research into parenting programs as well as programs aimed at treating low self-control characteristics could be very informative. Longitudinal studies of these programs which may follow both the children and parents who participate long term could inform the population of effective parenting programs as well as the community ways to curb offending. By including a measure of racial identity in these evaluations, it may become more clear whether parental management plays an important role in disparities in offending among races.

CHAPTER VIII

CONCLUSION

In conclusion, the present study contributes several items to the literature. To begin with it gives further empirical support to the main construct of Gottfredson and Hirschi's (1990) theory. However, it does find partial support for self-control theory explaining racial disparities in crime and offending. This could be for several reasons, but ultimately racial differences may be more complicated than researchers, especially Gottfredson and Hirschi (1990) first thought. It should be noted that although racial differences were not found within parental management to explain the differences in self-control theory, parental management remains a strong predictor of self-control.

The results of this study are not necessarily for the criminal justice system. However, they could be very useful to social workers, teachers, and parents who all play a role in the socialization of children. Although this study cannot explain why blacks seem to be committing consistently more crime than non-blacks, it does find support for the link between self-control and offending. Ultimately these findings show that no matter the race of a child, programs that focus on parental management techniques as well as stopping the

characteristics of low self-control from forming further at an early age may ultimately be able to curb crime and offending rates.

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Appendix A

Parental Management. Wave: 1996, Age 6-8 (from Mother Supplement)

Monitoring

1=yes, 0=no

MonitorTV When your family watches TV together, do you or your child's father (or stepfather or father figure) discuss the TV programs with him or her?

Expectations

How often is your child expected to...

1= almost never, 2=less than ½ the time, 3= ½ the time, 4=more than ½ the time, 5=almost always

Expectations Make his or her own bed?
(additive scale) Clean his or her own room?
 Clean up after spills?
 Pick up after himself or herself?

Discipline

Sometimes children get so angry with their parents that they say things like "I hate you" or swear in a temper. Which action(s) would you take if this happened?

1=selected, 0=not selected

Talk Repsond to temper tantrum by talking with the child
Spank Respond to temper tantrum with spanking
Ignore Respond to temper tantrum by ignoring it
Privileges Respond to temper tantrum by the following:
 Grounding

Give him or her a household chore
 Sent to room for more than one hour
 Take away his or her allowance
 Take away TV or other privileges
 Put child in a short "time out"

Self-Control. Wave:1998, Age 8-10 (from Mother Supplement)

Which statement describes your child's actions over the past three months?

1=often true, 2=sometimes true, 3=not true

Mood	Child has sudden changes in mood or feeling
Argue	Child argues too much
DifCon	Child has difficulty concentrating, cannot pay attention
DisOb	Child is disobedient at home
NtSorry	Child does not seem to feel sorry after she or he misbehaves
Impulsive	Child is impulsive, or acts without thinking
Restless	Child is restless or overly active, cannot sit still
Stubborn	Child is stubborn, sullen or irritable
Temper	Child has a very strong temper and loses it easily
Breaks	Child breaks things on purpose or destroys his/her own or another's things
Attention	Child demands a lot of attention

Peer Pressure, Wave: 2006, Age 16-18(from Youth Self-Report)

Are you pressured to...

1=yes, 0=no

PCigs	Try cigarettes
PDrugs	Try drugs
PDrink	Drink alcohol
PSkipSch	Skip school
PCrime	Commit a crime

Offending, Wave: 2006, Age 16-18(from Youth Self-Report)

Number of times in the past year you have...

Drugs	GottenDrunk	Gotten drunk
Violent	HurtSomeone	Hurt someone badly enough to need bandages/doctor
Property	Shoplifted	Took someone something from store w/o paying

Status	DamagedProp	for it Damaged school property on purpose
	PastCurfew	Stayed out later than parents said you could
	LiedtoPars	Lied to parents about something important
	ParstoSch	Parents brought to school because you did something wrong
	SkippedSch	Skipped school without permission
	StayedOut	Stayed out without permission

Curriculum Vitae

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Education

- In Progress M.A. *Administration of Justice*, University of Louisville,
Kentucky
Current GPA 3.8
- 2009 B.S. *Administration of Justice*, University of Louisville,
Kentucky
Cumulative GPA 3.23

Research and Teaching Interests

- Self-control Theory
- Deviance within the service industry
- Prescription drug abuse
- Crime and deviance within correctional facilities
- Special populations in corrections

Professional Experience

- 2009-Present Graduate Research Assistant, under supervision of Dr.
George E. Higgins, Justice Administration, University of
Louisville
- Statistical analysis using both Excel and SPSS.
 - Data entry and cleaning.
 - Help to prepare and write manuscripts for publication.
 - Prepare and organize models and tables for publication
as well as presentation.

- 2009-Present Managing Editor, American Journal of Criminal Justice
- Organize and track all manuscripts submitted to American Journal of Criminal Justice.
 - In charge of all correspondence with authors, reviewers, as well as Publisher (Springer).
 - Complete full report on manuscripts, along with editor and reviewer decisions, number of days within the review process, etc. to be presented at SCJA annual meetings as well as editorial board meetings.
- 2008-Present Data Entry, Pacific Institute for Research and Evaluation
- Enter all given data, both qualitative and quantitative, efficiently and quickly.
 - Organize and file all data entered.
 - Assist in reports to be presented at grant evaluations.
- 2008 Intern, Pacific Institute for Research and Evaluation
- Assisted in grant writing process from beginning to end.
 - Literary research.
 - Learned to write grant budgets.
 - Data entry.

Scholarships and Awards

- 2011 Academic All-American
- 2009-Present Research Assistantship, Fall 2009-Spring 2011, University of Louisville
- 2010-Present Alpha Phi Sigma Honor Society
- 2010-Present Golden Key Honour Society
- Fall 2007 - 2009 Dean's List, University of Louisville

Publications

Higgins, G. E., Kirchner, E. E., Ricketts, M. L., & Marcum, C. D. (in-press). Developing self-control: The role of parental stress. *Criminal Justice Studies*.

Higgins, G. E., Bush, M., Marcum, C. D., Ricketts, M. L., & Kirchner, E. E. (2010). Ensnared into crime: A preliminary test of Moffitt's snares hypothesis in a national sample of African-Americans. *Journal of Ethnicity in Criminal Justice*, 8, 181-200.

University Service

2010-Present	Alpha Phi Sigma, Omicron Chapter President
2005-Present	Justice Administration Club
2010-Present	Arts & Sciences Graduate Student Union
2009-2010	Justice Administration Club, President
2008-2009	Justice Administration Club, Historian
2009-Present	University of Louisville Bowling
2005-2010	Disney College Program, Campus Representative

Professional Affiliations

2010-Present	Academy of Criminal Justice Sciences
2010-Present	Alpha Phi Sigma Honor Society
2010-Present	Golden Key International Honour Society