

**VIOLENCE, VANDALISM, AND THEFT AMONG ALBERTA YOUTH:
A RECONCEPTUALIZATION OF THE GENERAL THEORY OF CRIME**

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ABSTRACT

Despite the number of studies conducted regarding violence amongst youth, there is still much to be learned. The present study was designed in an attempt to better understand the nature of delinquent adolescent behaviour. The main objectives of this study are as follows: to understand the pattern and distribution of delinquent behaviour, including violence, vandalism, and theft among Lethbridge, Alberta's high school population, to identify possible factors that may play a role in one's likelihood of engaging in such behaviours, and finally, to contribute to Micheal Gottfredson and Travis Hirschi's (G&H) 'General Theory of Crime' (1990) by reconceptualizing the concept of self-control. The present study includes 182 youth from two Lethbridge public high schools. Of the 182 respondents, 84 are female, and 98 are male. The youth involved in this study range from 15 to 19 years of age. Through the use of a questionnaire, a number of key variables are addressed. These variables are: empathy, impulse control, social bonds, and their relationship with violence, theft, and vandalism.

The results of this study show that empathy and impulse control are significant predictors of violence and vandalism, while impulsive behaviour was found to be the only statistically significant predictor of theft among the variables included in the multiple regression analysis. Although social bonds were hypothesized to be a major predictor of all three delinquent behaviours included in this study, the results did not support such an assumption. It is suggested that perhaps the concept of social bonds was inadequately measured for use in this study. Future research using a better measure of social bonds, may find it to be a significant predictor of violence, vandalism, and theft.

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Chapter One

Introduction

Chapter Introduction

The primary objective of this thesis is to outline and critique Michael Gottfredson and Travis Hirschi's General Theory of Crime (1990) and subsequently assess its application to juvenile delinquency among southern Alberta youth. The general theory of crime is often criticized for its inadequate measure of 'low self-control', a concept that is central to the theory. The present study addresses this critique by operationalizing or measuring the concept of low self-control in terms of empathy, impulse control, and social bonds. Using data acquired from surveys administered to Lethbridge high school students, I use multiple regression to assess the impact of empathy, impulse control, and social bonds on youths' propensity to commit acts of violence, vandalism, and theft.

In order to better contextualize my study and to emphasize its importance, this introductory chapter provides an overview of the pattern and distribution of youth crime in Canada. More specifically, I focus on youth's involvement in violence, vandalism, and theft. I conclude the introductory chapter by reiterating the primary research goals of this study. Chapter two provides an overview of the general theory of crime as well as a discussion of the critiques of the theory. Also included in chapter two is a review of sociological and psychological literature regarding empathy, impulse control, and social bonds. In light of this literature, I argue that such concepts are vital to the measurement of self-control. Chapter three outlines my guiding research questions, as well as a discussion of the survey used to address them. Chapter three also discusses survey design and includes a review of ethical issues regarding research with minors. Chapter four provides a summary of the results and findings of the multiple regression analyses, as well as a discussion of the extent to which my research questions have been answered.

Chapter five concludes the thesis, with a discussion of the implications of my study for the general theory of crime, the limitations of my study, and suggestions for future research.

Violent Youth Crime

Youth crime in Canada is not a new phenomenon. However, in the past two decades there has been an increase in public reaction to the crimes committed by young offenders. Scholars debate whether or not youth crime is on the rise. One of the problems with measuring crime, youth and adult offenders alike, is the fact that statistics only include offences reported to the police. This leaves what is referred to as a 'dark figure' of crime that remains undetected or unreported (Griffiths and Verdun-Jones, 1994). Self-report studies have shown that a large majority of youth engage in behaviours that could result in court processing. However, most offences are not reported; therefore, those officially charged may only represent a fraction of all youth who are actually committing offences. Another measurement problem stems from the attention given to certain types of behaviour. For example, schoolyard bullying is currently reported to the police more often than in the past. This would result in the appearance of increasing violent crime rates, when in fact it may not actually reflect a change in behaviour (Hackler, 2000).

Despite some problems with measuring *exact* crime rates, statistics provide some insight into the current trends of youth crime. Some studies have shown a 130% increase in violent youth crime from 1986 to 1995. The majority of this increase, however, can be attributed to the 173% rise in 'common assault' rates (Juristat, 1999). Common assault,

the least serious type of violent offence, includes pushing, slapping, punching, and face-to-face verbal threats. In 1997, common assault accounted for nearly one half of violent crime cases among youth (Juristat, 1999).

According to Statistics Canada (2003), the overall rate of youth crime has decreased steadily from 1992 to 1999 (Crime rates are reported as number of charges per capita, not number of convictions). Slight increases were noted in 2000 and 2001, before the crime rate dropped again in 2002, to less than 4,000 per 100,000 youths aged 12-17. The rate of youths charged with violent crimes increased 2% in 2001, following a 7% increase the previous year. In 2002, property crimes accounted for 44% of youth crime, while violent crimes accounted for 24%. The remaining 32% were made up of other offences such as mischief, disturbing the peace, or offences against the administration of the law. Schmallegger, MacAlister, and McKenna (2004) point out that, although the incidence of youth crime dropped in the mid to late 1990's, the decline was largely due to a decrease in the number of adolescents in the Canadian population. Further, a decrease in property crime accounts for most of the decline, leaving violent crime rates higher than in previous years.

In 1997-98, youths (aged 12-17 years) accounted for 8% of the total Canadian population; in the same year, youths represented 22% of the persons charged with a criminal offence (Juristat, 1999). Interestingly, 16 and 17-year-olds appear in court more often than any other age group. In 1997-98, 16 and 17-year-olds accounted for 51% of the cases in youth court, 14 and 15-year-olds for 37%, and 12 and 13-year-olds for 12%. Offence type also varies among age groups. The younger groups appeared in court more often for theft of goods valued at \$5000 and under, common assault, and mischief, while

16 and 17 year-olds were found in court for offences related to failure to comply with a disposition, drugs, and possession of stolen property (Juristat, 1999).

Males are disproportionately represented in youth court cases. In 1997-98, males accounted for 80% of youth criminal involvement, which tended to increase with age. Female involvement peaked at 15 years of age. Males tend to be involved in cases of theft under \$5000 and breaking and entering, while females tend to be involved in cases of theft under \$5000 and common assault. Although males predominate in all types of cases, male violent offences decreased 1% from 1992-93 to 1997-98, compared to a 25% increase for female violent crime in the same span of years. It is important to note, however, that although there have been changes in violent crime rates by gender, males are still responsible for twice as many common assaults and four times as many serious assaults as females (Juristat, 1999).

Sources for statistics regarding crime will vary to some extent. However, taken together, they provide a picture of youth crime in Canada today. Despite minor fluctuations throughout the years, it is clear that youth violence has been on the rise.

Vandalism

According to the 2004 General Social Survey, the rate of vandalism committed by youth aged 12-17, has been increasing (Gannon and Mihorean, 2005). Vandalism is a willful and deliberate act. It is not accidental, nor does it occur as a byproduct of another crime. The apparent purpose of vandalism is the act itself (O'Bireck, 1996). One writer stated some three decades ago, that teenage vandalism is so common that it seems to be

“more or less normal behaviour” (Gladstone, 1978, p. 23). As with any delinquent act, there is no single agreed upon cause for the act.

One theory posits that vandalism occurs as an expression of frustration and aggressive feelings that have not been dealt with in a healthy manner (e.g. Lippman, 1952). Others suggest that vandalism is the result of adolescents finding themselves caught between childhood and adulthood (Richards, 1979). For example, parents and adults alike, often expect adolescents to behave in an adult-like manner in certain situations, while in other situations, adolescents are reminded by adults that they are the children, so in turn, are expected to act like it. For adolescents who feel caught in both the adulthood and childhood spheres, vandalism may serve as a statement about adult-imposed constraints, as well as demonstrate the kind of independence that may be valued by peers (Matza, 1964; S. Cohen, 1972). One’s behaviour will simultaneously affect his or her position in both spheres. Activities that may decrease one’s status in one sphere may increase it in the other. For example, drinking alcohol may demonstrate independence in the eyes of peers, but be a sign of immaturity to adults. It is this type of predicament that may result in the adolescent resorting to vandalism.

The example of youth feeling caught between two social spheres is interesting when considered in the context of social bonds. The extent to which an adolescent is bonded with both parents and peers will play a major role in what sphere the adolescent would prefer to fit. Further, the type of bond (pro-social or anti-social) will also be extremely influential. Adolescents, whose friends vandalize, are more likely to be involved in similar behaviour than those without such friends. Similarly, those who

associate with peers who drink, use drugs, or are involved in theft, are also more likely to take part in such behaviours (Richards, 1979).

The degree to which adolescents disobey their parents as well as the amount of fighting between teens and their parents will also contribute to the likelihood of committing acts of vandalism. Anger towards parents and/or school teachers increases the probability of vandalism. Conversely, students who are satisfied with school are less likely to vandalize than those who are dissatisfied (Richards, 1979).

A relatively recent study conducted in London, Ontario, that involved interviews with teenage males about their involvement (or lack of involvement) in delinquency, reveals some of the reasons young people give for becoming involved in vandalism (Teevan and Drybuegh, 2000). Two of the most common explanations given were that they vandalize because it's fun and that (the respondent) and a group of friends were looking for something to do. Other explanations include vandalizing to stay in a group, to show off, to get friends' approval, dared by friends to do it, and finally, for the fun of taking a risk. The risk-taking aspect is not surprising, as many risk-takers have impulsive personalities, which is closely correlated with delinquent behaviour (Luengo, Carrillo, Otero, and Romero, 1994). Many of the respondents justified vandalism by claiming that a little bit of damage is no big deal, and that they (the vandals) are smarter than the authorities, so they can get away with it.

Reasons for not vandalizing, given by those who denied involvement, include a lack of need to vandalize, the belief that vandalism is pointless, not wanting to hurt anyone by destroying their property, and finally, a belief that it is wrong. It is also interesting to note that, in this study, threats of punishment were not given as a reason for

not vandalizing. It is suggested by the authors of the study that this could be due to vandals perceiving a low certainty of punishment (Luengo et al., 1994).

Another recent study involving 462 high school students, found that higher aggression, lower levels of empathy, lower social competencies, negative parent-child relationships, and lower school adjustments are all significantly correlated with delinquent behaviour, including vandalism (Morishita, 2004).

Theft

According to the Juristat reader, “property incidents involve unlawful acts with the intent of gaining property but do not involve the use or threat of violence” (1999, p. 123). Theft, breaking and entering, fraud, and possession of stolen goods are examples of property crimes. Property crimes, including theft, are a common form of delinquency among youth. Although the rate of Canadian youth charged with property crime offences declined 12% between 1991 and 1997, over half (53%) of the youths aged 12-17 charged in 1997 were charged with property crimes (Juristat, 1999). According to the 2004 General Social Survey, there has been an increase in victimization rates for theft of personal property and theft of household property (Gannon and Mihorean, 2005). Statistics Canada (2004) reports a 7% increase in the rate of break-ins and a 6% increase in the rate of thefts under \$5000, committed by people aged 12-17 years old.

In a self-report study some five decades ago, involving 912 junior high students in Kansas, Dentler and Monroe (1961) found a number of interesting factors associated with youth involved in theft. According to their study, males were much more likely to report stealing than females, and young people over the age of fourteen reported stealing more

frequently than younger children. Interestingly, they found that birth order also had an influence on reporting theft. Youngest siblings were found to be most likely to report their own involvement in theft, while oldest siblings were the least likely.

Closer to my current interests, Dentler and Monroe (1961) identified possible factors associated with theft and social bonds. They found that respondents who were more likely to be involved in theft tended to lack close relationships with their families. For example, they were significantly less likely to confide in their parents, more inclined to perceive their families as unloving, and less likely to see themselves as being treated equitably by their families. Further, these respondents were more inclined to identify themselves as disobedient and more likely (than non-thieves) to be assigned roles such as 'bully' or 'fighter' at school (Cabrera, 2001).

Regarding leisure activities, Reed and Rose (1998) found that those who were involved in theft reported spending fewer evenings at home, less time studying at home, and spending more time at local hangouts than those who were not involved in theft. Involvement in theft was also associated with other activities such as vandalism and illegal driving. Over 50% of those who admitted to involvement in theft also admitted to involvement in vandalism and illegal driving.

A more recent study, where teenage males were interviewed about their involvement (or lack of involvement) in delinquency, highlights some of the reasons youth give for becoming involved in a behaviour such as theft (Teevan and Drybuegh, 2000). Theft was most often explained as a means to an end. In other words, stealing provides (the thief) with something he may want or need, but may not have. One example given by a respondent, was that he stole food because there wasn't much food at

home. Another reason for stealing was that it satisfied an emotional need. A number of the respondents reported that stealing provides a natural high for them. A common notion held by many was that “shoplifting is no big deal, no one gets hurt, and everyone does bad things” (Teevan and Drybuegh, 2000, p. 77). Depending on who the person is stealing from, it is not uncommon for young thieves to feel that their stealing is not actually hurting anyone, as it may be difficult for them to identify the victim if they are stealing from a large corporation, for example, such as Wal-Mart.

In the same study, respondents who denied involvement with theft were asked to explain why they did not steal. The most common explanation for not shoplifting was a lack of need. They explained that they did not steal simply because they did not need to. Others claimed that they did not steal because it is just wrong to do so (Teevan and Drybuegh, 2000).

In sum, there are many reasons why people decide to steal, whether it be due to a perceived physical need, the desire for a ‘natural high’, the inability to see who the victim may be, or as a way of acting out due to a lack of pro-social bonds.

Is There a Theory That Can Explain Youth Crime?

Given the apparent complexity of youth crime, it would seem a daunting and ambitious task to develop a theory that could explain all forms of delinquent behaviour, yet, with the General Theory of Crime (1990), Michael Gottfredson and Travis Hirschi have embarked on such a task. As I will discuss in detail later in this thesis, Gottfredson and Hirschi claim that all delinquent behaviour, including violence, vandalism, and theft, can be explained with the concept of low self-control. While this theory has received

much empirical support, the theory has also proven deficient in several crucial respects, all of which I will address in depth further into this thesis.

First, there is debate in the literature over the use of attitudinal versus behavioural measures of self-control. While Gottfredson and Hirschi prefer behavioural over attitudinal measures, other researchers suggest that using behavioural measures does not give a clear understanding of whether self-control is predicting crime, or whether behaviours similar in nature are predicting each other (Evans et al., 1997; Geis, 2000).

Second, Gottfredson and Hirschi claim that the General Theory of Crime is intended to explain all crime, at all times. Others point out that there are crimes that the theory cannot explain, including complex crimes that require self-control, crimes of omission, and certain gender-related crimes, such as rape, that are specifically targeted at women (Geis, 2000; Miller and Burack, 1993).

Finally, and central to my thesis, Gottfredson and Hirschi have been criticized for the tautological way in which the concept of self-control has been operationalized. Gottfredson and Hirschi indicate that a lack of self-control is a cause of crime, while simultaneously using crime as a measure of insufficient self-control (Akers, 1991; Gies, 2000; Marcus, 2004; Stylianou, 2002). Drawing upon both psychological and sociological literature, I argue that low self control is best operationalized in terms of empathy, impulse control, and social bonds. Current literature suggests that those who lack feelings of empathy are more likely to cause harm to others (e.g. Nussbaum, Collins, Cutler, Zimmerman, Ferguson and Jacques, 2002). Individuals who are unable to control their impulses are also more likely to cause harm to others through various acts of delinquency, including violence, vandalism, and theft. Research also shows that those

who are socially bonded to pro-social groups are less likely to be involved in delinquency than those who are socially bonded to anti-social groups. People tend to take part in behaviours that are typical to the group in which they feel they belong (e.g. Herrenkohl et al., 2003). In light of the importance the literature gives to the impact of empathy, impulse control, and social bonds on various delinquent activities, I am using all three as primary measures of self-control. Chapter two contains an in-depth review of the literature regarding the three variables.

Summary of Objectives and Methodology

To summarize, the goals of this study are two-fold. One of those goals is descriptive in nature. In particular, I want to gain an understanding of juvenile delinquency in southern Alberta, focusing on violence, vandalism, and theft. Second, and more instrumentally, I want to apply, assess, and possibly improve the General Theory of Crime.

Data for this study was acquired through the use of a survey, which I constructed and administered to 182 Lethbridge, Alberta high school students. Characteristics of primary interest in this study include involvement in delinquent activities such as violence, vandalism, and theft; and the extent to which these activities are predicted by personal levels of impulsivity, feelings of empathy toward others, and bonds with family, peers, and school. Hypothesized relationships between these variables were assessed using multiple regression analysis. Results had implications for the reconceptualization of The General Theory of Crime. These implications are discussed in the concluding chapter of this thesis.

Chapter Two

Overview and Critique of the General Theory of Crime

Chapter Introduction

The following chapter consists of an overview of the General Theory of Crime as well as a discussion of key debates. One of the most debated issues with The General Theory of Crime is the concept of self-control and the method in which it is measured, or operationalized. This chapter will consist of a review of the concept self-control, including a discussion of the problems encountered with operationalizing it, how others have operationalized it, as well as an argument for the inclusion of empathy and impulse-control as primary measures of self-control. I will also review Travis Hirschi's Social Bonding Theory (1969) with a discussion of how we cannot detach social bonds from an understanding of self-control.

Overview of the General Theory of Crime

Gottfredson and Hirschi assert, in their 'General Theory of Crime' (1990), that low self control is directly related to law-breaking and various behaviours considered to be "analogous" to crime. According to their theory, "Criminal behaviour is typically characterized by certain distinguishing features: it offers easy, short-term gratifications, such as excitement, small amounts of money, and relief from situational aggravations" (Evans, Cullen, Burton, Dunaway, and Benson, 1997, p. 476). They explain typical offenders as "impulsive, insensitive, physical (as opposed to mental), risk-taking, short-sighted, and non-verbal" (Gottfredson and Hirschi, 1990, p. 90). Gottfredson and Hirschi consider the "broad inability to exercise personal restraint in the face of tempting gratifications as a stable individual difference" (Evans et al., p. 476). This difference, a propensity to commit crime, is referred to as low "self control". The main thesis of the

general theory of crime is that “people with high self-control are less likely under all circumstances throughout life to commit crime” (Gottfredson and Hirschi, p. 118).

Although Gottfredson and Hirschi do not explicitly list the elements of self-control, Brownfield and Sorenson (1993) outline six that they have taken from Gottfredson and Hirschi’s discussion. First, those with high self-control seem to be more able to defer gratification. Through crime, those with low self-control are able to immediately satisfy desires. Those who offend are typically described as lacking the ability to control their impulses. The second element of self-control is defined as “the tendency to be diligent, tenacious, or persistent in a course of action” (p. 247). Crime offers offenders a way to satisfy desires without much effort. The third element of self-control is “the tendency to be cautious, cognitive, and verbal” (p. 247). Offenders tend to be more physical and daring than non-offenders, as Gottfredson and Hirschi point out, due to the fact that criminal acts involve risk and excitement. The fourth element of self-control is “the tendency to engage in long-term pursuits or relationships, such as a career or marriage” (p. 247). People with low self-control seem to be less concerned with such long-term pursuits and are less capable of engaging in them. The fifth element of self-control is described as “the tendency to possess or value cognitive or academic skills” (p. 247). Gottfredson and Hirschi claim that crime does not require much skill or planning. Therefore, offenders tend neither to possess nor value academic skills. The final element refers to the tendency of those lacking self-control to be egotistical, unconcerned, or insensitive to the pain and needs of other people.

While each of the elements listed by Brownfield and Sorenson are important to the measurement of self-control, critiques suggest that there are other elements that need

to be considered in operationalizing the concept. They include the importance of both empathy and impulse control. These two elements will be discussed in detail later in this thesis.

Critiques of the theory

Generality of the Theory

Gottfredson and Hirschi's theory has received mixed reviews. Geis (2000) notes that Gottfredson and Hirschi claim their theory is intended to explain all crime at all times. However, Gottfredson and Hirschi also state that some crimes are 'rare' and 'complex' and as such offer an inadequate basis for theory and policy (p. 37). Geis also points out that there are many acts that are neither complex nor rare that have very little to do with the presence or absence of self-control. They include acts such as crimes of omission (e.g.: failing to install safety equipment at work), or laws requiring morality rather than self-control. Another issue addressed by Geis is that Gottfredson and Hirschi tend to take advantage of the idea of 'opportunity' as a way to explain predictions that are unable to be explained by their theory. Geis quotes Gottfredson and Hirschi as saying, "Lack of self-control does not require crime and can be counteracted by situational characteristics or other properties of the individual" (p. 43). This statement, claims Geis, is saying "that absence of self-control causes all crimes except those that it does not cause" (p. 43).

Feminist theorists have also faulted Gottfredson and Hirschi for suggesting that all crimes can be generalized into one broad category. Gottfredson and Hirschi are criticized for not accounting for how the theory can be applied to crimes such as rape and

intimate violence, which are specifically targeted against women (Miller and Burack, 1993). For example, Gottfredson and Hirschi treat rape simply as a crime of compulsivity. They disregard characteristics that are unique to rape which set it apart from other behaviours stemming from low self-control, such as gambling or smoking. Gottfredson and Hirschi fail to “consistently treat rape as a crime committed by men against women” (Miller and Burack, p. 120). Studies addressing the effect of gender on self-control have suggested that the general theory needs to account for such gender differences in order for Gottfredson and Hirschi to claim generality (LaGrange and Silverman, 1999; Sellers, 1999).

In contrast to these studies, a four-nation comparative study has reported findings that suggest strong support for the general theory, including the finding that self-control predicts deviance in males and females cross-culturally (Vazsonyi, Pickering, Junger and Helsing, 2001). The results of a meta-analysis of 21 studies also point to findings consistent with Gottfredson and Hirschi’s argument. The effects of self-control appear to be general, with self-control having a similar effect on crime and analogous behaviours, in studies that were racially integrated, as well as those that were not (Pratt and Cullen, 2000).

Regarding the generality of the theory, Gottfredson and Hirschi explain, “control theory...denies the existence of personality traits that require crime. In our version, self-control is the (general) cause of crime; many apparent traits of personality may also be its byproducts” (Hirschi and Gottfredson, 1993, p. 49). They continue, “Our theory does not claim that self-control (or self-control and opportunity) is the *only* cause of crime. On the

contrary, we explicitly mention important causes of crime that self-control cannot explain (e.g., age).”

Gottfredson and Hirschi (1993) also discuss the complementary relationship of opportunity and self-control. They point out that opportunities to commit any random crime or an analogous act are limitless, while opportunities to commit a particular crime may be severely limited. “Self-control and opportunity may therefore interact for specific crimes, but are in the general case independent.” Gottfredson and Hirschi also point out that in many cases, self-control and opportunity are not independent. For example, they explain that a person who wishes to embezzle from a bank must first be employed in a bank; employment in a bank depends in part on (high) self-control and its consequences. The generality of the theory thus “stems from its conception of the offender, a conception that must be taken into consideration before situational or ‘structural’ influences can be understood” (Hirschi and Gottfredson, 1993, p. 50)

The Tautology Issue

The general theory has also been criticized as being tautological (Akers, 1991; Gies, 2000; Marcus, 2004; Stylianou, 2002). Akers claims that Gottfredson and Hirschi do not define self-control separately from the propensity to commit crime, thereby creating a tautological argument. He writes: “Gottfredson and Hirschi use ‘low self-control’ and ‘high self-control’ simply as labels for this differential propensity to commit crime...it would appear to be tautological to explain the propensity to commit crime by low self-control” (Akers, 1991, p. 204). Akers maintains that, in order to avoid tautology, independent indicators of self-control are required; Gottfredson and Hirschi do

not indicate exactly how one is to measure self-control separately from crimes or the propensity to commit crime.

Stylianou (2002, p. 536) also argues that we must pay more attention to the distinction between independent and dependent variables. He claims this is important because failure to do so may produce results that are tautological. For example, he explains that “when modeling low self-control as a *cause* of crime and analogous behaviour, one cannot use crime and analogous behaviour as measures of low self-control”. Doing so would not result in a causal test; rather it may only produce evidence of versatility.

Gottfredson and Hirschi do not consider the charge of tautology a problem. In fact, they consider it a compliment. They explain:

the charge of tautology is...an assertion that we followed the path of logic in producing an internally consistent result. We started with a conception of crime, and from it attempted to *derive* a conception of the offender. As a result, there should be a strict definitional consistency between our image of the actor and our image of the act (1993, p. 52).

Gottfredson & Hirschi point out that the charges of tautology suggest that a theory that is non-tautological is preferable. They then ask what such a theory would look like. They argue that such a theory would advance definitions of crime and criminals that are independent of each other. This, they claim, would result in a theory that could not “show an empirical connection between their definition of crime and their image of the offender, and must therefore be said to be false” (1993, p. 52). In other words, according to Gottfredson and Hirschi, the definition of offender should in fact come from the definition of the crime. Without the interdependence of the two, there would be no empirical connection between them, which would lead to inaccurate definitions of each.

Attitudinal versus Behavioural Measures

Gottfredson and Hirschi often criticize other researchers for their problematic conceptualization of self-control. In the literature, opinions vary regarding the use of attitudinal and behavioural measures in defining self-control. Gottfredson and Hirschi prefer behavioural measures, such as whether people fastens their seat belts (Keane, Maxim, and Teevan, 1993) rather than attitudinal measures. However, theorists have noted that behavioural measures would not give a clear understanding of whether self control is predicting crime or whether behaviours similar in nature are merely predicting each other (Evans et al. 1997; Geis, 2000).

Stylianou (2002, p. 553) points out that, after reviewing the literature, he has found that many studies supporting the General Theory of Crime have failed to make a clear distinction between attitudinal and behavioural variables; therefore the results of some studies need to be questioned. One solution to this problem, he claims, is to have a “strict distinction between attitudes, as elements, and behaviours, as manifestations, of low self-control”. He suggests a general solution to the problem is to model attitudes as causes, and behaviours as effects. Stylianou (2002, p. 538) claims the main advantage to this solution is that it leaves no room for tautology, as conceptually, attitudes and behaviours are mutually exclusive categories. He also points out two disadvantages of using attitudes as causes of behaviour. First, as Gottfredson and Hirschi point out, attitudinal measures are less valid than behavioural measures. Second, the correlation between attitudes and behaviours is unstable and conditioned by situational factors. In response to these disadvantages, Stylianou argues that the risk of using behavioural

predictors of behaviour is too great to be ignored. He also argues that, although problematic, the instability between attitudes and behaviours is not detrimental.

Marcus (2004) claims that, in order for the construct of self-control to be valid, rather than asking respondents for introspective self-assessments of attitudes or external events, questionnaire items should be asking for overt behavioural incidents. Pratt & Cullen (2000) point out that the results of their meta-analysis of 21 empirical studies of the theory were not significantly affected by whether self-control was measured by attitudinal or behavioural measures.

Operationalizing Self-Control

The primary concern I have about Gottfredson and Hirschi's General Theory of Crime, and the focus of my research, is the way in which the concept of self-control is operationalized. As Geis (2000) points out, researchers typically find that, more often than not, people who commit traditional kinds of criminal acts lack self-control (however it may be defined). They also find, however, that there are many people who do not fit the criteria used to define self control that also break the law, smoke, have illicit sex, and gamble, etc.

Miller and Burack (1993) also claim that, focusing on how low self-control manifests itself in criminal behaviour, Gottfredson and Hirschi fail to pay attention to other conditions that may also contribute to low self-control, such as "inadequate housing, high unemployment, institutional discrimination, and physical deterioration of neighborhoods" (p. 129). Sellers (1999) further suggests that, although her studies involving violence between intimate partners have shown some support for the theory,

future research should explore the impact gender may have on the effects of self-control, as well as on other forms of control relating to the use of violence between intimates.

Many theorists claim that in order for the theory to be valid, there is a need for a self-control measure that is independent of crime (Akers, 1991; Geis, 2000; Marcus, 2004). As discussed earlier in the 'generality' section of this paper, Gottfredson and Hirschi do not perceive any problems with the way they operationalize self-control to be a problem. They claim that byproducts of self-control, "may be rightly used to index levels of self-control, or they may serve as outcome variables, depending on the researcher's interests." (Hirschi and Gottfredson, 1993, p. 49). They clarify: "For example, school performance or drug use, both of which are affected by self-control, can also measure individual differences in self-control. Likewise, "temper" and "cautiousness" are caused by self-control, and they too may be used as indicators of it". According to Gottfredson and Hirschi, the best indicators of self-control are the acts they use self-control to explain, such as criminality, delinquency, and reckless acts.

In the subsequent sections of this chapter, I argue for a stronger focus on empathy and impulse control as primary measures of self-control, since both are measures that are independent of crime. Research on both empathy and impulse control suggest that each may play a role in one's likelihood of becoming involved in violent behaviour.

Empathy

Empathy has been defined as the capacity for an individual to "feel the experiences, needs, aspirations, frustrations, sorrows, joys, anxieties, hurt, or hunger of others as if they were [one's] own" (Clarke, 1980, p. 187). Empathy (or a lack thereof)

may be useful in explaining certain behaviours. For example, an impulse to engage in a violent attack may be preempted or moderated by a sense of empathy. Nussbaum et al. report, “A lack of empathy could theoretically heighten the risk of violent assault entering one’s behaviour repertoire” (Nussbaum, Collins, Cutler, Zimmerman, Farguson and Jacques, 2002, p. 23). Research on empathy has shown support for such an assertion, pointing to a positive relationship between empathy and prosocial behaviour, and a negative relationship between empathy and both aggression and antisocial behaviour (Bovasso, Alterman, Cacciola, Rutherford, 2002; Miller and Eisenberg, 1988).

Numerous studies investigating sexual offences have also shown sexual offenders to be significantly less empathetic than non-offenders (e.g. Rice, Chaplin, Harris, and Coutts, 1994). Low levels of empathy are not limited to sexual offenders however. Low levels of empathy have characterized people convicted of other offences such as murder, assault, and property offences (Hoppe and Singer, 1977).

Among delinquents, a lack of empathy is more evident in those who exhibit aggressive or violent behaviours than others (Ellis, 1982; Short and Simeonson, 1986). In fact, many programs designed to reduce recidivism rates among violent offenders incorporate empathy-building exercises into their rehabilitation programs. A study conducted on such a program reported that those offenders who completed the program, including the empathy-building exercises, were significantly less likely to commit subsequent criminal offences in the 12 months following completion of the program (Myers, Burton, Sanders, Donat, Cheney, Fitzpatrick and Monaco, 2000). Such results lend support to the notion that reduced levels of empathy are related to violent criminal offending. Other studies have also shown empathy to be an inhibitor of vandalism, theft,

and aggression. Offenders who are unable to empathize with their victims are more likely to engage in aggressive, violent behaviour during the course of committing an offence (Cunliffe, 1992; Nussbaum et al., 2002).

Psychological research has shown that individuals who lack empathy and who tend to demonstrate aggressive or violent behaviour may also be lacking prosocial skills (Bovaasso et al., 2002; Miller and Eisenberg, 1988). Individuals who are diagnosed with Antisocial Personality Disorder are characterized as ‘frequently lack[ing] empathy and tend to be callous, cynical, and contemptuous of the feelings, rights, and sufferings of others’ (American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 2000, p. 703). Such individuals tend to be irritable and aggressive, (as is indicated by repeated physical fights and/or assaults), fail to conform to social norms, lack remorse for their actions, lack self-control, and use deceitfulness and repeated lying for personal profit or pleasure (DSM-IV-TR, 2000; Morana, 1999). While not all individuals who demonstrate violent criminal behaviour have Antisocial Personality Disorder, the diagnostic features of the disorder lend support to the notion that a lack of empathy plays a role in the likelihood of an individual displaying violent behaviour.

While there is widespread support suggesting that empathy is related to violent criminal offending, findings are mixed regarding the type of offences that are related to a lack of empathy. For example, those convicted of crimes such as murder, rape, pedophilia, and property offences were found to have low levels of empathy, however, no significant differences were shown according to offence type (e.g. Hoppe and Singer, 1977).

Impulse Control

Impulsivity is referred to as the degree to which a person acts upon a wish or desire without considering the consequences (Nussbaum et al., 2002). Individual impulse control (or lack thereof) may be an important factor in one's likelihood of becoming involved in criminal behaviour. In fact, impulsivity appears to be one of the "few personality variables that remains relatively unchallenged as a mediating factor in criminal violence" (e.g. Nussbaum et al., 2002, p. 24). More specifically, research has shown evidence for differences in impulsivity between violent and non-violent offenders (Nussbaum et al., 2002). One study, which attempted to address this difference, interviewed offenders on the nature of their crimes. Interviewees included those who admitted to committing crimes on the spur of the moment as well as those who methodically planned their crimes. The findings of the study showed impulsive criminals committed a greater number of violent offences than had the planning-type criminals (e.g. Erez, 1980).

Impulsivity is one of the characteristics typically present when labeling a criminal a psychopath. Studies involving psychopaths have shown that, while psychopaths demonstrate extreme difficulties in controlling their impulses, they also demonstrate "a propensity to commit crimes of a more violent nature" (Nussbaum et al., 2002, p. 24; Quinsley, 1995; Raine, 1992). Impulsivity is also a characteristic of individuals who are diagnosed with Antisocial Personality Disorder. As previously discussed with regard to empathy, individuals with Antisocial Personality Disorder are often involved in aggressive/violent behaviour. The pattern of impulsivity for those with Antisocial Personality Disorder may be manifested in a failure to plan ahead, decision-making on

the spur of the moment, and general irresponsibility, which often leads to sudden life changes (e.g.: job, residence, relationships) and irritable, aggressive behaviour (DSM-IV-TR, 2000).

Another disorder in which impulse control is directly related is Intermittent Explosive Disorder. Sometimes considered rare, but probably much more common than realized, this disorder is characterized by “discrete episodes of failure to resist aggressive impulses resulting in serious assaults or destruction of property” (DSM-IV-TR, 2000, p. 663). Individuals with this disorder often report intense impulses to be aggressive prior to their acts of violence. The anger that occurs, as well as the degree of aggressiveness expressed during an episode, is grossly out of proportion to any provocation or psychosocial stressor (DSM-IV-TR, 2000). Although Intermittent Explosive Disorder is rare, and certainly not all violent criminals have the disorder, the fact that impulse control is a central feature lends support to the notion that impulsivity is sometimes linked to violent criminal behaviour.

Some social programs used to reduce recidivism rates of young offenders employ social skills training designed to increase offenders’ internal locus of control. By focusing on internal control, these programs aim to increase offenders’ ability to control their impulses. A social skills training program, in a state correctional institution for adolescents, found that the program helped reduce beliefs supporting aggression as well as aggressive behaviour in the young offenders who took part in the program (Guerra and Slaby, 1990). As discussed previously, the degree of impulsivity differs from one offender to the next, and therefore among offence types. The literature suggests that this

may be the key to developing effective rehabilitative programs for each individual offender (Nussbaum et al. 2002).

The Importance of Social Bonds to the Understanding of Self-Control

Prior to Gottfredson and Hirschi's General Theory of Crime, Hirschi (1969) explicitly explained deviance, or one's lack of deviant behaviour, through the 'Social Bonding Theory'. Although he later abandoned this theory, it is one that I feel cannot be left out of our understanding of self-control. As will be discussed in detail, it is the elements of the Social Bonding Theory that are responsible for the development of empathy and impulse control. Hirschi explains that the reason most of us behave so well is because we form a strong bond to conventional society. This bond is comprised of four elements. These elements include: attachment, commitment, involvement, and belief.

Attachment refers to an individual's ties to significant others (usually parents, peers, school teachers). Commitment refers to one's level of investment in conventional goals, such as education or employment. Involvement refers to the time and energy an individual spends taking part in conventional activities (i.e. school, community events). Finally, belief refers to the degree to which the individual accepts and adheres to societal rules and values (Hirschi, 1969). The basic premise of the theory is the greater an individual's social attachments, commitments, involvements, and beliefs, the less likely s/he will become involved in delinquent behaviour.

Research regarding youth delinquency and violence supports the basis of the social bonding theory. Research also lends support to the notion that social bonds are

linked to the development of empathy and impulse control. The following is a discussion of such research findings.

Early attachment (or social bonding) provides a framework which influences our ability to form close and meaningful relationships with others (Bowlby, 1988). When weak bonds are established between a child and caregiver, the potential for the development of unhealthy relationships is set in motion (e.g. Nussbaum et al., 2002). Inadequate bonding experiences tend to result in the individual perceiving him/herself as unlovable or inadequate, and others as rejecting (Bowlby, 1979). Individuals with insecure attachments would have “relatively low self-esteem, would be unable to form healthy relationships and, therefore, would be more likely to commit crimes” (Nussbaum et al., 2002, p. 27). Although attachment research is limited, with regard to the type of offending that occurs, there is evidence that criminals who engage in violence have difficulties bonding with others. One study interviewed the families of death row inmates in the pursuit of tracing attachment patterns. Based on the interviews, as well as social service records, the study revealed that most of the inmates experienced sexual or physical abuse by their parents (Feldman, Mallouh, and Lewis, 1986). The authors of the study identified this lack of parental attachment as a contributing factor to their violent behaviour. Another study, attempting to find direct support for the violent versus non-violent levels of attachment, also found that secure attachment was negatively correlated with violent criminality (e.g. Shoham, Rahav, Markowski, Chard, Meuman, Ben-Haim, Baruch, Esformes, Schwarzman, Rubin, Mednick, and Buickhuisen, 1987). In other words, the more experiences of secure attachment that one has, the less likely s/he is to become involved in violent criminal behaviour. This negative correlation applied to

violent offenders who were categorized as impulsive, rather than those who planned their violence.

A study conducted by Stein and Brown (1991), regarding the abilities of 30 male violent offenders to develop positive group dynamics in therapy, also found support for the social bonding theory. One of the most common characteristics of the group members was their inability to form attachments. Their lack of early attachment appears to have influenced their involvement in violent behaviour as well as their ability to positively interact with others, which also may constitute part of their “inability to empathize and their failure to inhibit aggression” (Nussbaum et al., 2002, p. 28).

Research on psychopaths has shown that a psychopath’s lack of empathy may be directly related to a lack of bonding. This lack of healthy attachment may biologically weaken the psychological identification with another (e.g. Meloy, 1998).

The predominance of prosocial and antisocial influences in an individual’s life will guide the level of prosocial or antisocial behaviours engaged in by that individual throughout his/her life (Herrenkohl et al., 2003). Youth who become involved with a peer group that reinforce the use of violence and are involved in delinquent acts are at an increased level of risk of becoming violent themselves (Herrenkohl et al., 2003). Youth who come from an abusive home who become involved with delinquent peers are at an even higher risk (e.g. Battin, Hill, Abbott, Catalano, and Hawkins, 1998). It is common for adolescents growing up in an abusive home to turn to delinquent peer groups. Abuse in the home influences beliefs surrounding the use of violence, which encourages involvement with antisocial, delinquent peers. Involvement in an antisocial peer group further socializes adolescents toward antisocial behaviour (e.g. Herrenkohl et al., 2003).

Social bonds play an important role in determining what type of behaviour a child/adolescent will engage in. Children who have strong bonds to prosocial units, such as the family and school, will be less likely to become involved in behaviours with negative outcomes (Herrenkohl et al., 2003). On the other hand, those who have strong bonds to antisocial units, such as antisocial peer networks, will have an increased risk of becoming involved in behaviour with negative outcomes. Individuals will engage in behaviour that reinforces the beliefs and norms of the unit which s/he is a part of. Behaviours that are not approved of by those with whom the child is bonded, are less likely to be engaged in. Challenging the norms and expectations of the dominant influential unit runs the risk of weakening the bond with that unit (Herrenkohl et al., 2003). In other words, the expectations of those with whom a child has a strong bond, will influence the behaviour of the child. The stronger the bond, the more influential it will be.

Involvement/bonds with school have an influence on the likelihood of young people becoming involved in delinquent behaviour. In their National Longitudinal Study of Adolescent Health (ADD Health), Blum, Ireland, and Blum (2003) found some interesting relationships between school and delinquent behaviour. They found an inverse relationship between GPA and violence, for both males and females. They also found that skipping school leads to an increase in the likelihood of violent behaviour in males. They concluded that for males who felt connected to school (i.e.: being treated fairly in school; there is an adult with whom he can relate), the odds of being involved in violence drops significantly. Surprisingly, this is not the case for females. Blum et al. (2003) report that consistent with other studies, school may not provide the same comfort

for females as it does for males. School has also been shown to have a more positive effect on male self-esteem than it does on female self-esteem.

Expectations for school completion were also found to have an influence on the likelihood of delinquent behaviour. Blum et al. (2003) found that females who have expectations of completing school are less likely to take part in violent behaviour. This relationship was not found to be true for males, as expectations of completing school did not appear to play a role in the violent behaviour of males. They also report that numerous other studies have shown that parental expectations have an influence on both male and female involvement in violent behaviour: the higher the parental expectations for school completion, the less likely the child will be involved in violent behaviour.

Given the extensive literature supporting a link between social bonds to empathy and impulse control, as well as a link between empathy and impulse control to violent criminal behaviour, an attempt to measure self-control without all three of these concepts would be inadequate. This study focuses on the inclusion of social bonds, empathy, and impulse control as primary measures of self-control.

Chapter Three

Methodology and Research Questions

Chapter Introduction

The following chapter provides a general overview of my methodology, and includes: 1) a brief overview of Lethbridge, Alberta, 2) research questions, 3) data collection through the use of a survey, 4) a discussion of validity, 5) ethical issues regarding research involving minors, and finally, 6) sample characteristics. The overview of Lethbridge provides the basic demographics of the city in which the research was conducted. The research questions provide the basis of my research. As such, the survey was designed to address these questions. The discussion of the use of surveys illustrates why I chose a survey as my form of data collection. There is also a discussion regarding the specific types of questions involved in the survey, including the development of indexes for each of the primary variables. As with any type of data collection as well as research involving minors, attention to certain ethical issues is required; therefore, I will also discuss these ethical issues, as they pertain to my research. Finally, I will provide an overview of the sample characteristics of the group used in this study.

Brief Overview of Lethbridge, Alberta

The city of Lethbridge has a population of approximately 77,000, making it Alberta's fourth largest city by population (Nationmaster, 2005). The city's population is steadily increasing, as it has grown an average of 2.2% a year from 2002 to 2005. In the past, coal was the leading industry in Lethbridge; currently, service and trade industries generate over half of all of the occupations in Lethbridge (City of Lethbridge, 2005).

The ethnic composition of Lethbridge is as follows: 90.2% European, 3.5% Aboriginal, 1.8% Chinese, 1.8% Japanese, and 2.7% other. The most commonly

observed religion is Christianity. According to the 2002 census, 50,245 Lethbridge residents indicated they were Christian (Nationmaster, 2005). Of these, 62.6% were Protestant, 30.4% were Catholic, 0.6% were Christian Orthodox and 6.3% were unspecified. While Statistics Canada does not report the number of Mormons in their census report separately, it is estimated that there are 10,000 members of the Church of Jesus Christ of Latter Day Saints in Lethbridge. At roughly 10% of the city's population, this is much higher than the national average of 0.5% (Nationmaster, 2005).

Research Questions

I developed a number of research questions designed to provide further insight into the factors contributing to delinquency among high school students in Lethbridge. Derived from my review of literature, the research questions were designed to address the concepts of empathy, impulse control, and social bonds as measures of self-control. More specifically, the questions addressed the relationship between social bonds, empathy and impulse control, and one's likelihood of becoming involved in violence, vandalism, and theft. The overall goal was to test these concepts as primary measures of self-control, thus contributing to Gottfredson and Hirschi's General Theory of Crime.

The following questions were of primary focus:

- 1) Is there a relationship between one's level of empathy, impulse control, and social bonds, and the type of criminal activity one is involved in?
- 2) Is there a relationship between one's level of empathy and one's likelihood of being involved in violent behaviour?
- 3) Is there a relationship between one's level of impulse control and one's likelihood of being involved in violent behaviour?
- 4) Is there a relationship between one's social bonds and one's likelihood of being involved in violent behaviour?
- 5) Is there a relationship between one's level of empathy and one's likelihood of being involved in acts of vandalism?

- 6) Is there a relationship between one's level of impulse control and one's likelihood of being involved in acts of vandalism?
- 7) Is there a relationship between one's social bonds and one's likelihood of being involved in acts of vandalism?
- 8) Is there a relationship between one's level of empathy and one's likelihood of being involved in theft?
- 9) Is there a relationship between one's level of impulse control and one's likelihood of being involved in theft?
- 10) Is there a relationship between one's social bonds and one's likelihood of being involved in theft?

In addressing my research questions there were a number of key variables that needed to be measured. The primary variables included: delinquent acts such as violence, vandalism, and theft, as well as empathy, impulse control, and social bonds. Items for each of these variables were incorporated into my questionnaire, making it possible to create indexes for each.

Data Collection in the Form of a Survey

As with all methods of data collection, survey research has its strengths as well as weaknesses. I have reviewed the literature and feel confident that a group-administered questionnaire was a useful tool in collecting the data I needed for my research. One major advantage of using a group-administered questionnaire was that it enabled me to acquire data from a large number of respondents relatively quickly, and inexpensively (Jackson, 1988, 1995; Palys, 1997). Another benefit that a group-administered questionnaire provided was the opportunity for face-to-face contact, enabling me to answer any questions that the respondents had while completing the survey (Jackson, 1988, 1995; Palys, 1997). It was my hope that, by being able to provide clarification, there would be less missing data due to non-responses or misunderstood questions. Finally, and perhaps the greatest advantage of my survey, is the fact that the survey

administration provided anonymity because of its self-administered format. Such a procedure improves validity (Jackson, 1995).

In order to address my research questions, I developed a questionnaire that was administered to students in two Lethbridge public high schools, (Lethbridge Collegiate Institute and Winston Churchill High School). Research shows that 16 and 17-year olds appear in court more often than any other youth age group (Juristat, 1999); therefore, I felt that this age group would provide the best sample, given my research questions.

The questionnaire consisted of open-ended, fixed-choice, and Likert-type questions. One set of questions asked about demographics. Such questions probed age, grade, gender, whether or not students were employed, if their mother and/ or father work, who they live with, number of siblings, and involvement in extracurricular activities. A second set of questions asked respondents to answer, “yes” or “no”, whether they had committed particular behaviours and delinquent acts. The third set of questions consisted of Likert items which were designed to measure empathy, impulse control, and social bonds. Five response categories were provided: ‘strongly disagree’, ‘somewhat disagree’, ‘unsure’, ‘somewhat agree’, and ‘strongly agree’. A fourth section, also consisting of Likert-type measures, asked students to describe themselves and their behaviours. Five response categories were offered: ‘does not describe me *at all*’, ‘hardly describes me’, ‘unsure’, ‘describes me pretty well’, and, ‘describes me *very well*’. In order to be sure that all of the respondents knew what I meant by the category ‘unsure’, I explained to them that it was only to be selected if they were unsure about how they felt about the statement. I instructed them that it was not to be interpreted as an option for

not understanding what the question was asking. Further, I let them know that if they were unclear about any of the statements, to please ask me to explain it to them.

The survey was administered to students in the Career and Life Management classes at the two schools in June 2005 and October 2005, and involved 16 classes. A total of 331 parental permission slips were handed out to students. Of these, 184 were signed and returned to the school, and all but two of the students completed a survey (both were absent on the day the survey was administered). The overall response rate for this survey was 55%. Given that I was unable to acquire data from students who did not take part in the survey, I am unable to report demographic differences between responders and non-responders.

Validity

For use in a regression analysis, I constructed indexes for the primary variables of interest. These include empathy, social bonds, impulsive behaviour, violent behaviour, vandalism, and theft. The empathy index is comprised of eleven items. Of the eleven items, eight are derived from the Interpersonal Reactivity Index (IRI). The alpha score for empathy in the IRI is 0.759. I did not use all of the fourteen possible items in the IRI, as there were additional questions I wanted to include in my index, that were not present in the IRI. The social bonds index also contains eleven items. These items were adopted from the family attachment and school bonding index used by McNulty and Bellair in their study of adolescent violent behaviour (2003). The alpha score for the family attachment index is 0.76, while the alpha score for school bonding is 0.73. I included a total of seven items from these two indexes, adding four of my own that inquired about

social bonds with peers. The impulsive behaviour index contains six items, none of which were taken from previously existing indexes. The violent behaviour, vandalism, and theft indexes were all derived from the Normative Deviance Scale (NDS). I added two additional items to the violent behaviour index, while leaving out one item from each of the vandalism and theft indexes found in the NDS. The alpha scores for each index, taken from the NDS are 0.95, 0.84, and 0.83, respectively.

A Cronbach's alpha score was calculated for each index used in my survey, in order to assess the extent which the index items tapped into the same underlying construct. The alpha scores for each index were sufficiently high. They are as follows: empathy: 0.759, social bonds: 0.807, impulsive behaviour: 0.747, violence: 0.746, vandalism: 0.608, and theft: 0.603 (see appendix C for individual scale items).

In addition to yielding high alpha scores, the questions intended to measure each of the conceptual variables (empathy, impulsive behaviour, social bonds, violence, theft, and vandalism) have very high face validity. A measure has face validity if, upon inspection, it appears to reflect the concept it was intended to measure (Jackson, 2003). The questions used in the survey for this study have obvious face validity. Asking the respondent about "feeling sorry", for example, has clear connections to empathy (see question A1 of empathy scale, appendix C). Similarly, asking the respondent about "acting on the spur of the moment without stopping to think" has clear connections to impulse control (see question C1 of impulsivity scale, appendix C).

Given the face validity of the index items, as well as the alpha scores for each of the indexes, I feel confident that my scales are reasonably valid measures of each of the concepts I intended to measure. Further, the fact that these indexes, for the most part,

yield significant relationships in subsequent multiple regression analyses, also makes it very likely that they were measuring the constructs they were intending to.

Ethical Issues

There are a number of ethical issues to be taken into consideration when doing social research. Ethical guidelines exist not only to protect the subjects, but also anyone who may be affected by the research, along with those conducting the research. A few guidelines were particularly pertinent to my project.

Informed consent requires that researchers may not include someone in a study until the potential participant is able to make an informed decision as to whether or not to participate. Informed consent is essential whenever participants are exposed to substantial risks or are asked to forfeit personal rights (e.g. Nachimas and Nachimas, 1987). If participants will be exposed to pain, physical or emotional injury, invasion of privacy, or psychological or physical stress, then informed consent must be fully guaranteed (Nachimas et al., 1987). Guidelines regarding the consent of dependent populations (minors for example) require researchers to obtain consent from the participating children, to the extent that they are capable of providing such consent. Researchers are also responsible for acquiring the consent of minors' parents or legal guardians prior to conducting their research.

In the case of my project, participants were not exposed to any risk, pain or injury, nor were they asked to forfeit any personal rights. By way of addressing the issue of informed consent, I attended classes prior to the respondents taking part in the survey, and explained exactly the nature of the survey as well as its intended purpose. In addition,

one week prior to administering the surveys, I sent permission slips home to parents that outlined the nature of the survey. Students who returned signed permission slips were able to participate in the study.

As an incentive for the students to return signed permission slips, I offered them a chance to win one of five \$10 gift cards to A&B Sound, or one of eight free dessert coupons to East Side Mario's Restaurant. Each student's signed permission slip acted as an entry ballot for the gift cards. Once the surveys were completed, I randomly selected winners from the signed permission slips.

Although informed consent sounds good in theory, it is not always possible or desirable. In fact, the use of deception in some research is necessary. For example, when people know they are being observed, they tend to act differently than they would on a regular basis, which can lead to problems with what the researcher is trying to measure (Jackson, 1988). In such cases, deception is used in order to gain an accurate depiction of people's behaviour. Given the nature of my research, I did not use any degree of deception, as I was not directly monitoring the respondents' behaviours. Rather, the questionnaire probed their attitudes, behaviours, and social relationships.

Voluntary participation is another ethical guideline that must be met. A researcher must respect the individual freedom of the potential participant to decline to participate, or withdraw from participating at any point during the study (Palys, 1997). Voluntary participation is problematic when captive audiences or institutionalized populations are used. When the researcher is in a position of power over the participants, it is questionable as to whether or not their participation is voluntary. If participants feel forced into participating, there may be an issue with the validity of the data. For

example, students may not answer questions truthfully as they may feel that their responses will be seen by their teacher, which may affect their grade or their relationship with their teacher. Students may also not want to answer certain questions but may feel forced to participate because their teacher, who is in a position of authority, is asking them to do so. In this case, the students may participate, but may not take the questions seriously. For these reasons, when conducting research with captive or dependent populations, researchers must take extra precautions to ensure that participants understand the voluntary aspect of the research, and that consent is not coerced (McTavish and Loether, 1999).

To minimize problems in this area, I explained that the teacher would not see any of the completed questionnaires. Students handed in their questionnaire by placing them into a box with a slot in the top. I hoped that this would help to convince the respondents that their questionnaire would not be linked to him/her personally, nor would the teacher be able to identify anyone by looking at the completed questionnaire. I also asked that the teacher not walk around the classroom while students filled out the questionnaire, as students might be less likely to answer truthfully if the teacher is nearby. I too remained at the front of the classroom for the same reason. Students were also instructed not to put their name on the survey. I also suspect that the fact that I did not know any of the respondents personally helped minimize their feelings of apprehension.

The research protocol for this study was approved by the University of Lethbridge Human Subjects Research Committee, as well as the Superintendent of the Lethbridge School Board District 51.

Sample Characteristics

As indicated, a total of 182 students completed the survey during class time, which took an average of 15 minutes to complete. The sample consisted primarily of grade ten (50%) and eleven (45%) students, as well as some grade twelve students (5%). The average age of respondents was 15 years old. Respondents ranged in age from fourteen (2%) to nineteen years old (1%) (15 yrs: 36%; 16 yrs: 47%; 17 yrs: 11%; 18 yrs: 3%). For the purpose of my analysis, those aged 18 or 19 were grouped together in one category labelled 18+. Male students involved in the study slightly outnumbered females, 54% to 46%, respectively (see table 3.1).

Of the sample, students who identified with being 'white' greatly outnumbered those who did not (88% to 12%). Those who did not identify with being 'white' were categorized as non-white. Twenty seven percent of the 'non-white' category consisted of those who identify with being Native (3% of the total sample).

Just over half (58%) of the respondents reported living with both parents, while 25% reported living in a single-parent home. Respondents reporting living with one of his/her parents and a step-parent constituted 12% of the sample, while 5% report an 'other' form of living arrangement. When asked about their parent's employment, 90% of fathers and 84% of mothers were reported as being employed. The average number of siblings for each respondent in this sample was two, with an overall range of 0 to 11.

Over half (57%) of the sample indicated that they were employed. The average number of hours per week of those who are employed was 17, ranging from one hour a week to 55 hours of work a week. Similarly, 58% of the respondents reported being involved in some type of extracurricular activity. Of those who take part in

extracurricular activities, the average number of hours a week was 9, with a range of one to 33 hours of extracurricular activity a week.

TABLE 3.1: Sample Characteristics**Gender**

	Frequency	Percent
Male	98	53.8
Female	84	46.2
Total	182	100.0

Age

14	4	2.2
15	66	36.3
16	86	47.3
17	20	11.0
18+	6	3.3
Total	182	100.0

Grade

10	91	50
11	81	44.5
12	10	5.5
Total	182	100.0

Race

White	160	87.9
Black	1	0.5
Native	6	3.3
Asian (Oriental)	4	2.2
E. Indian or Pakistani	2	1.1
Other	9	4.9
Total	182	100.0

Race (two categories)

White	160	87.9
Non-White	22	12.1
Total	82	100.0

Living Arrangements (who respondent lives with)

Mother & Father	105	57.7
Mother Only	34	18.7
Father Only	12	6.6
Mother/Father & Step-Parent	22	12.1
Other	9	4.9
Total	182	100.0

Table 3.1 continued

Frequency **Percent**

Number of Brothers and/or Sisters

0	11	6.0
1	74	40.7
2	52	28.6
3	23	12.6
4	9	4.9
5	8	4.4
6	2	1.1
7	1	0.5
8	1	0.5
11	1	0.5
Total	182	100.0

Father Job

Yes	164	90.1
No	18	9.9
Total	182	100.0

Mother Job

Yes	153	84.1
No	29	15.9
Total	182	100.0

Respondent Job

Yes	103	56.6
No	79	43.4
Total	182	100.0

Respondent's Hours of work per week

0	79	43.4
1-10 hours	30	16.5
11-20 hours	45	24.7
21-30 hours	21	11.5
31-40 hours	6	3.3
41+ hours	1	0.5
Total	182	100.0

Respondent Extracurricular Activity

Yes	106	58.2
No	76	41.8
Total	182	100.0

Table 3.1 continued

Frequency **Percent**

Respondent's Hours of extracurricular activity per week

0	76	41.8
1-10 hours	75	41.2
11-20 hours	25	13.7
21-30 hours	5	2.7
30+ hours	1	0.5
Total	182	100.0

Chapter Four

Findings

Chapter Introduction

To aid in answering my research questions I conducted a multiple regression procedure, using SPSS software, with all variables entered simultaneously into the regression equation. The results of the analysis are discussed in three sections below, using violent behaviour, theft, and vandalism as separate dependent variables. Independent variables of primary interest were empathy, social bonds, and impulsive behaviour. The variables were designed to measure the lifetime extensiveness of each behaviour. Additional independent variables, including gender, grade (9, 10, 11, 12), age, race (white, non-white), hours of work per week, hours of extracurricular activity, living in a single parent home, and living in a two-parent home were included as a secondary interest. The goal was to determine what, if any, of the independent variables are predictors of one's likelihood of becoming involved in violence, vandalism and/or theft. Respondents were also asked if they considered themselves to be religious, and if so, what their religion is. This variable has been left out, as it was an open-ended question that did not yield sufficient results for appropriate use in the analysis.

In order to assess potential relationships between the independent variables, variables were entered into a correlation matrix (See correlation matrix in appendix E). Several significant correlations were observed, between variables where one would indeed expect there to be a relationship. For example, there is a significant correlation between age and grade; the older one is, the higher the grade one is expected to be in. There is also a significant correlation identified between empathy and both impulsive behaviour, and social bonds. This significant correlation lends further evidence that these variables are linked to the same overarching phenomenon, self-control. An additional

correlation is observed between gender and empathy, with "maleness" being significantly correlated with lower levels of empathy.

The regression procedure provides a number of ways to gain insight into the relationship between variables. The primary features I am concerned with are: the Anova significance, the adjusted R square, the significance of each variable, the 'beta' coefficient for each variable, the 'B' coefficient for each variable, and finally, the semi-partial correlation squared. The Anova significance indicates whether or not the independent variables are significant predictors of the dependent variable. In order for the independent variables to be considered significant predictors of the dependent variable, the value of Anova must fall between .000 and .050. The adjusted R square shows the percentage of the variation in the dependent variable that can be explained by the variation in the independent variables. The significance for each variable shows whether or not the independent variable is a significant predictor of the dependent variable. In order to be significant, the value must be between .000 and .050. The 'beta' coefficient for each of the variables shows which independent variable has the most impact (is the best predictor) on the dependent variable (the value closest to 1, in absolute values, has the most impact on the dependent variable). The 'B' coefficient shows the direction of the relationship between the variables. A positive (+) value shows a positive relationship: as the value for the independent variable increases, the value of the dependent variable will also increase. On the other hand, a negative (-) value shows an inverse relationship: as the value of the independent variable decreases, the value of the dependent variable will increase. The semi-partial correlation squared is a value derived from taking the 'partial correlation' value in the regression output for each variable, and

squaring it. This value tells us the unique contribution of that particular variable, independent of the effects of any other variables. This is an important value, as it tells us how much R squared would be reduced if we removed that variable from the regression analysis. (The higher the R squared value, the better the regression model).

Also included in this chapter is a discussion of the research questions and how the results of this study aided in answering each of them.

Data Transformation and Outliers

All variables were reflected or transformed, as needed, in order to mitigate the effects of excessive skewness and kurtosis. The variables that required a square root transformation include vandalism, theft, violent behaviour, and hours of extracurricular activity (see appendix D for skewness and kurtosis values, before and after transformation). Variables that needed to be reflected include empathy and social bonds. For appropriate use in the multiple regression analysis, some categories of variables had to be combined to avoid a 90%-10% split in nominal variables. The category for race was changed from having 6 categories, to having only 2, which included 'white' and 'non-white'. Univariate outliers were observed in two variables: age and hours worked. Age was therefore recoded so that respondents who were over the age of 18 became part of an '18+' category. Similarly, those who reported working more than 30 hours per week, became part of a '30+' hours per week category. In order to detect multivariate outliers, I conducted a Mahalanobis distance test. For my data, guidelines suggest a maximum critical value of 31.3. Results of the Mahalanobis distance test indicate a

maximum value of 27.921 for my data, indicating that there are no multivariate outliers.

There were no missing values in this analysis.

The results of the initial regression analysis indicated that the index for violent *attitudes* as an independent variable should be removed from the final analysis. Due to an obvious link between violent attitudes and violent behaviours, I found that violent attitudes overpowered the predicting potential of all other variables. For this reason, the violent attitudes index was removed from the regression analysis.

Violent Behaviour

The results of the analysis, with violent behaviour as the dependent variable are as follows. The Anova significance value in this model indicates that the independent variables are significant predictors of violent behaviour. The adjusted R square value indicates that in this regression model, 34.2% of the variation in violent behaviour can be explained by the variation in the independent variables. This regression model reveals a significant correlation between violent behaviour and three of the independent variables.

TABLE 4.1: Multiple Regression Results (D.V.: Violent Behaviour)

	Regression Coefficients (<i>B</i>)	Standardized Regression Coefficients (β)	Squared Semi-Partial Correlations (sr_1^2)
Empathy	.779**	.336	.065
Impulsive Behaviour	.153**	.256	.049
Hours of work per week	.007**	.171	.024
Social Bonds	.261	.124	.013
Race	-.162	-.120	.013
Age	.069	.125	.007
Hours of extracurricular activity per week	.024	.087	.006
Living in a single parent home	.002	.002	.002
Gender	-.027	-.030	.0006
Living in a 2-parent home	-.026	-.029	.0004
Grade	-.008	-.011	.000004
CONSTANT	-.819**		

** Denotes significance

$R = .618$, adjusted $R^2 = .342$

The three significant variables are empathy, impulsive behaviour, and hours of work per week. The beta coefficient values indicate that empathy is the strongest predictor of violent behaviour, followed by impulsive behaviour, and finally, hours of work per week. The B coefficients for the three variables indicate that the more

impulsive one is, the more likely they are to be involved in violent behaviour. Similarly, the more hours of work per week one works, the more likely they are to be involved in violent behaviour. The interpretation of the B coefficient for empathy is slightly different. Although the value indicated in the regression output is a positive (+) value, there is actually an inverse relationship between empathy and violent behaviour. In other words, the more empathy one has, the *less* likely s/he will be involved in violent behaviour. The reason for the difference in interpretation of the variable empathy is due to the fact that the variable had to be reflected in order to minimize its skewness and kurtosis (minimal skewness and kurtosis is required in a regression analysis). Interpretation of a reflected variable changes due to the fact that a greater value for the original variable translates into a smaller value for the reflected variable.

It is also important to note that, although the regression analysis did not report the social bonds or the race variables as significant, both were very near the cutoff mark for significance (.056 & .052 respectively). The B coefficient value for social bonds indicate that the more socially bonded one is, the *less* likely s/he will be involved in violent behaviour. Interpretation of the social bonds variable is similar to that of empathy, as the variable social bonds also had to be reflected to minimize skewness and kurtosis. The B coefficient for race indicates that those who do not identify with being white are more likely to be involved in violent behaviour (than those who identify themselves as being white).

The semi-partial correlation squared value, for each of the variables discussed above, indicates the unique contribution each variable has to the regression model. Empathy accounts for 6.5% of the unique contribution to this model, impulsive behaviour

accounts for 4.97%, hours of work per week accounts for 2.46%, race accounts for 1.39%, and finally, social bonds account for 1.34% of the unique contribution to this model, without any overlap from other variables. These figures tell us how much the R squared value would be reduced if that variable was removed from the analysis. For this particular analysis, the R square is 0.382. If empathy was removed from this model, the R square would be reduced to 0.317, thus weakening the model.

Vandalism

The results of the analysis, with vandalism as the dependent variable are as follows:

TABLE 4.2: Multiple Regression Results (D.V.: Vandalism)

	Regression Coefficients (<i>B</i>)	Standardized Regression Coefficients (β)	Squared Semi-Partial Correlations (sr_i^2)
Empathy	1.115**	.259	.038
Impulsive Behaviour	.225**	.204	.031
Race	-.322**	-.129	.016
Social Bonds	.375	.096	.008
Hours of extracurricular activity per week	.041	.080	.005
Age	.099	.098	.004
Hours of work per week	.005	.067	.003
Living in a 2-parent home	-.131	-.079	.003
Gender	-.107	-.066	.002
Living in a single parent home	-.088	-.047	.001
Grade	-.016	-.012	.00006
CONSTANT	-2.850		

** Denotes significance
 $R = .499$, adjusted $R^2 = .201$

The Anova significance value indicates that the independent variables significantly predict the variation in vandalism. The adjusted R square value indicates that in this regression model, 20.1% of the variation in vandalism can be explained by the variation in the independent variables. This regression model reveals only two significant predictors of vandalism, namely, empathy and impulsive behaviour. The beta coefficient values indicate that empathy is the strongest predictor of vandalism, while impulsive behaviour is the second strongest. The B coefficients in this model indicate that the more empathic a person is, the *less* likely one will be involved in vandalism (as explained in the previous section, the variable empathy has been reflected, thus an inverse relationship is noted, despite a positive B value). Not surprisingly, the more impulsive one is, the more likely one will be involved in vandalism.

It is also important to note that, although the regression analysis did not report the variable race as significant, it comes near the cutoff mark for significance (.058). The B coefficient value indicates that those who do not identify themselves as white, are more likely to be involved in acts of vandalism (than those who identify themselves as white).

The semi-partial correlation squared value for each of the variables discussed above, indicating the unique contribution to this model are as follows: empathy: 3.88%, impulsive behaviour: 3.16%, and race: 1.61%. If empathy, for example, were to be removed from this model, the R square value would be reduced from 0.249% to 0.211%, thus, weakening the model.

Theft

The results of the analysis, with theft as the dependent variable are as follows:

TABLE 4.3: Multiple Regression Results (D.V.: Theft)

	Regression Coefficients (<i>B</i>)	Standardized Regression Coefficients (β)	Squared Semi-Partial Correlations (sr_i^2)
Impulsive Behaviour	.262**	.273	.056
Social Bonds	.475	.140	.017
Living in a single parent home	.193	.119	.007
Hours of extracurricular activity per week	.037	.084	.006
Race	-.176	-.081	.006
Empathy	.298	.080	.003
Gender	.084	.060	.002
Living in a two parent home	-.078	-.054	.001
Grade	.059	.050	.001
Hours of work per week	.002	.029	.0006
Age	-.013	-.015	.0001
CONSTANT	-1.293		

** Denotes significance

$R = .407$, adjusted $R^2 = .111$

The Anova significance value indicates that the independent variables significantly predict the variation in theft. The adjusted R square value indicates that in this regression model, 11.1% of the variation in the theft can be explained by the variation in the independent variables. This regression model reveals impulsive behaviour as the only significant, and therefore strongest, predictor of theft. The B coefficient indicates that the more impulsive one is, the more likely one will be involved in theft. The semi-partial correlation squared value for impulsive behaviour in this model

tells us that impulsive behaviour provides a unique contribution of 5.6% to this model. If impulsive behaviour was removed from this model, the R square value would drop from 0.165 to 0.109.

Addressing the Research Questions

In a previous chapter, a number of research questions were outlined, which ultimately guided the research process. After interpreting the data, it is necessary to return to the research questions in order to determine which questions, if any, were answered through this study. The first research question focuses (in a broad sense) on whether or not there is a relationship between one's level of empathy, impulse control, and social bonds, and the type of criminal activity involved in. The remaining nine research questions were divided amongst three more specific areas of interest:

- 1) The impact of empathy, impulse control, and social bonds on one's likelihood of becoming involved in violent behaviour;
- 2) The impact of empathy, impulse control, and social bonds on one's likelihood of being involved in acts of vandalism;
- 3) The impact of empathy, impulse control, and social bonds on one's likelihood of being involved in theft.

The following section will discuss the research questions, as well as the answers this study has for each.

Violent Behaviour

- 1) *Is there a relationship between one's level of empathy and one's likelihood of being involved in violent behaviour?*

This study has shown that there is definitely a relationship between one's level of empathy and one's likelihood of being involved in violent behaviour. In fact, in this study, empathy was found to be the strongest predictor of violent behaviour. The more feelings of empathy or care one has for others, the less likely s/he will be involved in violent behaviour. This finding is consistent with other research that claims those who lack empathy are more likely to become involved in crime. Further, among delinquents in general, those who exhibit more violent and aggressive behaviour tend to be those who have reduced levels of empathy (Ellis, 1982; Cunliffe, 1992; Nussbaum et al., 2002; Short & Simeonson, 1986).

- 2) *Is there a relationship between one's level of impulse control and one's likelihood of being involved in violent behaviour?*

According to this study, there is a relationship between one's level of impulse control and one's likelihood of being involved in violent behaviour. In this study, impulsive behaviour was found to be the second strongest predictor of violent behaviour (second to empathy). This finding is consistent with other research, indicating that the less impulse control a person has, the more likely s/he is to be involved in violent behaviour (Myers, Burton, Sanders, Donat, Cheney, Fitzpatrick & Monaco, 2000). Findings of one study showed impulsive criminals committed a greater number of violent offences than had the planning-type criminals (e.g. Erez, 1980).

- 3) *Is there a relationship between one's social bonds and one's likelihood of being involved in violent behaviour?*

The results of this study show that there is a relationship between one's social bonds and one's likelihood of being involved in violent behaviour, however this relationship falls just short of the cut-off point for what is to be considered statistically significant. Based on my review of literature, I had expected that social bonds would play a major role in one's involvement in violent behaviour. However, according to this particular study, this does not seem to be the case. These findings are surprising, and are not as consistent with other research findings as I would have thought. Others have found that those with weak attachments or bonds to family and/or peers would be more insecure and less likely to form healthy relationships, thus, increasing their likelihood of exhibiting violent behaviour (Nussbaum et al., 2002; Shoham, Rahav, Markowski, Chard, Meuman, Ben-Haim, Baruch, Esformes, Schwarzman, Rubin, Mednick, and Buickhuisen, 1987). There will be further discussion regarding the findings related to social bonds in a subsequent chapter.

Vandalism

- 1) *Is there a relationship between one's level of empathy and one's likelihood of being involved in acts of vandalism?*

This study indicates that there is a relationship between one's level of empathy and one's likelihood of being involved in acts of vandalism. In this study, empathy (or a lack of) was the strongest predictor of vandalism. Those who have a higher level of empathy were found to be less likely to be involved in vandalism. These results are similar to other findings that suggest empathy may be an inhibitor of vandalism (e.g. Ellis, 1982). This could perhaps be due to the fact that if a person is able to empathize with a potential victim of vandalism, s/he may be less willing to cause harm to that

person through an act of vandalism. This finding is also consistent with those of another study that involves self-reported accounts of teenage males who claim that they do not vandalize, as they would be upset if someone damaged their property, so they would not want to cause that sort of harm to anyone else (Teevan & Drybuegh, 2000).

2) *Is there a relationship between one's level of impulse control and one's likelihood of being involved in acts of vandalism?*

The results of this study indicate that there is a relationship between one's level of impulse control and one's likelihood of being involved in acts of vandalism. Impulsive behaviour was found to be the second strongest predictor of vandalism. Those who have a low level of impulse control (i.e. more impulsive behaviour) are more likely to commit acts of vandalism. This finding is not surprising, as many crimes in general are committed due to a person acting on the spur of the moment (Luengo et. al., 1994; Nussbaum et al., 2002). Often, an explanation for vandalism (given by vandals) is that it is done for the rush, or the risk-seeking element involved (Teevan & Drybuegh, 2000). It would make sense then, that those who are less able to control their impulses are more likely to find themselves committing acts of vandalism. What I do find surprising about this finding, is that impulse control is only the second strongest predictor of vandalism (second to empathy). Although it certainly makes sense that empathy is a predictor as well, I thought that impulse control would have more impact than empathy. Perhaps this may indicate that those who are more empathic are better able to control their impulses than those who are less empathic.

3) *Is there a relationship between one's social bonds and one's likelihood of being involved in acts of vandalism?*

According to this study, social bonds were not found to be a significant predictor of vandalism. This is not the result I would have expected. I anticipated that a lack of social bonds would be a major predictor of vandalism. A study conducted on vandalism and teens, indicated that adolescents who have friends who vandalize are more likely to take part in similar activities than those who do not have such friends (e.g. Richards, 1979). In addition, negative parent-child relationships have been found to be correlated with various delinquent behaviours, including vandalism (Morishita, 2004). Finally, students who feel satisfied and connected to school are less inclined to commit vandalism (Richards, 1979).

I would expect that if I had made two distinct categories, separating ‘vandalism to property owned by someone you personally know’, and ‘vandalism to property owned by someone you do not personally know’, the results would have been different. I think that if a person is highly socially bonded, s/he would be less likely to vandalize property belonging to someone they know. I think the results for ‘vandalism to property owned by someone you do not know’ would be similar to the results of this study, in that social bonds would not be a significant factor in one’s likelihood of engaging in vandalism. Future research in this area may yield different results from the current study. I will return to the question of social bonds in a subsequent chapter.

Theft

- 1) *Is there a relationship between one’s level of empathy and one’s likelihood of being involved in theft?*

According to this study, empathy is not a statistically significant predictor of theft. I find this surprising, as I had expected that the more empathic a person is, the less likely

s/he would be to harm another person through the act of stealing. Perhaps, when people steal, they do not see it as an act that causes harm to one particular person. If I had made two separate categories regarding theft, one asking if respondents had ever stolen 'from someone they know personally', and the other asking if they had ever stolen 'from someone they did not know personally', perhaps the results would have been different. It is possible that those who are more empathic would be less likely to steal from someone they know personally. Knowing the person one is stealing from may make the harm caused by theft more obvious. On the other hand, I would have thought that people who are more empathic would typically have feelings of care and empathy towards all people, not just those they personally know. Therefore, in my opinion, as far as empathy is concerned, it should not matter whether or not the person stealing knows the victim on a personal level. It would be interesting to see the results of a study that addresses theft from two separate categories; one regarding theft from someone you know, and the other regarding theft from someone you do not know.

2) *Is there a relationship between one's level of impulse control and one's likelihood of being involved in theft?*

The results of this study indicate that there is a relationship between one's level of impulse control and one's likelihood of being involved in theft. In fact, in this study, impulsive behaviour was the only statistically significant predictor of theft. The more impulsive a person is, the more likely s/he is to be involved in a behaviour such as theft. The person engaging in the delinquent behaviour acts on the spur of the moment, without considering the consequences for his/her actions. This finding is consistent with others who have linked impulsivity with likelihood of committing theft (Gottfredson & Hirschi, 1990; Luengo et. al., 1994; Teevan & Drybuegh, 2000).

3) *Is there a relationship between one's social bonds and one's likelihood of being involved in theft?*

According to this study, social bonds are not a statistically significant predictor of theft. It is important to note, however, that in the multiple regression analysis, social bonds came very near the cutoff mark for statistical significance (should be less than 0.05; actual value: 0.063). The direction of the 'almost' relationship indicates that the more socially bonded one is, the less likely s/he is to be involved in theft. Previous studies have shown that youths who spend less time at home and more time 'hanging around' with friends, have a greater likelihood of being involved in theft than their counterparts (e.g. Dentler & Monroe, 1961). The type of social bonds a person has also plays a role in the type of behaviour s/he may become involved in; people tend to conform to the norms of those to whom they are socially bonded (Herrenkohl et al., 2003). Consequently, those who are bonded with peers who commit delinquent acts, including theft, would be more prone to similar activities compared to those with prosocial bonds. However, the findings of the present study did not yield similar results. Possible reasons for the contrasting results will be discussed in more detail in the concluding chapter.

Chapter Five

Discussion and Concluding Remarks

Chapter Introduction

The primary goal of this research project was to contribute to the General Theory of Crime by aiding in operationalizing the concept of self-control. The results of this study provide promising direction for the inclusion of empathy and impulse-control as primary measures of self-control, thus contributing to the General Theory of Crime. The following concluding chapter includes a discussion of such theoretical implications, a discussion of some of the limitations of the current study, and finally, some possible directions for future research.

Theoretic Implications

As discussed earlier, one of the criticisms of Gottfredson and Hirschi's General Theory of Crime (1990) is that the concept of self-control, which is central to the theory, is not appropriately operationalized. Literature suggests that one crucial problem stems from the fact that self-control is not defined as independent of crime (Akers, 1992; Geis, 2000; Marcus, 2004). It is suggested that one cannot use self-control (or lack of) as a cause of crime, while simultaneously using crime as a measure for self-control (Stylianou, 2002). Thus, one of the primary goals of this research study was to incorporate the concepts of empathy, impulsive behaviour, and social bonds as measures of self-control that are independent of crime.

This study has found that one's level of empathic concern, as well as one's degree of impulsivity, are significant predictors of violence and vandalism. Impulsivity was also found to be a significant predictor of theft among respondents. While social bonds were not found to be a statistically significant predictor of violence, vandalism, and theft, I feel

that the concept of social bonds should not be excluded from the measurement of self-control, given that the literature presented in this thesis suggests that social bonds have a substantial influence on one's likelihood of becoming involved in delinquent activity. A more extensive measure of social bonds may be required in order to address its influence upon one's likelihood of engaging in violence, vandalism, and theft. Further, a more adequate measure of social bonds may produce an additional measure for self-control that is independent of crime.

Another concern with the General Theory of Crime involves the use of attitudinal versus behavioural measurements. While Gottfredson and Hirschi prefer behavioural measures, others claim that behavioural measures do not provide a clear understanding of whether self-control is predicting crime or whether behaviours similar in nature are predicting each other (Evans, 1997; Geis, 2000). The literature suggests that there should be a distinction between attitudes and behaviours; a distinction that has not been made in the General Theory of Crime. Attitudes should serve as elements of self-control, while behaviours should serve as manifestations of self-control (Stylianou, 2002). In this case, attitudes would be considered the causes, while the behaviours would be considered the effects; thus creating two mutually exclusive categories.

The operationalization of self-control, through the inclusion of empathy, impulse control, and social bonds as primary measures, provides what the literature suggests: two mutually exclusive categories, revealing possible causes and effects. Empathy, impulse control, and social bonds are independent, attitudinal measures (*causes*), while violence, vandalism, and theft are dependent, behavioural measures (*effects*).

While there are valid arguments regarding attitudes as elements and behaviours as manifestations of self-control, I do not think that this is always the case. I think that it is possible for a person to possess an attitude that would seemingly encourage delinquency, yet still not take part in delinquent behaviour. In such a case, the person's attitude is not the cause of delinquency, as s/he does not take part in delinquent behaviour. There may be other influences that prevent delinquent activity, despite the attitude that would encourage it. Similarly, a person who does not possess an attitude that would encourage delinquency, may still take part in delinquent behaviours. In this case, there are other influences that encourage delinquency, despite the fact that the delinquent acts s/he is engaging in may not reflect his/her attitudes. It is my opinion that, although attitudes are often the causes and behaviours are often the effects of self-control, it is not accurate to assume that this always the case.

Given that a distinction between attitudes and behaviours may not solve the problem regarding operationalizing the concept of self-control, I feel that incorporating empathy, impulse control, and social bonds into its measurement is a step in the right direction. While the inclusion of empathy, impulse control, and social bonds may not entirely solve the operationalization problem, I feel that they definitely enhance the measurement of self-control.

Limitations of the Present Study

Similar to any research project, this study has a number of limitations that should be considered. First, the data presented in this study represent self-reported information. Actual delinquency and self-reported delinquency are two separate concepts. As such, it

is important to be aware that the data provided by respondents for this study may not reflect an accurate depiction of delinquent behaviour among youth (Jackson, 1995). Given the inherent limitations of research itself, as well as the ethical guidelines one must adhere to, it would not be possible to monitor the behaviours of a sample this size, in order to accurately depict delinquency through observation. Self-report data may be the best form of data to use, given that court records (and therefore crime rate statistics) only report those who have been convicted of a crime. They do not include cases in which charges were dropped. Further, this study was interested in all youth (aged 14-19), not only those involved in delinquent behaviour.

The second limitation of this study regards how well it represents Lethbridge youth. Due to the fact that there are only two public high schools in Lethbridge, and therefore, only two involved in the study, one may conclude that it is not representative of all Lethbridge high school students. The study does not include any of the private schools in Lethbridge, nor does it include any schools outside School District No.51. In addition, information is lacking regarding the 45% of students who were enrolled in Career and Life Management class, but did not participate in the survey. Students who did not obtain parental permission, along with those who perhaps “skipped” school, would have provided interesting sub-samples, as research shows that truancy, for example, is common among those who take part in other delinquent behaviours, including violence, vandalism, and theft (Morishita, 2004).

Further, youth who do not attend school for various other reasons (i.e.: home schooling, drop-outs, those living in youth homes, correctional facilities, etc.) are not included in this study. Given the nature of the research topic for this study, it would be

very interesting to obtain data from such teens, particularly those who live in correctional facilities.

Another limitation to this study involves the measurement of social bonds. This is perhaps the most severe of all the limitations. Given that the existing literature suggests that delinquent behaviour is largely dependent upon the existence of anti-social bonds, coupled with a lack of pro-social bonds, I feel it would have been more beneficial to this study to have made a distinction between the types of bonds each respondent has. More specifically, a better effort at separating peer, family and school bonds from one another, as well as a distinction between pro-social versus anti-social bonds, may have helped this research project dramatically. The social bonds index used in the multiple regression analysis was based on questions regarding friends, school, and family. However, the survey did not explore the behaviour-type of the people belonging to each of these groups. Perhaps if there were questions probing one's family and friends' involvement in violence, vandalism and theft, there would be a better understanding of the type of bond shared. For example, if the respondent reported feeling 'very close' to peers who were involved in such delinquent activities (strong *anti*-social bonds), while reporting 'not feeling very close' to those at home, who were not involved in such delinquent activities (weak *pro*-social bonds), one may conclude that this respondent would be more likely to become involved in violence, vandalism, and theft, than someone who had strong pro-social bonds. It is likely that, if this sort of inquiry had been included in this study, it may have yielded a stronger link between delinquency and social bonds.

Future Research

There are a number of avenues available for future research. While this study focused on the concepts of empathy, impulse control, and social bonds as measures of self-control, one may wish to conduct a survey, utilizing additional measures of self-control. In addition, as discussed, a more in-depth inquiry into the nature of social bonds may provide a more adequate measure of social-bonds to be used in future studies. The measurement of social-bonds is important due to the fact that there is substantial evidence in the literature supporting the impact social bonds have on one's behaviour (e.g. Herrenkohl et. al., 2003; Shoham et. al., 1987). Inquiring into the behaviours of those to whom one is socially bonded, may provide important information regarding the nature of the bonds one has. The type of social bonds one has, pro-social versus anti-social, will influence the type of behaviour one will consider acceptable, as one will adhere to the norms and guidelines of those to whom s/he is socially bonded.

Expanding further on the social bond aspect, it would also be interesting to compare the strength of family bonds to the strength of bonds shared with peers. For example, it would be interesting to compare the behaviours of respondents who have *anti-social family* relations and *pro-social peer* relations, to respondents who have *pro-social family* relations and *anti-social peer* relations. For some respondents, the family bond may be stronger than the peer bond, resulting in behaviours that resemble those of his/her family, regardless of whether or not the behaviour of the family is pro-social or anti-social. In contrast, others may have stronger social bonds to their peers, resulting in behaviours similar to those in their peer group.

Another direction for future research could involve a more comprehensive sample of youth. The current study included two public high schools. A study that includes a more diverse group of youth may provide a better representation of youth as a whole. Other youth to consider including in the study are those who attend private schools, as well as those who do not attend school. Contact with youth who do not attend school may be made through involvement with youth shelters and/or youth homes. In addition, youth who are living in correctional facilities may also provide important information that is not available through surveying students who attend public school.

Finally, this study identifies a significant negative correlation between gender and empathy (see correlation matrix in Appendix E). Males were found to be less empathetic than females. Such a correlation may have impacted the results of this study to some extent. Additional research could be designed to further investigate the relationship between gender, empathy, and self-control.

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APPENDIX A:
Parent/Guardian Consent Form

Parent/Guardian Consent Form

This permission slip is for you to provide consent for your son/daughter to take part in a survey that will be given to all CALM classes. The survey is designed to help understand the nature of adolescent relationships with peers, school, and family. As youth violence is a growing concern across the nation, it is also designed to help gain a better picture of violence and bullying amongst Lethbridge youth.

The survey will be used by Tammy Gillis, a graduate student at the University of Lethbridge, as a primary source of research for writing her MA Thesis. The survey is not part of course work, and will be used solely for the purpose of writing the thesis.

In providing my consent I understand that:

- Surveys will be completed anonymously. Students will be instructed NOT to put their name or any identifying information anywhere on the survey.
- The survey will be distributed, administered and collected by the researcher, not school staff.
- My son or daughter may choose not to participate even if I have provided consent.
- My son or daughter can stop answering a survey that s/he has started and ask that the survey be destroyed.
- All original surveys will be retained for three years after the report is completed. Surveys will be stored in a locked filing cabinet, in a secure office.

I, _____ (Parent or Guardian) provide consent for

_____ to complete a survey at school that will be given to all CALM
name of son, daughter, or dependent

classes in June, 2005. The brief survey will be assessing violence and bullying among teenagers. The results of the survey will be used in a Master of Art Student's Thesis at the University of Lethbridge.

Signature: _____ Date: _____

If you have any questions about the survey, please feel free to leave a message for Tammy Gillis at 329-5137. For more general questions, please contact the Office of Research Services at 329-2747.

Please return this form to the school immediately.

*****STUDENTS WHO RETURN THEIR SIGNED PERMISSION SLIP
WILL BE ENTERED TO WIN 1 OF 5 \$10 GIFT CARDS TO
A&B SOUND*****

APPENDIX B:
High School Survey

Introduction

This survey is designed to help understand the nature of adolescent relationships with peers, school, and family. It is also designed to help gain a better picture of violence amongst Lethbridge youth. We DO NOT want to know about individual students. DO NOT write your name anywhere on this questionnaire. The survey is completely anonymous. **No one but you will know how you answer the questions.** You should just answer each question by telling the truth.

Your participation in this survey is completely voluntary. If you do not feel comfortable answering any question, or if you do not feel that you can answer it honestly, leave it blank. If you do not wish to take the survey at all, please work quietly at your seat while it is completed by other students.

If you have any questions, or are unsure of what any part of the questionnaire is asking, please feel free to raise your hand and I will come to your seat to help you.

Directions

- DO NOT write your name anywhere on this questionnaire.
- When you have completed the survey, place it in the box, through the slot in the top, which is located at the front of the classroom.
- Please check off the appropriate answers or circle your answers, as indicated, making sure to only give ONE answer for each question.

B) For each of the following statements, please circle the number that *best* describes you, using the scale below.

1	2	3	4	5
Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree

1) I consider myself to be religious.
1 2 3 4 5

2) If so, my religion is _____

3) I think it is important to attend church regularly.
1 2 3 4 5

4) In today's society, it is important to get an education.
1 2 3 4 5

C) The following questions are related to how you feel about certain situations. Take a minute to think about how you usually feel in these types of situations.

For each of the following statements, please circle the number that *best* describes you, using the scale below.

1	2	3	4	5
Does not describe me <i>at all</i>	Hardly describes me	Unsure	Describes me pretty well	Describes me <i>very well</i>

1) I feel sorry for people less fortunate than me.
1 2 3 4 5

2) I find it difficult to see things from the 'other person's' point of view.
1 2 3 4 5

3) When I see someone being treated unfairly, I feel protective towards them.
1 2 3 4 5

4) I don't like hearing about acts of violence.
1 2 3 4 5

5) I would describe myself as a caring person.
1 2 3 4 5

1	2	3	4	5
Does not describe me <i>at all</i>	Hardly describes me	Unsure	Describes me pretty well	Describes me <i>very well</i>

6) Other people's problems do not bother me.
 1 2 3 4 5

7) If I'm sure I'm right about something, I don't waste time listening to other people's arguments.
 1 2 3 4 5

8) I believe that there are two sides to every story and try to look at them both.
 1 2 3 4 5

9) I don't feel sorry for other people when they are having problems.
 1 2 3 4 5

10) Before criticizing somebody, I try to imagine how I would feel if I were in his/her place.
 1 2 3 4 5

11) I find it entertaining to watch two people get into a fist fight.
 1 2 3 4 5

D) The next few questions deal with your feelings about violence. Please circle the number that *best* represents how much you agree or disagree with each of the following statements, using the scale below.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Unsure	Somewhat Agree	Strongly Agree

1) If someone insulted me, I think it would be okay to hit them.
 1 2 3 4 5

2) If someone hit me first, I think it would be okay to hit them back.
 1 2 3 4 5

3) Fist fights are the best way to deal with certain situations.
 1 2 3 4 5

4) It's okay to beat someone up if they really deserve it.
 1 2 3 4 5

E) The next set of questions deal with acts of vandalism. Please answer whether or not you have ever done any of the following things, by circling either YES or NO for each.

Have you ever...?

- 1) Smashed bottles on the street, school grounds, or other areas? **Yes No**
- 2) Intentionally damaged or destroyed property belonging to your parents or other family members (brothers, sisters)? **Yes No**
- 3) Intentionally damaged or destroyed property belonging to a school, college, or university? **Yes No**
- 4) Intentionally damaged or destroyed other property (signs, windows, mailboxes, parking meter, etc.) that did not belong to you? **Yes No**
- 5) Intentionally damaged or destroyed property belonging to your employer or at your workplace? **Yes No**
- 6) Slashed, or in any way damaged seats on a bus, in a movie theatre, or something at another public place? **Yes No**
- 7) Written graffiti on a bus, on school walls, on restroom walls, or on anything else in a public place? **Yes No**

F) The next set of questions deals with various types of theft. Please indicate whether or not you have ever done any of the following things, by circling either YES or NO.

Have you ever...?

- 1) Stolen, taken, or tried to take something from a family member or relative (e.g., personal items, money, etc.)? **Yes No**
- 2) Stolen, or tried to take something from a store worth less than \$100? (e.g., pack of gum, money, shirt, watch, video game, shoes, etc.)? **Yes No**
- 3) Stolen, or tried to take something from a store worth more than \$100 (e.g., leather jacket, car stereo, bike, money, etc.). **Yes No**
- 4) Stolen, or tried to take something that belonged to 'the public' (e.g., street signs, construction signs, etc.)? **Yes No**
- 5) Stolen or tried to steal a motor vehicle (e.g., car, motorcycle, jet ski)? **Yes No**
- 6) Bought or sold stolen goods? **Yes No**

G) The next set of questions deal with types of violence and aggression. Please indicate, as honestly as you can, if you have ever done any of the following things, by circling either YES or NO.

Have you ever...?

- | | | |
|--|-----|----|
| 1) Hit or threatened to hit a person? | Yes | No |
| 2) Hit or threatened to hit your parent(s)? | Yes | No |
| 3) Hit or threatened to hit another student at your school? | Yes | No |
| 4) Hit or threatened to hit someone from a different school? | Yes | No |
| 5) Used force or threatened to beat someone up if they didn't give you money or something else you wanted? | Yes | No |
| 6) Been involved in a fight where you and a group of others 'ganged up' on another person? | Yes | No |
| 7) Been involved in a fight where the other person required medical attention? | Yes | No |
| 8) Watched a fist fight (other than on t.v.)? | Yes | No |
-

H) The next set of questions ask about impulsive behaviour. Please circle the number that *best* describes you, using the scale below.

1	2	3	4	5
Does not describe me <i>at all</i>	Hardly describes me	Unsure	Describes me pretty well	Describes me <i>very well</i>

- 1) I act on the spur of the moment without stopping to think.
1 2 3 4 5
- 2) If I feel like doing something, I do it without thinking about the consequences.
1 2 3 4 5
- 3) I have a well thought-out reason for almost everything I do.
1 2 3 4 5
- 4) I can work for a long time without becoming bored.
1 2 3 4 5

1	2	3	4	5
Does not describe me <i>at all</i>	Hardly describes me	Unsure	Describes me pretty well	Describes me <i>very well</i>

5) I usually say the first thing that comes into my mind.

1	2	3	4	5
---	---	---	---	---

6) I take risks without stopping to think about the results.

1	2	3	4	5
---	---	---	---	---

D) Take a minute to think about your family and friends. The next set of questions ask about your relationships with the people around you. Please circle the number that *best* represents how much you agree or disagree with each of the following statements, using the scale below.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Unsure	Somewhat Agree	Strongly Agree

- | | | | | | |
|---|---|---|---|---|---|
| 1) My parents care about me. | 1 | 2 | 3 | 4 | 5 |
| 2) People in my family understand me. | 1 | 2 | 3 | 4 | 5 |
| 3) My family and I have fun together. | 1 | 2 | 3 | 4 | 5 |
| 4) I feel close to people at school. | 1 | 2 | 3 | 4 | 5 |
| 5) I feel like I am a part of my school. | 1 | 2 | 3 | 4 | 5 |
| 6) I am happy to be at my school. | 1 | 2 | 3 | 4 | 5 |
| 7) The teachers at my school treat students fairly. | 1 | 2 | 3 | 4 | 5 |
| 8) My friends are very important to me. | 1 | 2 | 3 | 4 | 5 |
| 9) My friends care about me. | 1 | 2 | 3 | 4 | 5 |
| 10) My friends understand me. | 1 | 2 | 3 | 4 | 5 |
| 11) My friends and I have fun together. | 1 | 2 | 3 | 4 | 5 |
-

J) Think about who you go to when you have a problem. Indicate who you would turn to when you are upset or have a problem, by circling the number that *best* explains how you feel, using the scale below.

1	2	3	4	5
Not at all	A little	Don't have such a person	Somewhat	Very much

When you have problems, how much can you rely on each of the following people?

- | | | | | | |
|--------------------------------|---|---|---|---|---|
| 1) Mother | 1 | 2 | 3 | 4 | 5 |
| 2) Father | 1 | 2 | 3 | 4 | 5 |
| 3) Other family member(s)..... | 1 | 2 | 3 | 4 | 5 |
-

Thank you for your participation in this survey. Please put your completed survey into the slot on the top of the box, located at the front of the room, and then remain quietly seated until all others have finished their surveys.

APPENDIX C:
Individual Scale Items

A) **Empathy** Cronbach's Alpha for index: 0.759

Likert Items

- 1) I feel sorry for people less fortunate than me.
- 2) I find it difficult to see things from the 'other person's' point of view.
- 3) When I see someone being treated unfairly, I feel protective towards them.
- 4) I don't like hearing about acts of violence.
- 5) I would describe myself as a caring person.
- 6) Other people's problems do not bother me.
- 7) If I'm sure I'm right about something, I don't waste time listening to other people's arguments.
- 8) I believe that there are two sides to every story and try to look at them both.
- 9) I don't feel sorry for other people when they are having problems.
- 10) Before criticizing somebody, I try to imagine how I would feel if I were in his/her place.
- 11) I find it entertaining to watch two people get into a fist fight.

B) **Social Bonds** Cronbach's Alpha for index: 0.807

Likert Items

- 1) My parents care about me.
- 2) People in my family understand me.
- 3) My family and I have fun together.
- 4) I feel close to people at school.
- 5) I feel like I am a part of my school.
- 6) I am happy to be at my school.
- 7) The teachers at my school treat students fairly.
- 8) My friends are very important to me.
- 9) My friends care about me.
- 10) My friends understand me.
- 11) My friends and I have fun together.

C) **Impulsive Behaviour** Cronbach's Alpha for index: 0.747

Likert Items

- 1) I act on the spur of the moment without stopping to think.
- 2) If I feel like doing something, I do it without thinking about the consequences.
- 3) I have a well thought-out reason for almost everything I do.
- 4) I can work for a long time without becoming bored.
- 5) I usually say the first thing that comes into my mind.

6) I take risks without stopping to think about the results.

** Scores for Likert items were derived by tabulating the scores for each individual index (a possibility of scoring 1-5 on each item), then dividing that score by the number of items in the index. This produces one score for each index. A higher score indicates a greater likelihood that the respondent possesses the characteristic/concept that the index was measuring.

D) **Violence** Cronbach's Alpha for index: 0.746

Have you ever...? Yes or No

- 1) Hit or threatened to hit a person?
- 2) Hit or threatened to hit your parent(s)?
- 3) Hit or threatened to hit another student at your school?
- 4) Hit or threatened to hit someone from a different school?
- 5) Used force or threatened to beat someone up if they didn't give you money or something else you wanted?
- 6) Been involved in a fight where you and a group of others 'ganged up' on another person?
- 7) Been involved in a fight where the other person required medical attention?
- 8) Watched a fist fight (other than on t.v.)?

E) **Vandalism** Cronbach's Alpha for index: 0.608

Have you ever...? Yes or No

- 1) Smashed bottles on the street, school grounds, or other areas?
- 2) Intentionally damaged or destroyed property belonging to your parents or other family members (brothers, sisters)?
- 3) Intentionally damaged or destroyed property belonging to a school, college, or university?
- 4) Intentionally damaged or destroyed other property (signs, windows, mailboxes, parking meter, etc.) that did not belong to you?
- 5) Intentionally damaged or destroyed property belonging to your employer or at your workplace?
- 6) Slashed, or in any way damaged seats on a bus, in a movie theatre, or something at another public place?
- 7) Written graffiti on a bus, on school walls, on restroom walls, or on anything else in a public place?

F) **Theft** Cronbach's Alpha for index: 0.603

Have you ever...? Yes or No

- 1) Stolen, taken, or tried to take something from a family member or relative (e.g., personal items, money, etc.)?
- 2) Stolen, or tried to take something from a store worth less than \$100? (e.g., pack of gum, money, shirt, watch, video game, shoes, etc.)?
- 3) Stolen, or tried to take something from a store worth more than \$100 (e.g., leather jacket, car stereo, bike, money, etc.).
- 4) Stolen, or tried to take something that belonged to 'the public' (e.g., street signs, construction signs, etc.)?
- 5) Stolen or tried to steal a motor vehicle (e.g., car, motorcycle, jet ski)?
- 6) Bought or sold stolen goods?

** Scores for the yes/no questions were derived by tabulating the raw scores for each index. A value of 1 was assigned to 'yes' responses, while a value of 0 was assigned to 'no' responses. The higher the score, the greater the incidence of the behaviour the index was measuring.

Descriptives for Scales

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Empathy	182	.94	1.13	2.07	1.5180	.18951
Social Bonds	182	.88	1.00	1.88	1.3681	.20915
Impulsive Behaviour	182	3.67	1.17	4.83	2.7647	.73729
Violent Behaviour	182	1.75	1.41	3.16	2.0741	.44014
Vandalism	182	3.87	.00	3.87	1.0579	.81527
Theft	182	2.45	.00	2.45	.9178	.70791
Valid	182					

APPENDIX D:

**Skewness and Kurtosis Values:
Before and After Transformation**

To mitigate skewness & kurtosis, the following variables required a square root transformation:

	Before Transformation		After Transformation	
	Skewness	Kurtosis	Skewness	Kurtosis
Vandalism	2.199	10.422	.109	-.626
Theft	1.184	1.481	-.099	-1.106
Violent behaviour	.654	-.402	-.436	-.337
Hours extracurricular activity	1.762	3.287	-.469	-.864

APPENDIX E:
Correlation Matrix

Correlation Matrix

Correlations

		Living with a single parent	Age	Social Bonds	Race (white or non-white)	Impulsive Behaviour	Hours of work per week	Hours of extracurricular activity	Gender	Empathy	Living in a 2-parent home	Grade
Living with a single parent	Pearson Correlation	1	.026	.075	.061	-.040	.093	-.222**	.146*	-.117	-.679**	.052
	Sig. (2-tailed)		.732	.317	.417	.590	.213	.003	.049	.114	.000	.483
	N	182	182	182	182	182	182	182	182	182	182	182
Age	Pearson Correlation	.026	1	.068	.104	-.119	.237**	-.095	-.174*	-.036	-.039	.717
	Sig. (2-tailed)	.732		.363	.163	.110	.001	.204	.019	.630	.606	.000
	N	182	182	182	182	182	182	182	182	182	182	182
Social Bonds	Pearson Correlation	.075	.068	1	-.036	.138	-.007	-.179*	-.115	.278**	-.102	.085
	Sig. (2-tailed)	.317	.363		.626	.064	.923	.016	.123	.000	.170	.254
	N	182	182	182	182	182	182	182	182	182	182	182
Race (white or non-white)	Pearson Correlation	.061	.104	-.036	1	-.061	.057	-.041	.073	-.048	-.079	.006
	Sig. (2-tailed)	.417	.163	.626		.410	.448	.587	.329	.520	.291	.937
	N	182	182	182	182	182	182	182	182	182	182	182
Impulsive Behaviour	Pearson Correlation	-.040	-.119	.138	-.061	1	-.030	-.017	-.056	.426**	-.072	-.118
	Sig. (2-tailed)	.590	.110	.064	.410		.686	.819	.453	.000	.331	.114
	N	182	182	182	182	182	182	182	182	182	182	182
Hours of work per week	Pearson Correlation	.093	.237**	-.007	.057	-.030	1	-.051	-.191**	.097	-.113	.361
	Sig. (2-tailed)	.213	.001	.923	.448	.686		.493	.010	.195	.128	.000
	N	182	182	182	182	182	182	182	182	182	182	182
Hours of Extracurricular Activity	Pearson Correlation	-.222**	-.095	-.179*	-.041	-.017	-.051	1	-.050	-.047	.242**	-.060
	Sig. (2-tailed)	.003	.204	.016	.587	.819	.493		.502	.532	.001	.423
	N	182	182	182	182	182	182	182	182	182	182	182
Gender	Pearson Correlation	.146*	-.174*	-.115	.073	-.056	-.191**	-.050	1	-.453**	-.077	-.307
	Sig. (2-tailed)	.049	.019	.123	.329	.453	.010	.502		.000	.300	.000
	N	182	182	182	182	182	182	182	182	182	182	182
Empathy	Pearson Correlation	-.117	-.036	.278**	-.048	.426**	.097	-.047	-.453**	1	.055	.103
	Sig. (2-tailed)	.114	.630	.000	.520	.000	.195	.532	.000		.463	.168
	N	182	182	182	182	182	182	182	182	182	182	182
Living in a 2-parent home	Pearson Correlation	-.679**	-.039	-.102	-.079	-.072	-.113	.242**	-.077	.055	1	-.005
	Sig. (2-tailed)	.000	.606	.170	.291	.331	.128	.001	.300	.463		.946
	N	182	182	182	182	182	182	182	182	182	182	182
Grade	Pearson Correlation	.052	.717**	.085	.006	-.118	.361**	-.060	-.307**	.103	-.005	1
	Sig. (2-tailed)	.483	.000	.254	.937	.114	.000	.423	.000	.168	.946	
	N	182	182	182	182	182	182	182	182	182	182	182

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).