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EXAMINING POSSIBLE INTERACTION EFFECTS BETWEEN

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EXAMINING POSSIBLE INTERACTION EFFECTS BETWEEN
SELF-CONTROL THEORY AND GENERAL STRAIN THEORY

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF SOCIOLOGY

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Chapter I. Introduction

For decades, criminologists have attempted to explain why people commit crimes. Some criminological theories share commonalities, while others exist in complete opposition to one another. However, as anyone who studies crime theory would tell you, there is no one perfect explanation for why people commit crime. Instead, what we have found is that many theories make sense depending on the circumstances and that, in reality, we gain a better understanding of why people commit crime if we examine many different variables, which may mean using several theoretical approaches in conjunction with one another.

On the other hand, it has been argued that integrating theories is unacceptable and that many theories were actually *designed* to exist in opposition to one another and cannot be combined (Hirschi 1989). However, more recent statements have asserted, again, that a theoretical approach cannot be presented as a "general theory" unless it takes into consideration as many variables as possible when attempting to explain crime (Agnew 2005). Both those opposed to theory integration and those in favor of it agree on one point: it is difficult to integrate without making the result too complicated for application or measurement. A person attempting this type of integration constantly struggles to maintain a balance. One has to take variables or theories into consideration to get a good picture of why some individuals are more likely to commit crime than others and, at the same time, not make the integration too complex. Parsimony, after all, is one of the goals of science.

This study integrates the literature on Agnew's General Strain Theory and Gottfredson and Hirschi's Self-Control Theory and examines an interaction effect between low self-control and types of strain. Hopefully, this study will withstand the challenge that integration should not be done, while not making the approach too complex in nature. The approach in this research did not assume criminological theories have to be viewed as opposing one another. It seems instead that the differing theories work as pieces of a puzzle, yielding a full approach to the understanding of criminal behavior.

In Chapter II I discuss the literature applicable to General Strain Theory and in Chapter III I provide a review of Self-Control Theory. Chapter IV addresses the hypothesis for this research. I hypothesize that an interaction effect exists between strain and self-control and that when this interaction is taken into consideration a better understanding emerges of why some people are more likely to commit acts of deviance or crime than others. I used an end-to-end integration approach and an explanation of this type of integration as well as other integration efforts and approaches is included in Appendix I. In Chapter V of this dissertation the sample and methods are described and Chapter VI describes results from several multivariate analyses. A discussion of major findings and the strengths and weaknesses of this research can be found in Chapter VII.

Support is found for both General Strain Theory and Self-Control Theory in this research. Self-Control Theory explains the majority of the variance in every regression model, although that could be explained by the way that General Strain Theory is measured here because the strain measures tend toward

proximate rather than distal causes of strain and the dependent variable is a composite measure of general deviance. Additionally, when components of General Strain Theory are examined independently, it is the presentation of negative stimuli that primarily accounts for strain's impact on general deviance, in this research. For the most part, no support for the interaction approach is found. Self-Control Theory certainly does not benefit from examining these interaction effects. General Strain Theory benefits slightly from an understanding of these interaction effects, however, it is possible that more or less interaction effect could be found if the aspects of General Strain Theory were examined in a different manner and if types of deviance were examined separately.

Chapter II. Strain Theory

Introduction

Strain Theory is a well-known, well-established explanation for why people commit crimes. While it does not serve as a stand-alone theory, it works very well in conjunction with other theoretical approaches to explain criminal motivations, especially differential association theories and social control theories. Strain theory as it is applied today has undergone many revisions over time. This chapter primarily examines the field's most current version, General Strain Theory (GST), as well as the empirical evidence offering support for General Strain Theory, and the strengths and weaknesses of the theory.

Origins of General Strain Theory

General Strain Theory, as developed by Robert Agnew, began with the work of Robert Merton. Merton's theory of anomie, heavily influenced by Emile Durkheim, focused on the role stress plays in the occurrence of deviant behavior, especially crime. Emile Durkheim focused on macro-level explanations and on the decrease of societal restraint. He coined the term *anomie*, which means normlessness, in his book <u>Suicide</u>, published in 1897. According to this work, crime is normal in mechanical societies because punishing criminals leads to more social solidarity. Durkheim asserted that mechanical solidarity was social cohesion that was based upon the likeness and similarities among individuals in a society. Mechanical solidarity depended upon common rituals and routines (Durkheim 1933). Within organic societies, the law exists to regulate interactions between various parts of society and when regulation is inadequate, crime is the

result (Durkheim 1951). Organic solidarity, on the other hand, was social cohesion that was based on the interdependence individuals have on one another in more advanced societies (Durkheim 1933).

Durkheim classified strain into two categories, social processes and personal experiences. These basic categories of strain produced either structural strain or individual strain. Structural strain applies to those in constant struggle to meet their needs based on the ideals of society. Individual strain is a personally created strain, on the other hand, which is experienced by the individual while searching for economic success (Durkheim 1951).

Like Durkheim and other functionalists, Merton argued that crime is normal. However, Merton did not believe that crime was necessary to generate social solidarity. Rather, Merton believed that there was something about America, something about our social structure, which requires crime to maintain stability when dealing with the high levels of inequality present in our society. He examined anomie at an individual or micro-level. Merton's version of strain theory suggested that strain is a result of a gap between the goals a person has and the means possessed to achieve those goals. Basically, in this view, it is assumed that everyone desires economic success, where everyone believes in the concept of the "American dream" and wants to accomplish that dream for himself or herself. However, we are also told that there is a legitimate way to achieve that goal, through hard work and education. However, everyone does not have equal access to achieving the "American dream." People experience strain when they

are unable to achieve economic success. Anomie, or normlessness, occurs as a result (Merton 1938).

Merton suggested that people respond to this anomie in 5 possible ways. (1) *Conformity* to cultural goals and institutional means to achieve them is the most common response. (2) *Ritualism* may occur. A person may become a ritualist, continuing to perform the traditional duties and behaviors society expects even though there is little chance of achievement. (3) *Innovation* is a third possible response and one likely to lead to delinquency or crime. A person may become an innovator when he or she does not have access to the means society views as acceptable for the achievement of the goal. A person would create new, innovative, means to achieving the goal, which may result in criminal behavior. In order for innovation to occur, society must value the "ends" of material success more than the "means" of getting there. (4) *Retreatism* is a fourth option. A person might also retreat from society, both from the goals and the means, feeling no desire to fit into society. (5) Finally, *rebellion* is another possible response likely to lead to crime or delinquency. A person might rebel, rejecting the goals and the means but replacing the widely accepted goals and means with a version that the rebellious group finds acceptable (Merton 1938).

Merton's theory has been subject to many criticisms. First of all, it assumes that everyone in society shares the same cultural values and goals of economic success, which we can see is unlikely to be the case. Merton's theory is also heavily criticized because it focused too much on the goal of economic success (Hirschi 1969, Kornhauser 1978). Obviously, the lower classes are more

susceptible to strain using Merton's version. Merton proposed that individual strain was most likely among members of the lower class because they internalize cultural goals of wealth and status but are more likely to be blocked from conventional means of attaining these goals (Farnworth and Leiber 1989). However, evidence shows crime exists among all social classes. Another criticism involves the causal mechanism. Merton's version of what causes strain is vague. The theory in this form is also untestable, unverifiable (Hirschi 1969). The theory in this form cannot explain why an adolescent typically abandons crime, and a final criticism is that this approach focuses heavily on economic strain (Agnew 1985, Hirschi 1969, Kornhauser 1978, Farnworth and Leiber 1989). Hirschi (1969) tested the assumptions of strain theory with self-report data and found them to fail miserably.

General Strain Theory

Robert Agnew (1985) identified and summarized these criticisms and changes to Merton's theory over time, and proposed a revised version he called General Strain Theory. Prior to Agnew's work, strain theories focused on the blockage of positively valued goals (Agnew 1985). Agnew (1985) acknowledges the importance of revisions to strain theory that suggest goal commitment be treated as a variable rather than an assumed constant. Furthermore, Agnew (1985) states that the focus should be on the immediate goals of the adolescent. Agnew broadens the scope of strain theory to include many new variables and make it a theoretical approach that could be put to the test empirically.

General Strain Theory begins with the observation that individuals not only seek certain positively valued goals but also seek to avoid negative or aversive situations. "Like goal-seeking efforts, efforts to avoid painful situations may be blocked" (Agnew 1985:154). This may lead to illegal escape attempts or to delinquency based on anger (Agnew 1985). While Gottfredson and Hirschi (1990) argue for the generality of deviance, Agnew (2005, 2006) believes that different types of strain can lead to different types of emotional responses, which, in turn, lead to different types of crime. For example, Agnew and White (1992) found that strain measures had a moderate effect on drug use but a substantial effect on delinquency (of which they measured with a general delinquency scale).

General Strain Theory defines strain in two ways. Strain can be objective, subjective or both. Objective strains are "events or conditions that are disliked by most members of a given group" (Agnew 1992:320). Subjective strains are "events or conditions that are disliked by the people who are experiencing (or have experienced) them" (Agnew 1992:321). Strain can also be proximate or distal (Agnew 1992, Agnew and White 1992, Mazerolle, Piquero, and Capowich 2003). Proximate strain is basically situational and happens at any point. For example, a person's could receive a bad grade on an exam and become angry about that, which could lead to some type of deviant behavior. On the other hand, strain can also be distal and not happening necessarily near in time to the actual deviant behavior. With distal strain, something could have happened in the past that continues to cause an individual to feel strain, such as being molested as a child causing anger that leads to deviant behavior. Agnew and White (1992) also

state that the effect of strain on individuals is cumulative (Mazerolle, Piquero, and Capowich 2003).

General Strain Theory is also more concerned with types of strain, of which there are three major types. First of all, strain results from the failure to achieve positively valued stimuli. This can include money, power, success, or prestige as goals. Focusing on the disjunction between aspirations and expectations has been the role of classic strain theories, which is one result that may be seen here. However, a disjunction between expectations and actual achievements must also be examined. Strain is enhanced when a person's actual achievements are not what he or she expected. Strain is also enhanced when a person feels that this outcome is unfair or unjust (Agnew 1992).

Second, the loss of positively valued stimuli can result in strain. Losing positively valued stimuli can take on many forms; however, all could possibly lead to delinquency according to Agnew (1992). Finally, the presentation of negative stimuli can lead to strain. Here, one would be examining pain-avoidance behavior because a person is likely to try to avoid negative stimuli.

According to General Strain Theory, "each type of strain increases the likelihood that individuals will experience one or more of a range of negative emotions," including anger, disappointment, fear, and depression (Agnew 1992). However, anger is the emotional reaction most likely to result in criminal or delinquent behavior (Agnew 1992, 1999). In sum, Agnew (1992) explained that an increase in strain would lead to an increase in anger, which in turn would lead

to an increase in criminal behavior. Criminal or deviant behavior is a result of the negative emotions rather than a direct result of strain (Agnew 1992).

However, we know that everyone who experiences strain does not turn to crime. There are three types of coping strategies, all of which have several sub-categories, also explained by General Strain Theory: cognitive, emotional and behavioral (Agnew 1992, 2006). A person can rationalize the stressors with cognitive coping strategies. One can maximize the positive, place less importance on particular goals, and accept responsibility, all of which might minimize the effects of strain (Agnew 1992). Behavioral coping strategies can be of a criminal or noncriminal nature and might include actively seeking out positive stimuli or trying to escape negative stimuli (Agnew 1992). "Behavioral coping strategies focus on reducing the level of strain" (Agnew 2006: 90). The third type of coping strategy, emotional coping, is different in that it focuses on the emotions or feelings about events rather than the events themselves (Agnew 1992). "These strategies try to alleviate negative emotions rather than cognitively reinterpret or behaviorally alter the strains that produced these emotions" (Agnew 2006: 90). Emotional coping strategies may be criminal or noncriminal and may include the use of drugs, physical exercise, meditation, or seeking revenge against others for example (Agnew 2006). Agnew (2006) also says that "individuals often employ more than one coping strategy (91).

When examining why some people respond to strain with crime and some do not, Agnew (2006) looks at individual and environmental characteristics that may increase the likelihood of a person's criminal coping (as opposed to

noncriminal coping). Some factors, according to Agnew (2006), "increase the

likelihood of criminal coping by reducing the ability to cope in a legal manner,

reducing the costs of crime, and/or increasing the disposition for crime" (92).

These factors include "poor coping skills and resources," "low levels of

conventional social support," "low social control," "association with criminal

others and beliefs favorable to crime," and "exposure to situations where the costs

of criminal coping are low and the benefits are high" (Agnew 2006:92).

"Delinquency may be a method for alleviating strain, that is, for achieving

positively valued goals, for protecting or retrieving positive stimuli, or for

terminating or escaping from negative stimuli" (Agnew and White 1992).

There are many coping skills and resources that facilitate criminal coping.

Agnew (2006) believes that the most important are having poor problem-solving

and social skills, low constraint and negative emotionality, low socioeconomic

status, and low self-efficacy.

Agnew has continued to develop General Strain Theory and respond to

criticisms since first proposing these changes to the classic approach. He has

made clarifications regarding specific types of crime that lead to delinquency and

offered suggestions for testing General Strain Theory as well. According to

Agnew, "strains are most likely to lead to crime when they (1) are seen as unjust,

(2) are seen as high in magnitude, (3) are associated with low social control, and

(4) create some pressure or incentive to engage in criminal coping" (Agnew

2001:351). Agnew also stipulated that strain affects delinquency differently

depending on the magnitude, duration and recentness of the strain-inducing event or events (Agnew 1992).

Agnew (2006) also uses General Strain Theory to explain known correlates of crime, such as gender, age, class, and race. Agnew argues that males are more likely to experience types of strain that are conducive to anger and, therefore, crime. "That is, males may be more likely to experience strains that (a) are seen as unjust, (b) are seen as high in magnitude, (c) are associated with low social control, and (d) create some incentive or pressure to engage in crime" (Agnew 2006: 131). Specifically, males are more likely to experience the following strains conducive to crime: harsh discipline, negative secondary school experiences, abusive peer relations, criminal victimization, homelessness, and males are more like to pursue and have trouble achieving several goals associated with masculinity (Agnew 2006). Agnew (2006) says that males may be more likely to experience these strains because they are lower in constraint and higher in negative emotionality, which reduces their ability for legal coping, than females and "while females are more likely than males to experience many strains, a good number of these strains are not conducive to crime" such as close supervision by parents, burdens associated with care of conventional others, and certain network-related strains (134). "The anger of females is more often accompanied by emotions like depression, guilt, fear, anxiety, and shame" but the anger of men is "more often characterized by moral outrage" because males are more likely to blame others and females are more likely to blame themselves

(Agnew 2006: 136). This means that males will be more likely to respond to strain with crime.

What about social class? Agnew says that GST explains the correlate of social class similarly to explaining gender difference in crime. "Lower-class individuals are more likely to experience strains conducive to crime and to cope with strains in a criminal manner" (Agnew 2006: 142). For example, lower-class individuals are more likely to experience a range of family problems, school problems, abusive peer relations, chronic unemployment, failure to achieve monetary and status goals, criminal victimization, and residence in economically-deprived communities (Agnew 2006). Two other facts contribute to the understanding of the relationship between social class and crime. First, "lower-class individuals are less likely to possess the skills and resources necessary for legal coping" and, second, "the costs of crime are less for lower-class individuals because they are lower in social control" (Agnew 2006).

What about the relationship between race and crime? According to Agnew (2006), the "primary reason African Americans have higher rates of offending is because they are more likely to experience those strains conducive to crime, such as abuse, criminal victimization, and discrimination" (146). African Americans are also more likely to cope criminally with these strains. These differences can mostly be explained by the fact that "African Americans are more likely to be poor and to live in high-poverty communities than whites" (Agnew 2006: 146).

When it comes to understanding the relationship between age and crime, Agnew (2006) says that most individuals increase their levels of offending during

adolescence because the types of strain that are likely to lead to criminal coping are more prevalent during adolescence.

Empirical Support for General Strain Theory

Much empirical research has examined General Strain Theory since its inception. This section will examine in chronological order just a few of the many examples testing General Strain Theory. Paternoster and Mazerolle (1994) found support for General Strain Theory finding that, "negative relationships with adults, feelings of dissatisfaction with friends and school life, and the experience of stressful events were positively related to delinquency" (252). Living in an unpleasant neighborhood was also positively related to delinquency in this study. However, they found no support that this effect of strain was pronounced when experienced for a longer period of time, which contradicts Agnew.

Broidy and Agnew (1997) examined gender differences in the perception of and responses to strain. They found that females experience as much, if not more, strain than males, which called for explanation given the higher prevalence of delinquency among males. They explored different types of strain experienced by different genders and different emotional responses to strain. They explained that males may turn to crime as a result of strain because they are lower in social control and they socialize in large, hierarchical peer groups compared to females who typically form close social bonds in small groups (Broidy and Agnew 1997).

Broidy, in subsequent work, tested General Strain Theory and focused on anger. She found that strain-induced anger significantly increased the likelihood of criminal outcomes (Broidy 2001). Therefore, type of negative emotion must be

taken into consideration. Agnew treats anger as an important negative emotion because it is almost always outwardly projected (Agnew 1992). Aseltine, Gore and Gordon (2000) also found that anger and anxiety were mediating variables in the relationship between strain and delinquent behavior.

Brezina, Piquero and Mazerolle (2001) conducted a test of General Strain Theory focusing on the macro-level aspects of the theory, which they called Macro Strain Theory (MST). They used school-level data and predicted that if the core propositions of Macro Strain Theory are correct, then variation of problem behavior across schools would be associated with aggregate-level student anger. This work takes into consideration social disorganization and subcultural deviance explanations regarding school disorder and adds strain theory. Brezina et al. (2001) argue that differences in school disorder are not only a function of disorganization or culture, but also differences in the motivation to commit crime. Disadvantaged communities have a high concentration of strained, angry individuals and that high concentration of angry individuals itself, they predict, could increase crime. Their findings supported this hypothesis. When controlling for subcultural and disorganization variables, an aggregate measure of student anger was significantly associated with school-level differences in student-to-student anger, but not associated with anger directed toward teachers. This appears to identify a macro-level source of aggressive behavior and offers a new application of General Strain Theory (Brezina et al. 2001).

General Strain Theory must be able to identify the factors that influence the reaction to strain (Agnew, Brezina, Wright, and Cullen 2002). Agnew et al.

(2002) found that some personality traits, specifically negative emotionality and constraint, must be taken into consideration. They found that negative emotionality and low constraint had almost no effect on a person when strain was low but when strain was high, these personality traits had a significant effect on delinquency (Agnew et al. 2002).

Mazerolle, Piquero and Capowich (2003) examined how situational vs. dispositional anger impact deviant behaviors. They explained that trait-based anger or dispositional anger is different than anger that results as a reaction to a situation (i.e. anger as a personality trait vs. anger as a reaction at a moment in time) (Mazerolle et al. 2003). Mazerolle et al. (2003) also assert that measures of situational anger that are directly linked to strain represent a more valid test of General Strain Theory. Deviance was measured using two variables, one measuring likelihood of assault and one measuring likelihood of shoplifting. Mazerolle et al. (2003) found that situational anger was significantly related to intentions to shoplift but not dispositional anger, which lends support to the idea that proximate causes are important. When the dependent variable was intent to assault, trait anger was an important influence but did not mediate the effects of other measures of strain, whereas situational anger did mediate those effects. In sum, measures of strain, situational anger and trait anger were all found to be important but of the types of anger the situational anger had the most influence over the dependent variables (Mazerolle et al. 2003).

According to Sharp, Brewster and Love (2005), since "all negative emotional responses are not equally likely to result in criminal behavior" the role

of gender in the emotional response to strain is important in understanding gender differences in deviance (135). They found that, although females are equally as likely as males to experience anger, the other negative emotional responses likely to be experienced by females, such as depression and anxiety, have an inverse relationship with deviance (Sharp et al. 2005). Depression and feelings of guilt moderate the effects of anger for females and the effect of strain on females is also reduced by the fact that females "report higher levels of social support" than males (Sharp et al. 2005: 137). Sharp et al. (2005) included in their analysis a "non-anger negative emotional response variable" where reactions to strain such as withdrawal, sadness, depression, and guilt were possible answer choices. Not only did their findings indicate that these non-anger emotional responses were more likely for females than for males, but they also found that when anger is held constant these other negative emotional responses had a significant, inverse relationship with criminal behavior (Sharp et al. 2005). These findings provide a big step in our understanding of the gender gap in crime.

Strengths and Weaknesses of Strain Theory

It is important to note that General Strain Theory (GST), while it still has limitations, offers a more specific view, compared to classical versions of strain theory discussed here, of how strain operates and influences delinquent or criminal behavior. A definite strong suit of GST is the reevaluation and adaptation that Agnew seems to consistently provide. The theory is able to grow and develop as empirical testing is done and reevaluations made. GST also acknowledges that it is not designed to work independently of all other theoretical

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explanations. Agnew stated that GST works best in conjunction with social control and differential association explanations of crime and delinquency (Agnew 1992). A great deal of the literature and empirical research offering support for GST also offers support for social control and differential association theory when measures of these variables are used as control variables and evidence shows that they explain a part of the delinquency being examined. Another strength of the theory is the idea that the strain a person is feeling at a point in time is a good predictor of the crime he or she commits at that same time, which helps us understand a great deal about crime as opposed to criminality.

Conclusion

Strain theory has undergone many changes over the years and continues to be revamped today. The current version, General Strain Theory, is the most widely used version of strain theory used in the field of criminology today. It is important to understand the roots of General Strain Theory prior to any practical application. Durkheim's concept of anomie applied to suicide rates and the fact that crime is viewed as a functional aspect of society are both key pieces of background information. It seems that Durkheim and Merton provide the theoretical aspects of the theory and Agnew contributes the practical side of things, operationalizing strain and distinguishing different types of strain. Agnew's initial work has brought about an enormous amount of empirical support for the theory as a whole. Continued research should shape up the limitations of the theory. Application of the theory in conjunction with other criminological theories will serve strain theories well in the future.

Chapter III. Self-Control Theory

Introduction

A General Theory of Crime, published in 1990, contained the first presentation and explanation of what came to be known as self-control theory. The theory explains criminality rather than crime, and it addresses the question, "Why don't people commit crime?" rather than "Why do they?" This theoretical approach is rooted in Hirschi's 1969 theory of social control where he explained that individuals are more likely to commit acts of deviance or criminality when their bond to society is low. Like social control theory, self-control theory is based on the assumption that humans are inherently self-interested and that it takes some force, be it external or internal, to force humans to be good or to conform to normative expectations. Low self-control, as defined by Gottfredson and Hirschi (1990), is displayed when a person seeks short-term benefits without taking into consideration the long-term consequences of his or her actions. Additionally, Gottfredson and Hirschi (1990) believe in the generality of crime or deviance, i.e. different types of crime or deviance are not the result of different causes. According to this line of thought, different types of crimes and different deviant acts do not need different causal explanations (Gottfredson and Hirschi 1990).

Origins of Self-Control Theory

Self-Control theory is rooted in Hirschi's (1969) Social Bond or Social Control Theory. "Control theory assumes that the bond of affection for conventional persons is a major deterrent to crime. The stronger this bond, the more likely the person is to take it into account when and if he contemplates a criminal act" (Hirschi 1969:83). In this approach, delinquents are not forced into deviance by some outside force but, instead, are free to commit delinquent acts because they are free from bonds to society. Hirschi (1969) says that "delinquency is not caused by beliefs that require delinquency but is rather made possible by the absence of (effective) beliefs that forbid delinquency" (198). Social control results from a bond to society, especially a bond to family, school, peer groups, and jobs. Hirschi (1969) says that there are four components to the social bond; attachment, commitment, involvement and belief. *Attachment* refers to affection and attachment to others, in other words, caring about others. *Commitment* means an investment in conventional society or a stake in conformity. One who is highly committed has more to lose by acting in a deviant or criminal manner and is, therefore, less likely to deviate (Hirschi 1969). *Involvement* restricts opportunities for delinquency. An individual who is more involved in conventional activities (i.e. employment) has less time and opportunity to engage in deviant activities (Hirschi 1969, Alston, Harley, and Lenhoff 1995). Finally, belief refers to a person's level of belief in the moral values and norms of society (Hirschi 1969, Alston et al. 1995). Persons who strongly believe in values and norms attached to the issue of morality will be less

likely to deviate from them than persons who question or challenge those same norms (Hirschi 1969). According to control theory, the higher a person's attachment, commitment, involvement, and belief, the less likely that person is to commit acts of deviance or criminality. When Gottfredson and Hirschi (1990) were developing their version of control theory (self-control theory), they were very interested in explaining both stability and versatility of crime, which previous versions of control theory had not explicitly addressed.

What is low self-control?

Gottfredson and Hirschi (1990) defined low self-control as "the tendency of people to pursue short-term interest without considering the long term consequences of their acts" (p.177). Self-control theory, like other control theories, is based on the assumption that individuals seek pleasure and avoid pain. Individuals with low self-control will tend to engage in a wide variety of criminal behaviors (Gottfredson and Hirschi 1990). Individuals with low self-control are likely to display a broad range of less socially acceptable behaviors, such as smoking and drinking. People with low self-control do not consider the consequences of their actions with regards to others or the long-term effects that their actions may have for themselves (Gibbs, Giever and Martin 1998; Gottfredson and Hirschi 1990). "Lack of self-control does not require crime and can be counteracted by situational conditions or other properties of the individual. At the same time, we suggest that high self-control effectively reduces the possibility of crime-that is, those possessing it will be substantially less likely at all periods of life to engage in criminal acts"

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(Gottfredson and Hirschi 1990:89).

Gottfredson and Hirschi (1990) explain six elements of self-control. The elements of self-control are: (1) criminal acts are likely to provide immediate gratification, (2) that gratification is likely to be easy or simple, (3) criminal acts are exciting or risky, (4) they offer few or meager long-term benefits, (5) little skill or planning is needed, and (6) pain or discomfort for the victim is often a result. "In sum, people who lack self-control will tend to be impulsive, insensitive, physical (as opposed to mental), risk-taking, short-sighted, and nonverbal, and they will tend therefore to engage in criminal and analogous acts" (Gottfredson and Hirschi 1990:90).

What causes low self-control?

The causal effect of parenting on delinquency is well established (Gottfredson and Hirschi 1990; Gibbs et al. 1998; Junger and Tremblay 1999). It is equally well established that self-control is a product of child-rearing practices (Gottfredson and Hirschi 1990; Gibbs et al. 1998; Junger and Tremblay 1999). A person learns self-control through socialization by his or her parents (Gottfredson and Hirschi 1990). Socialization by parents may be seen, according to Gottfredson and Hirschi (1990), as a process of educating individuals about the consequences of their behaviors. Therefore, ineffective parenting causes low self-control, which in turn leads to a variety of problems for adolescents and adults, including accidents, skipping work, illness, smoking and drinking, and other analogous behaviors (Gottfredson and Hirschi 1990; Evans, Cullen, Burton, and

Benson 1997). Ineffective parenting includes lack of parental supervision, lack of parent-child attachment, and inconsistent or overly-harsh discipline. Not only does a parent have to recognize low self-control behavior but that parent also has to punish that behavior appropriately and consistently (Gottfredson and Hirschi 1990).

Self-control is viewed as a constant trait that one establishes in early childhood and maintains throughout life. It is also acknowledged that low self-control is not the only condition that leads to criminality; opportunity for offending is also important according to Gottfredson and Hirschi (1990). However, consensus does not exist within the field about the extent to which opportunity plays a role. Gottfredson and Hirschi (1990) argue that if a person has low self-control but no opportunity to offend, the outcome is going to look different than it does for someone who has low self-control and a great deal of opportunity to offend as well. Self-control is not a dichotomous variable. Instead, it is explained as existing along a continuum where a person can have a level of self-control ranging from none whatsoever to very high (Gottfredson and Hirschi 1990).

While some sociologists link deprivation to crime, Gottfredson and Hirschi (1990) see individuals' economic and educational failure as indicators they lacked the self-control necessary to succeed in institutional settings, which require delayed gratification, planning, and a preference for cognitive over physical activity (Evans et al., 1997). A variety of negative outcomes, all caused

by ineffective parenting practices, have a high likelihood of showing up in the same persons and even the same families (Junger and Tremblay, 1999).

Not only does low self-control lead to delinquency in teenagers, but it also leads to what Gottfredson and Hirschi (1990) call analogous behaviors. A person who has low self-control is also likely to engage in other risky behaviors such as having illicit sex, using drugs, and smoking. Therefore, the theory explains drug use and alcohol use the same as it explains criminal behavior (Gottfredson and Hirschi 1990).

It is also important to note that Gottfredson and Hirschi, in explaining the general theory of crime, concentrate their focus on the concept of *criminality* rather than *crime*. Criminality is, basically, "the idea that criminals carry within themselves properties peculiarly and positively conducive to crime" (Gottfredson and Hirschi 1990: 86). In explaining the connection between personality and crime, they say that the "level of self-control, or criminality, distinguishes offenders from nonoffenders, and the degree of its presence or absence can be established before (and after) criminal acts have been committed" (Gottfredson and Hirschi 1990:109).

> Crimes are short term, circumscribed events that presuppose a peculiar set of necessary conditions (e.g., activity, opportunity, adversaries, victims, goods). Criminality, in contrast, refers to stable differences across individuals in the propensity to commit criminal or theoretically equivalent acts (Gottfredson and Hirschi 1988:4)

Gottfredson and Hirschi (1990) also address the known correlates of crime

and explain how self-control theory works to explain these known correlates.

Self-control theory strongly asserts that individual differences in criminality or

self-control appear early in life and persist over time (Gottfredson and Hirschi

1990). According to Gottfredson and Hirschi (1990), these facts point toward the

family as the primary determinant of self-control. When thinking about gender

and its effect on crime, Gottfredson and Hirschi (1990) assert that self-control

theory explains crime just as well for females as it does for males. It is well

known within the field of sociology that boys and girls are socialized differently

during childhood. According to self-control theory, this leads to girls possessing

higher levels of self-control than boys. Additionally, differing levels of social

control applied to boys and girls lead to girls having fewer opportunities to

commit crime. Burton, Cullen, Evans, Alarid, and Dunaway (1998) examined the

extent to which self-control theory can explain the gender gap in crime. They

first established the presence of a significant relationship between gender and a

measure of crime and then evaluated whether a measure of self-control could

account for that relationship (Burton et al. 1998). When controlling for

measurements of other theoretical approaches and for opportunity, when self-

control measures are introduced into the analysis, these authors found that the

relationship between gender and crime became nonsignificant (Burton et al.

1998). When males and females were analyzed separately, self-control was

related differently to males' and females' criminal behavior. The data also

revealed support for the generality of self-control's effect across gender (Burton et

al. 1998). Therefore, the gender gap in crime is explained by the fact that girls are

socialized to have higher levels of self-control and less opportunity to offend.

> What does the crime and criminality distinction say about
> gender differences in crime? Note first that gender
> differences for all types of crime are established early in life
> and that they persist throughout life. This fact implies a
> substantial self-control difference between the sexes. Note
> second that there are obvious crime differences between men
> and women, such as rape and prostitution, and equally
> obvious differences between them in the sanctioning of
> deviant behaviors, such as the differential consequences for
> boys and girls of premarital pregnancy. This fact suggests
> that gender differences may be due to differences in crime
> rather than criminality, and that differences in opportunity
> may account for much of the male-female difference in crime
> rates (Gottfredson and Hirschi 1990:147).

This logic also applies to an understanding of how self-control theory

explains the relationship between race and crime. Still keeping in mind that

childhood socialization by parents is the key in establishing self-control, African

American children are more likely to grow up in single-parent households. It is

more difficult for a single parent to monitor, recognize, and punish low self-

control behaviors. Also, African American youths are more likely to grow up in

neighborhoods that offer more opportunity for crime. Therefore, the same

argument applies to race that applies to gender. A focus on the socialization of

self-control and opportunity explain, for the most part, the relationship between

race and crime.

Vazsonyi and Crosswhite (2004) tested Gottfredson and Hirschi's claim

that self-control theory can explain crime differences in gender and also in race.

They tested measures of self-control using the Grasmick et al. (1993) scale on a

sample of African-American youth. Vazsonyi and Crosswhite (2004) found that "low self-control predicts adolescent deviance in African American youth" (427). This study also provides evidence of "offender versatility in that self-control explained variability in a variety of deviance measures" (Vazsonyi and Crosswhite 2004: 427). Therefore, Vazsonyi and Crosswhite's (2004) findings provided support for the "proposition that the General Theory appears generalizable for males and females as well as in different racial groups in the United States" (427).

What about social class? Research has been unable to prove a consistent relationship between social class and crime. Self-control theory, because it focuses on criminality rather than crime, explains that low self-control can be found in all social classes. According to Gottfredson and Hirschi (1990), "low self-control has implications for the likelihood of criminal acts, and it also has implications for selection into the occupational structure" (191). White-collar occupations are more likely to demand characteristics inconsistent with high levels of criminality (Gottfredson and Hirschi 1990). Gottfredson and Hirschi (1990) say, "our theory therefore predicts a relatively low rate of offending among white-collar workers, contrary to the now-standard view in the literature" (191). As previously explained, self-control exists along a continuum. Can someone who is in a white-collar position have lower levels of self-control than his or her coworkers? Yes. Middle-class or upper-class parents, if they are permissive, disengaged or have low-levels of self-control themselves can produce low-self control children. Additionally, being poor could make it more difficult,

although not impossible, to socialize children because of difficult work hours or the economic strains caused by being poor or the fact that being poor often means a female-headed household. One can not lose sight of the fact that crime exists in all social classes and, therefore, so does low self-control (Gottfredson and Hirschi 1990).

The most powerful known correlate with crime is age. The age-crime relationship is robust. It exists across time, cultures, and groups of offenders. This relationship is also "invariant across sex and race" (Gottfredson and Hirschi 1990:126, Hirschi and Gottfredson 1983). "While population arrest rates have changed in absolute magnitude over time (almost doubling between 1965 and 1976), the same pattern has persisted for the relative magnitudes of the different age groups, with fifteen- to seventeen-year-olds having the highest arrest rates per population of any age group" (Blumstein and Cohen 1979: 562). This has not changed over time. "Most current theories of crime concentrate on the adolescent and late teen years, when the rate of crime is at or approaching its maximum level" (Gottfredson and Hirschi 1990:130). According to Gottfredson and Hirschi (1990), "efforts to bring theories into line with the age distribution, to encompass the effects of age, may lead the theorist into assertions contrary to fact" (132). The effect of age on crime is direct and is not mediated by any variable or any theory (Gottfredson and Hirschi 1990, Hirschi and Gottfredson 1983). "Age is everywhere correlated with crime. Its effects on crime do not depend on other demographic correlates of crime. Therefore, it cannot be explained by these correlates and can be explained without reference to them" (Hirschi and

Gottfredson 1983:581). In summary, Gottfredson and Hirschi (1990) say that Self-Control Theory does not necessarily explain why a person ages out of crime. Perhaps it is because of a slight change in a person's self-control level. Perhaps it is because of a change in opportunity for that person. Regardless, according to Gottfredson and Hirschi (1990), the theory doesn't necessarily have to account for the aging out process because most theories do not and cannot explain this phenomenon anyway. Instead, the focus is and should be on explaining crime at its peak (age 15- 18) and explaining the stable differences between people's crime across the life-course, according to Gottfredson and Hirschi (1990).

These known correlates of crime have been tested empirically by others since the inception of self-control theory and, thus far, have been found to be true. However, other researchers, specifically Tittle, Ward and Grasmick (2003), have challenged Gottfredson and Hirschi's explanation of why age does not need to be addressed. Tittle et al. (2003) claim that self-control actually changes over the life-course more than Gottfredson and Hirschi (1990) acknowledge and that opportunity to commit crime is such an important variable in the application of self-control theory that it actually explains aging out.

Empirical support for Self-Control Theory

Since the inception of self-control theory, many pieces of empirical research have tested measures of self-control with mixed results. It seems as much support exists for the theory as there are criticisms of it, which will be addressed later in this chapter. I will now briefly explain several examples of the many recent pieces of research providing support for self-control theory.

Grasmick, Tittle, Bursik and Arneklev (1993) were among the first researchers to assess self-control theory empirically. They developed a 23-item composite scale for measuring self-control that has been used repeatedly in research since 1993. They utilized a four response, Likert-scale format and devised four items for each of the six components of self-control proposed by Gottfredson and Hirschi (1990) as previously described (although, one item was ultimately eliminated because it failed to significantly contribute to the overall measure). Grasmick et al. (1993) found enough evidence to support the unidimensionality of the scale, as have others since then (see Tittle et al. 2004). "Grasmick et al. found that low self-control, criminal opportunity, and the multiplicative term (self-control x opportunity) were significant predictors of the outcome variables. However, the direct effect of the self-control was weaker than the other two measures" (Delisi, Hochstetler, and Murphy et al. 2003:246). Delisi et al. (2003) replicated Grasmick et al.'s 1993 study, applied it to a formerly incarcerated population, and found that the measures reflecting temper were the most useful in predicting crime-related dependent variables (Delisi et al. 2003 :260).

Pratt and Cullen (2000) reviewed the General Theory of Crime and used a meta-analysis technique to test the effect size between measures of self-control and crime or analogous behaviors. "They assessed the effect-size estimates of 126 self-control measure to crime-related dependent variables" (Delisi et al. 2003:243). Their goal was to determine whether this theoretical construct should be considered an important predictor of criminal behavior. They used a meta-

analysis because it would provide four advantages. (1) It can provide a more precise estimate of the relationship across all tests. (2) It can allow for multivariate analyses in which researchers can explore the effect size of theoretical variables. (3) It can be replicated. (4) Finally, the database is not static but dynamic and as additional studies are published they can be added to the sample (Pratt and Cullen 2000).

The authors addressed four key issues. First, they used the meta-analysis to assess the effect size between measures of self-control and crime or analogous behaviors. Second, the influence of opportunity was taken into consideration as instructed by Gottfredson and Hirschi (1990). Third, they examined whether the effect size between self-control and crime across studies is influenced by methodological factors, including the way self-control is operationalized. Finally, variables associated with control theory, in general, and low self-control, in particular, are often viewed as competitors to social learning theory and these variables were taken into consideration as well (Pratt and Cullen 2000).

Gottfredson and Hirschi's theory is empirically supported with this work, especially the measure of low-self control. The effect size found here (over .20) ranks "self-control as one of the strongest known correlates of crime" (Pratt and Cullen 2000:952). This effect size was maintained even when control variables were added for opportunity and other theoretical explanations and regardless of how self-control was measured. It is also reflected as a general measure and predicts analogous behaviors as well as crime and it worked just as well for the racially integrated samples as it did for the non-integrated samples (Pratt and

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Cullen 2000). "Most noteworthy, regardless of the analysis undertaken, self-control was related to crime among men, in younger samples, and in offender samples" (Pratt and Cullen 2000:952). Additionally, Pratt and Cullen (2000) found that social learning variables still had a strong effect on crime, which does not lend support to self-control theory, and the effect size of self-control was lower over longitudinal studies than cross-sectional studies.

Evans et al. (1997) extended the General Theory of Crime by assessing the effects of low self-control on crime and analogous behaviors and by using two distinct measures of self-control, one that was an attitudinal measure and one that was an analogous behavior scale. Evans et al. (1997) also examined the "claim that low self-control has effects not only on crime but also on life chances, life quality, and other social consequences" (Evans et al. 1997:475). Evans et al. (1997) found support for the idea that self-control theory predicts negative relationships between low self-control and social consequences besides crime, specifically life outcomes and quality of life. They also found that low self-control was related to diminished quality of interpersonal relationships, reduced involvement in church, low levels of educational and occupational attainment, and, possibly, poor marriage prospects (Evans et al. 1997).

Tittle et al. (2004) investigated a "conceptual distinction between capability for self-control and the desire to exercise it" (Tittle et al. 2004: 143). The authors believed that self-control theory could be improved if researchers take into consideration that individuals' capacity for self-control is different from an interest in restraining oneself. They asserted that "people who simultaneously

lack the capacity for strong self-control and who possess little desire to control themselves may be especially prone to criminal conduct, while those with strong capability for self-control and with great interest in exercising that self-control may be especially unlikely to offend" (Tittle et al. 2004:148).

Self-control ability and self-control desire were both found to be important in producing conformity. Cumulative and interaction effects were found. "Prediction of criminal/deviant behavior is enhanced when both are taken into account simultaneously, but for some measures of misbehavior, the operation of self-control ability appears to be dependent on self-control desire; when desire is low, ability has a strong influence but when desire is high, ability has much less influence" (Tittle et al. 2004: 165).

Utilizing theoretical positions from Agnew regarding motivation and from Gottfredson and Hirschi regarding self-control, Higgins and Ricketts (2004) used self-report responses from 317 undergraduates to examine the mediating and moderating roles of freedom and opportunity in self-control theory. According to Higgins and Ricketts (2004) freedom is "an individual's view that he or she has less to lose by committing a crime" (81). Path analysis showed that freedom measures mediated the link between low self-control and the dependent variables used in this analysis, which were academic dishonesty and drunk driving. In other words, the strength of the relationship between low self-control and the dependent variables was greater when freedom was taken into consideration as an intervening variable, which supports Agnew's (1995) assertion that freedom serves as a negative motivation for individuals with low self-control. However,

they found that opportunity only mediated the link between low self-control and academic dishonesty, not drunk driving. Therefore, Higgins and Ricketts (2004) claim that the roles of freedom and opportunity, originally unclear in self-control theory, need to be developed and evaluated as possible intervening variables in order to better understand the relationship between self-control and crime.

Junger and Tremblay (1999) found that social disadvantage was not related to delinquency after controlling for other variables, such as low self-control and supervision. Those with low self-control are more likely to experience a multitude of problems in addition to delinquency, such as divorce, unemployment or employment instability, and accidents (Junger and Tremblay, 1999). According to Junger (1994) and Junger and Tremblay (1999), children involved in accidents lacked parental supervision when compared to children that were not involved in accidents. Self-control theory evaluates lack of parental supervision as a causal factor in low self-control. Junger illustrates that lack of parental supervision can explain other problems among children besides just delinquency. Therefore, we see support here for Gottfredson and Hirschi's (1990) claim that low self-control contributes to a variety of analogous behaviors, not just delinquency.

Following Grasmick et al. (1993), the interaction effect of low self-control and opportunity was examined and found to be significant. For females, the interaction term between low self-control and opportunity was significant, but it was not for males. Burton et al. (1998) conclude that opportunity is less determinant of male criminality than it is of female criminality. Self-control was

also related to analogous behaviors for both males and females according to this research. Among the "rival" theoretical approaches that were controlled for, only differential association theory explained any part of female criminal behavior (Burton et al. 1998).

More recently, Travis Hirschi has redefined self-control and addressed the issue of compatibility between self-control and social control (Hirschi 2004). According to Hirschi (2204), he has created a definition of self-control that fits with both The General Theory of Crime and with social control theory. "Redefined, self-control becomes *the tendency to consider the full range of potential costs of a particular act*" (Hirschi 2004:543, emphasis in original). Hirschi also addresses how to measure self-control. He says that rather than using the list of elements of self-control as a way to construct measures it would be better to use this new definition to construct measures because the new definition is "consistent with how self-control affects would be offenders' calculation of the consequences of their acts at the point of decision-making" (Piquero and Bouffard 2007:3). "Identification of these problems led Hirschi to suggest that the best measure of self-control would be a count of the number of different acts that have long-term negative consequences for the individual committing them" (Piquero and Bouffard 2007:4). Hirschi also "constructed a self-control scale based on the following nine items (self-control response in parentheses)": (1) "Do you like or dislike school?" (Like it) (2) "How important is getting good grades to you personally?" (Very important) (3) "Do you finish your homework?" (Always) (4) "Do you care what teachers think of you?" (I care a lot) (5) "It is none of the

school's business if a student wants to smoke outside of the classroom." (Strongly disagree) (6) "Does your mother know where you are when you are away from home?" (Usually) (7) "Does your mother know who you are with when you are away from home?" (Usually) (8) "Do you share your thoughts and feelings with your mother?" (Often) (9) "Would you like to be the kind of person your mother is?" (In every way, In most ways.) (Hirschi 2004:545). Using this measure Hirschi found that as the "number of inhibiting factors" (as measured by this new scale) "increased, the percentage of high school student reporting delinquent acts steadily decreased" (Piquero and Bouffard 2007:5).

Piquero and Bouffard (2007) tested Hirschi's newly proposed scale and compared it to the Grasmick et al. (1993) scale. Piquero and Bouffard (2007) found that the Grasmick et al. (1993) "attitudinal self-control measure was positively and significantly related to the likelihood of both drunk driving and sexual coercion" when assessed by itself (18). They also measured the "number and salience of inhibiting factors as suggested by Hirschi" and found that this "measure of self-control was negatively and significantly related to both drunk-driving and sexual coercion intentions" (Piquero and Bouffard 2007:18). Finally, Piquero and Bouffard (2007) found that when they included Hirschi's redefined self-control in their analysis, the previously significant effect of the Grasmick et al. (1993) scale was eliminated. This research confirms Hirschi's argument that the attitudinal scales are not the best measure for the redefined self-control.

Strengths and weakness of Self-Control Theory

After over a decade of empirical research a few criticisms of the theory remain. First of all, self-control theory still does not fully account for the gender differences and age differences in offending, especially changes over the life course. Secondly, the role of opportunity and other conditioning variables must be further explored to obtain a consensus in the field about the role conditioning variables play in the relationship between low self-control and crime. Another problem is that results of analyses regarding self-control are dependent upon the measures used to specify level of self-control, which means that we, as a field, have not decided how, exactly, self-control should be measured. The fact that behavioral measures are more predictive contributes to the criticism that the theory is tautological (circular reasoning) as well. In other words, the theory has difficulty separating out measures of self-control from characteristics or measures of crimes. Self-control theorists cannot ignore the role of differential association and learning perspectives either. These theoretical positions must be taken into consideration in conjunction with self-control theory to form a clearer picture of why individuals commit crimes. Therefore, calling self-control theory a general theory is problematic, according to Agnew (2005).

Chapter IV. Hypotheses

Theoretical integration in the field of criminology is strongly discouraged by several important contributors, especially Travis Hirschi. Hirschi argues adamantly that criminological theories can not be integrated if they are based upon different underlying principles, including different assumptions regarding basic human nature. This argument dates back to the old Locke v. Hobbes debate. John Locke believed that the human mind is like a blank slate and that man is, by nature, a social animal. However, Thomas Hobbes (1996) took a negative view of human nature and believed that society could not exist without the power of the state. In the field of criminology, some theories, such as strain theory, assume that individuals are inherently good and that it takes some outside force (in this case, strain) to increase their likelihood for delinquency (Merton 1938). However, other theories, such as control theories, assume that humans are inherently self-interested, pleasure-seeking, pain-avoiding beings and that it takes some force put upon them to *keep* them from offending (i.e. self-control) (Kornhauser 1978). Hirschi (1989) argues that if a researcher ignores the underlying assumptions of a theoretical approach and integrates that approach with a theory that is fundamentally different at its core, then the integration effort itself is worthless. In Appendix I several types of integration approaches are examined. This research uses the propositional approach described by Akers and

Sellers (2004), which means addressing the causal order of the theories. This

approach (although described by Akers and Sellers and others as propositional

integration) is described by Barak (1998) and others as an end-to-end integrative

approach. According to Barak (1998), under certain conditions the causal

processes of one theory can interlock in a particular way with causal processes of

another theory.

> End-to-end integration is developmental in that it
> proposed a causal order across propositions of the
> various theories to be integrated. The dependent
> variable in theory Z is identified as an independent
> variable in theory B; thus the process described in
> theory A occurs prior to the process explained by
> theory B (Bernard and Snipes 1996:307).

How does this research overcome the obstacles outlined by Travis Hirschi

regarding integration of self-control theory? A thorough examination of the

foundations for the two theories addressed in this research brings to light two key

factors in determining the feasibility of the current proposed integration attempt.

First of all, it is a widely accepted fact that self-control theory's goal is to explain

criminality, while strain theory, on the other hand, clearly explains *crime* (i.e., the

state of low self-control or criminality vs. the *state* of strain). In addition to the

causal order argument, it is this distinction that allows for integration of the two

theories. Since Strain Theory explains crime and Self-Control Theory explains

criminality, the two could work together to explain acts of deviance.

In terms of causal order, criminality typically occurs prior to crime. In

other words, self-control, as clearly explained by Gottfredson and Hirschi (1990),

is established (or not) very early in one's life and the extent to which a person has or does not have self-control is already established before any proximate strain might lead to criminal coping behaviors, which is what makes this research an end-to-end integration effort. The fact that most of the strain sources addressed in this research are proximate strain measures makes this causal order argument possible. However, having said that, some distal sources of strain could very well exist in a person's life before self-control is established (i.e. child abuse at a young age).

Secondly, Agnew (2006) clearly states that individual traits a person possesses influence how a person reacts to strain (and also how much strain a person experiences) and the extent to which a person has coping mechanisms to deal with the strain in a non-criminal fashion. According to Agnew (2006), "criminal coping is more likely when people lack the ability to cope in a legal manner. For example, crime is more likely when people do not have the verbal skills to negotiate with those who mistreat them" (3). Additionally, "crime is more likely when people are in environments where the likelihood of being sanctioned for crime is low" (Agnew 2006:3). Agnew acknowledges that many people, especially those prone to crime, do not consider the long-term consequences of their behavior (Agnew 2006).

> Some individuals are more disposed than others to respond to strains with crime. They may possess personality traits which increase their inclination to crime. Some individuals, for example, are easily upset, become very angry when upset, and have aggressive tendencies" (Agnew 2006:18).

Agnew also argues that chronic exposure to strains increases a person's likelihood for criminal behavior. Perhaps they view crime as their best coping option. Certainly, this type of repetitive exposure to strain contributes to negative emotional *traits*, which includes anger, frustration, depression and fear (Agnew 2006). Low constraint and negative emotionality are two such traits that Agnew discusses in detail. Agnew defines low constraint as the "tendency to act without thinking, engage in risky behaviors, reject social norms, and show little concern for others" (Agnew 2006:41). Negative emotionality is the "tendency to become easily upset, experience intense emotional reactions when upset, and have an aggressive interactional style" (Agnew 2006:41). According to Agnew (2006), "parents who employ harsh, erratic disciplinary techniques fail to teach their children to exercise self-restraint" (41).

In review of this information, one can see that Agnew is referring to a *trait* or group of traits that a person possesses or does not possess *prior to experiencing strain* that causes him or her to cope criminally with that strain and when strain is chronic it becomes even more likely that the person will cope criminally. I argue that chronic exposure to strain could very well be a result of a life filled with low self-control, as research clearly shows that low self-control leads to many problems for an individual, not only criminal problems (Gottfredson and Hirschi 1990, Junger 1994). However, it could also be the case that it is a situation of spuriousness in that a person's early childhood experiences with parents influences both strain (distal and cumulative effects) and self-control as well. Strains can be provocation for specific crimes (i.e. one responds with spousal

abuse when faced with the strain of a nagging husband). The types of crime a low self-control person commits on any given day can be affected not just by opportunity but by the strain of the moment.

When we couple this type of information from Agnew with what we learn from Gottfredson and Hirschi (1990), we see that the *trait* low-constraint Agnew (2005, 2006) considers in his latest publications is fundamentally the same as the *trait* of low self-control described by Gottfredson and Hirschi.   As stated in Chapter II, "people who lack self-control will tend to be impulsive, insensitive, physical (as opposed to mental), risk-taking, short-sighted, and nonverbal, and they will tend therefore to engage in criminal and analogous acts" (Gottfredson and Hirschi 1990:90).

Therefore, this research, in utilizing the end-to-end, propositional, or causal order integration approach, overcomes Hirschi's argument against theoretical integration. Low self-control normally comes before criminal behavior and often strain, especially proximate strains, and the underlying assumptions regarding low self-control are the same underlying assumptions that Agnew uses to explain criminal coping (i.e. low constraint and negative emotionality). In its basic form, a model of this theoretical justification would look something like:

$$\text{Low self-control} \rightarrow \text{strain} \rightarrow \text{likelihood for criminal coping} \rightarrow \text{crime}$$

Opportunity to offend is considered an important component in both GST and self-control theory, although more so for self-control theory. According to

strain theory, if opportunity for criminal behavior is present then criminal coping becomes more of an option for the strained individual. Additionally, research shows that self-control theory has more explanatory power when criminal opportunity is taken into consideration as well (Grasmick et al. 1993, Longshore 1998). However, the present study does not include a measure for opportunity as no measure exists in this particular data set. I include it here in justifying integration because it is one more important concept the theories have in common and is a significant step in thinking about how the theories fit together chronologically.

In summary of this discussion, even though self-control theory and strain theory have very different fundamental assumptions regarding human nature, they can be integrated in this end-to-end fashion due to the fact that the *trait* of criminality (as determined by self-control theory) precedes the *state* of strain (as proximate strain). This research tests a causal model with cross-sectional data. However, in an ideal setting, one would measure low self-control causally prior to the strains and coping mechanisms, and the strain and coping mechanisms causally prior to crime taking into consideration the differences in distal and proximate measures of strain. Unfortunately, this data set does not allow for that type of analysis.

Therefore, this study hypothesizes that an interaction effect exists between strain and low self-control and that when these concepts are measured and taken into consideration together, we gain a greater understanding of why some people are more likely to commit crimes than are others. This approach should certainly,

at the very least, lend support to Agnew's (2005) assertion that a piece of research evaluating strain theory should take into consideration as many variables as is reasonable. I hypothesize that the tendency for strain to lead to crime and deviance is greater among individuals with low self-control than among individuals with high self–control. Both strain theory and self-control theory, considered independently, have received considerable support in research. The highest likelihood of criminal behavior should exist where self-control is low and strain is high. The present study explores Agnew's claim for the need to integrate theories by examining interaction effects. Thus, low self-control might not only lead to deviance but also magnify the tendency for strain to do the same.

According to self-control theory, if a person has low self-control he or she is more likely to choose criminal behavior as an option. Additionally, Gottfredson and Hirschi (1990) acknowledge that opportunity to offend must also be present. Agnew (1991) also acknowledges that when people feel strained they have choices regarding their subsequent behavior. Some people react to strain with anger or aggression, which makes them more likely to engage in criminal behavior. However, again, the opportunity for criminal behavior must also be present. Strain does not automatically lead to criminal behavior. The negative affective states described by Agnew must be present as well as opportunity to offend. Therefore, the present analysis evaluates the extent to which strain lead to deviance for individuals with varying levels of self-control.

This analysis uses product terms and OLS regression to examine the proposed interaction effect of strain and self-control on deviance.

$$\text{Deviance} = a + b_1(\text{Strain}) - b_2(\text{Self-Control}) - b_3(\text{Stress X Self-Control})$$

The prediction is that b_3 will be statistically significant. This would indicate that the effect of strain on deviance is not the same at all levels of self-control. The signs of the coefficients are expected to reveal that the positive effect of strain on deviance is expected to decrease (i.e. become a weaker positive effect) as self-control increases.

Chapter V. Methods

Sample

      The non-random sample used to test the hypotheses for this study is a result of a survey created by Dr. Harold Grasmick, Dr. Susan Sharp, and Dr. Emiyko Kobayashi and administered during a two-week period in April 2003. The survey was administered to 505 college undergraduate students enrolled at a major state university in the Midwest. The university where the study was conducted had a student population of approximately 22,000 and is located within a metropolitan area with approximately 1.1 million residents. The survey included measures of a wide variety of variables from many theories of deviance or criminality, however only items relevant to the current study are used in this analysis.

      The fact that the sample is non-random is a limitation. However, although college students may represent a qualitatively different sample compared to people of the same age in the population who are not college students, the use of undergraduates in the analysis was beneficial in that they were easily and readily accessible.

      The students surveyed were enrolled in eight sections of the Introduction to Sociology course that is an option for satisfying a general education

requirement. The course attracts primarily freshmen and sophomores, who are more likely to be working on their general education requirements and are likely not to have yet declared a major. Because the students were selected for participation in this manner and are likely to be at the beginning of their academic career, the students are more likely to be within the age range that is associated with greater deviant behavior (i.e. late teens and early twenties). In fact, 50% of students surveyed were freshmen and 30% were sophomores. The mean age of the sample was 19.7 years old.

 Although the sample is local, non-random, and, therefore, not generalizable to the entire population or the entire student body, the sample has many similarities to the entire student population. The sample appears to correspond to the university population in the distribution of race and ethnicity. For example, 71% of the student population is White compared to 73.1% of the sample. Additionally, 5.8% of the entire university population is Black, 3.5% is Hispanic, 4.8% is Asian, 6.9% is Native American, and 7.6% are international students compared to 6.7% Black, 3.4% Hispanic, 5.7% Asian, 5.0% Native American, and 5.5% Other in the sample.

However, when comparing the sample to the entire student population, there are differences in the distribution of sex. While 49% of the student population is female, 57% of the respondents in the survey are female. It may be the case that the overrepresentation seen in the sample is a reflection of the greater tendency of females, compared to males, to take an Introduction to Sociology course.

As previously stated, 505 students were surveyed for this study. However, 3 cases were deleted from the present analysis due to the fact that they did not answer the question regarding gender. Therefore, 502 respondents are utilized for the present study.

Dependent Variable

Deviance. The dependent variable *Deviance* is a scale created by summing z-scores for the different items measuring deviant behaviors. *Deviance* is measured with the item "How often have you engaged in the following behaviors in the past year?" Fifteen deviant behaviors are included in the survey. The respondents were asked how often they destroyed property that did not belong to them, stole something worth $5 or less, stole something worth more than $5, hurt someone badly enough that they needed bandages or a doctor, smoked cigarettes or used tobacco, cheated in school to get a better grade, engaged in sexual relations with someone not considered to be their boyfriend/girlfriend, gambled illegally, drank alcohol, used marijuana, used other illegal drugs, drove without a seatbelt, exceeded the speed limit by 15 mph or more, sold drugs, and drove a car or motorcycle after drinking more than one drink. Answer choices included never, rarely, sometimes, often, and almost always. There are fifteen deviance items. Missing data for each item were recoded to the mean for that item. The number of missing cases, along with descriptive statistics for each item, are reported in Table 1.

Table 1 here.

A principal components analysis was conducted with the fifteen deviance items. This analysis produced four eigenvalues greater than 1.0 (4.968, 1.622, 1.335, and 1.160). The complete list of eigenvalues is reported in Table 2.

Table 2 here.

Given the large number of items included in the scale, the Scree Discontinuity Test was applied to determine the number of relevant factors. The difference between the first and second eigenvalues was 3.346. The difference between the second and third eigenvalues was .287 and the difference between the third and fourth was only .175. Therefore, in accordance with the reasoning of the Scree Test, this suggests a single-factor solution. Thus, a unidimensional scale measuring general deviance was produced.

Cronbach's alpha for the general deviance scale is .851. This reliability analysis indicated that Cronbach's alpha for this scale could not be improved by removing any items. A principal components analysis was run on the 15 deviance items. Factor loadings, means, and standard deviations for these items are reported in Table 1.

In order to give equal weight to each of the indicators of deviance, z-scores were obtained for each item. This resulted in a linear composite of z-scores, a general deviance scale, with a mean of zero and a standard deviation of 8.539.

Independent Variables

Strain Measures. I will create two measures of strain. One will be a measure of goal blockage and the other will be a measure of stress. These

measures incorporate the components of strain discussed by Robert Agnew's General Strain Theory, which are (1) discrepancy between aspirations and expectations, (2) discrepancy between expectations and outcomes, (3) perceived unfairness of outcomes, (4) exposure to negatively valued stimuli and (5) removal of positively valued stimuli.

Goal blockage. As previously discussed, Agnew's General Strain Theory suggests that strain may result from a failure to achieve positively valued goals. This study measures that type of strain by evaluating the discrepancy between one's aspirations and expectations, between one's expectations and outcomes, and the actual outcomes and individual's perception of the unfairness of those outcomes. The study contains measures of aspirations, expectations, perceived unfairness, and actual outcomes in the areas of grades, income, physical appearance, and social life. Missing data for these items were recoded to the mean for that item. The number of missing cases for each item and the univariate statistics are reported in Table 3.

<center>Table 3 here</center>

First of all, there are four questions that each of the above mentioned measures of strain had in common. All measures are coded in such a way that higher number responses equal higher amount of importance, success, or unfairness. Aspirations are measured with the item "How important is it to you to achieve the following goals?" Individuals who responded that they have "No Goals in this Area" to this item were recoded 1 for "Not very important." Expectations are measured with the item "How successful do you believe you will

be in achieving the following goals?" Individuals who responded that they have

"No Goals in This Area" for this item were recoded 1 for "Not Very Successful."

Outcomes were measured using the item "How successful have you been in

achieving the following goals?" Individuals who responded "No Goals in This

Area" for this item were recoded 1 for "Not Very Successful." Finally, perceived

unfairness was measured using the item "How fair do you believe your

opportunities are to achieve the following goals?" (4=Not at all fair, 3=Somewhat

fair, 2=Fair, and 1=Very Fair). Individuals who responded "No Goals in This

Area" on these questions were recoded 1 for "Very Fair" following the logic that

if they did not care about the item enough to consider it a goal then they probably

did not care about the item enough to perceive unfairness.

The four goals that these strain measures asked about in common were:

making good grades in college, making the amount of money I deserve when I

finish my education, looking the way I want to look, and having the social life

that I want. Again, all missing data were recoded to the mean for the applicable

item.

Expectation scores for each respondent were then subtracted from scores

on aspirations in the areas of grades, income, physical appearance, and social life.

Discrepancies between aspirations and expectations on each of these four areas

were converted to z-scores and then summed together to produce a measure of

discrepancy between aspirations and expectations (which meant a summation of 4

items). A higher score indicated greater strain. The variable measuring this

discrepancy, *Aspirations-Expectations*, has a mean of zero and a standard deviation of 2.91. The scores for this variable ranged from -9.63 to 8.64.

The same procedure was followed to create the discrepancy between expectations and outcomes, *Expectations-Outcomes*. That variable has a mean of zero and a standard deviation of 2.70. The range for this variable is -8.54 to 9.71.

The final measure of goal blockage refers to individuals' perceptions of the unfairness of the outcomes they experience. The item "How fair do you believe your opportunities are to achieve the following goals?" is used as the measure of perceptions of unfairness in outcomes. The item was recoded to reflect a measure of perceived unfairness rather than fairness so that lower scores would reflect fairness and higher scores would reflect unfairness (Not Very Fair=4, Somewhat Fair=3, Fair=2, and Very Fair=1). The variable *Unfair*, is the sum of the respondent's scores on the items over the four goal domains. Individuals who responded "No Goals in the Area" were recoded to 1 for "Very Fair" following the logic that if a respondent does not care about a domain enough to consider it a goal then he or she is not likely to perceive current outcomes as unfair. The four items (making good grades in college, making the amount of money I deserve when I finish my education, looking the way I want to look, and having the social life that I want) were converted to z-scores before summing in order to give all four variables equal weight in the new variable, *Unfair*. *Unfair* has a range from -8.19 to 4.53, a mean of zero, and a standard deviation of 3.02. The items and univariate distributions are reported in Table 3 as well.

Next, each of the strain measures, *Aspirations-Expectations, Expectations-Outcomes*, and *Unfair*, were converted to z-scores a second time, in order for each strain measure to have equal weight when summed a final time to create a total discrepancy measure called *Goal Blockage*. This variable has a mean of zero, a standard deviation of 1.42, and a range of -4.33 to 4.69. *Goal Blockage* provides a composite measure of strain due to goal blockage. Higher scores on goal blockage indicate greater strain. Factor analysis and reliability analysis are not appropriate or necessary for the creation of this variable because there is no assumption that a person who experiences one type of strain tends to also experience the other types. Thus, a single factor would not necessarily be expected. Instead, the variable is a "count" of z-scores.

Additionally, four subscales were created based on the four items, making good grades in college (*Grades*), making the amount of money I deserve when I finish my education (*Money*), looking the way I want to look (*Looks*), and having the social life that I want (*Social Life*). The same process that led to the creation of the *Goal-Blockage* composite was utilized for each separate topic of question. In other words, the variable *Grades* was created by summing z-scores for aspirations-expectations, expectations – outcomes, and unfair for only the question asking respondents about making good grades in college. This was done for all four topic areas in order to capture the disjunction between aspirations and expectations, expectations and outcomes and perceived unfairness for all the different topics falling under the composite measure *Goal-Blockage*. *Money* was created by summing z-scores for aspirations-expectations, expectations –

outcomes, and unfair for only the question asking respondents about making the amount of money they want to make after college. *Looks* was created by summing z-scores for aspirations-expectations, expectations – outcomes, and unfair for only the question asking respondents about "looking the way I want to look." *Social Life* was created by summing z-scores for aspirations-expectations, expectations – outcomes, and unfair for only the question asking respondents about "having the social life that I want."

Stress (Loss of positively valued stimuli and the presentation of negative stimuli). To measure loss of positively valued stimuli and the presentation of negative stimuli as sources of strain, respondents were asked to indicate how much, if at all, they were bothered by any of twelve different events (shown in Table 4). Respondents were asked to "Please indicate the degree to which the following events bothered you while you were growing up." Individuals who indicated that an event bothered them "Not at all," or indicated that the event "Did not occur," were coded 1. Those who responded that the event "Did not bother me very much" were coded 2. Responses of "Somewhat bothered me" were coded 3 and answers of "Bothered me quite a lot" were coded 4. All missing data were coded 1.

Z-scores were obtained for each of the 12 items and were summed to produce one scale, which is called Stress. This resulted in a linear composite of z-scores. Because self-control theory would predict that stressful events would be more likely to cluster in the same people (due to the trait of low self-control), factor analysis was conducted. It did not, however, produce any meaningful

factors, perhaps because these questions were not simply asking if these various events occurred, but what the respondents' *reactions* were to these events. A sum of the z-scores for each item was tabulated. The mean for *Stress* is .0188, and the standard deviation is 5.252. Cronbach's alpha for Stress is .612. The items and univariate distributions are reported in Table 4.

Table 4 here.

Subscales were also created from the twelve items used to create the *Stress*. Of the twelve items, five seem to be measuring types of strain addressing the loss of positive stimuli (i.e. loss of a family member through death, loss of friend(s) through death, family members moved away, respondent moved away from friends or family, and a close friend moved away). Z-scores for these five items were summed to create the scale *Loss of Positive Stimuli*. Again, factor analysis did not indicate that there was unidimensionality among the variables. This scale has a range of -4.72 to 8.39, a mean of .0080 and a standard deviation of 2.78. Cronbach's alpha for *Loss of Positive Stimuli* is .441.

The second subscales created from the twelve items measuring stressful events addresses the issues of the presentation of negative stimuli, of which there are seven items (i.e. parents divorced, physically abused, sexually abused, parents very strict, not allowed to express opinions at home, not allowed to go out with some of my friends, and crime/criminal behavior were a common occurrence in my neighborhood). Z-scores for these seven items were summed to create the scale *Presentation of Negative Stimuli*. Again, factor analysis did not indicate that there was unidimensionality among the variables. This scale has a range of -3.36

to 21.45, a mean of .0060 and a standard deviation of 3.797. Cronbach's alpha for *Presentation of Negative Stimuli* is .600.

     Self-Control Scale. Self-control is the second independent variable in the current study. Self-control in this study is measured using Grasmick et al.'s (1993) Self-Control Scale. This scale contains twenty-four attitudinal items, four for each of the six characteristics of self-control described by Gottfredson and Hirschi (1990). According to Gottfredson and Hirschi (1990), if the six characteristics of self-control are measured then one is, in actuality, measuring the variable self-control. The six characteristics of self-control, which were discussed in detail in Chapter III, are operationalized by Grasmick et al. (1993) with four questions each using Likert-scale responses (strongly agree to strongly disagree). These individual items and response options are displayed in Table 5 along with frequencies, means, and standard deviations for each item.

<div align="center">Table 5 here.</div>

     All twenty-four items were recoded to reflect a measure of high self-control, not low self-control. Therefore, higher number answers reflect higher levels of self-control. The self-control scale, as predicted by Gottfredson and Hirschi (1990), should be negatively related to delinquency when coded in this manner. Factor analysis was conducted prior to the creation of the self-control scale. The results of the factor analysis indicated that the items are indeed measuring one factor, or variable, as predicted by Grasmick et al. (1993). The complete list of eigenvalues is reported in Table 6. Factor loadings are reported in the last column of Table 5.

Table 6 here.

A reliability analysis indicated that reliability could be maximized by including all twenty-four items in a linear composite. The next step in the construction of the self-control scale was to create z-scores for all items. After converting all twenty-four items to z-scores, the items were then summed to create the actual self-control scale, *Self-Control*, which has a range of -51.53 to 32.32, a mean of zero and a standard deviation of 11.56. Cronbach's alpha for *Self-Control* is .86.

Control Variables

Female. *Female* is a dummy variable with males coded 0 and females coded 1. As previously stated, 57% of the respondents in the sample are female. The variable *Female* has a mean of .574 and a standard deviation of .495.

Agetrun. The mean age of the respondents in the sample is 19.68 and the standard deviation is 1.6. The range of the variable age, as used in this study, was 18-34 years of age. Originally, the age variable contained five respondents with ages greater than twenty-five. In an effort to make sure these statistical outliers do not skew the data the variable age was truncated (*Age*). The five respondents with ages greater than twenty-five were recoded to reflect an age of twenty-five years old. Thus, the variable *Age* has a range of 18-25. The mean and the standard deviation changed only slightly after this adjustment (mean 19.64 and standard deviation 1.39).

Race. In this study race is measured with the question, "What race or ethnicity do you consider yourself to be?" Responses included White, Black,

Hispanic, Asian, Native American, and Other. Any missing cases on the race question were recoded as Other. When creating a dummy variable for this study, whether or not the minority was socially disadvantaged or not was taken into consideration. One dummy variable was created. For this dummy variable, *Disadvantaged Minority*, categories of White, Asian and Other were coded zero and responses of Black, Hispanic, and Native American were coded one. The variable *Disadvantaged Minority* has a mean of .149 and a standard deviation of .357.

     Family Education. In the present analysis, parental level of education is used as the proxy to measure a family's socioeconomic status. The survey includes an item measuring actual family income, however, the non-response rate for that item was very high (approximately 12%). Therefore, it was necessary to use an alternative measure of family socioeconomic status, education. The survey included items measuring the highest level of education attained by both the respondent's mother and the respondent's father. Response choices included Some Junior High School but did not Graduate, Junior High School Graduate, Some High School but did not Graduate, High School Graduate/GED, Vocational/Certificate Training, Two Year Degree, and Some College/No Degree, College Degree, and Graduate or Professional Degree. Respondents were separated out for analysis based on whether either parent has a college degree and a dummy variable was created. Respondents who had a parent with a college degree are coded 1 while respondents who did not have a parent with a college degree are coded 0. Approximately 62% of the respondents have at least one

parent with a bachelor's degree or above. There are no missing data for this item. The variable *Family Education* has a mean of .618 and a standard deviation of .486.

Household Structure. Research shows a positive relationship between single-parent households and delinquency (Rankin and Kern 1994; Rebellon 2002). Therefore, it is necessary to include a measure of household structure in the present analysis. Household structure was measured with the item "While growing up, how would you describe your household?" Respondents could reply "yes or not applicable" to the listed family types they experienced during childhood or adolescence. Specific household types listed include single parent household (mother present), single parent household (father present), both biological parents in household, mother and step-father, father and step-mother, with grandparents, foster care, adoptive parents/guardians, and both biological parents and grandparents. The variable used in this analysis is a dummy variable where respondents who had ever experienced a single parent household while growing up were coded 1 and respondents who had only grown up with two or more adults in their household were coded 0. The variable *Single Parent* measuring this household structure had a mean of .179 and a standard deviation of .384. Slightly more than 82% of the sample grew up in home with two or more adults present. There were no missing data for this item.

Interaction Terms

Finally, after creating the three separate independent variables Stress, Goal Blockage, and Self-Control, it was necessary to create variables that would

measure the interaction between strain, as measured by Stress and Goal-Blockage, and Self-Control. This step allows for the analysis to indicate whether the effect of stress and goal blockage on deviance is different for people with different levels of self-control, which is the assertion of this research. Therefore, interaction terms were created, *Stress and Self-Control* and *Goal Blockage and Self-Control,* and will be tested as additional, primary independent variables in the analysis. These interaction terms were created simply by multiplying the individual variables included in the interaction.

Interaction terms were also created in order to see if there was an interaction effect between self-control and any variables or subscales of the composite measures for stress and goal blockage. Interaction terms, *Aspirations-Expectations and Self-Control*, *Expectations-Outcomes and Self-Control*, and *Unfair and Self-Control* will be used to see if the relationship between goal-blockage and deviance is different for people with different levels of self-control. Interaction terms, *Grades and Self-Control, Money and Self-Control, Looks and Self-Control, and Social Life and Self-Control*, were created to evaluate if the relationship between types of goals blocked is different for people with different levels of self-control.

I also created interaction terms for the subscales of stress. *Loss of Positive Stimuli and Self-Control* and *Presentation of Negative Stimuli and Self-Control* will be used to see if the relationship between stress and deviance is different for people with different levels of self-control.

Chapter VI. Results

Bivariate Correlations

SPSS is the statistical package used for this analysis and an SPSS data set is used throughout. A correlation matrix showing the bivariate correlations of all the control variables and composite measures included in the analysis is presented in Table 7.

Table 7 here

Effects of Stress, Goal-Blockage, and Self-Control on Deviance

In order to determine if there is an interaction between strain and self-control, the analysis examines whether the effect of strain on deviance is different depending upon a person's level of self-control. This question will be addressed for each of the measures of strain described earlier.

In Table 8, I regress Deviance on the control variables, *Self-Control, Stress, Goal Blockage*, and the two product terms, *Stress and Self-Control* and *Goal Blockage and Self-Control*. Equation 1 (r-square = .29) includes only the control variables. Of the control variables in this equation, *Female* and *Age* were both statistically significant. *Female* (b=-5.79, p=0.000) has an inverse effect on Deviance, which means that females in this sample engaged in less deviance than males. *Age* (b=0.754, p=0.004) has a positive relationship with deviance in this sample (where the age range was 18-25 after truncating the variable). Therefore, the older a person, the more deviance he or she reported. Unlike *Female* and *Age*;

Disadvantaged Minority, *Family Education*, and *Single Parent* were not significantly related to *Deviance*.

Table 8 here

Equation 2 (r-square = .29) includes the three independent variables, *Stress, Goal Blockage*, and *Self-Control*. In this equation, of the control variables, *Female* and *Age* remained statistically significant. Of the independent variables, *Stress* and *Self-Control* are both statistically significant. Stress (b=0.134, p=0.032) as a source of strain, has a positive relationship with *Deviance*, which means that as stress increases, deviance increases, as one would expect it to theoretically. *Self-Control* (b=-0.275, p= 0.000) has a significant, negative relationship with *Deviance*. In other words, as self-control increases, deviance decreases as predicted by Gottfredson and Hirschi. *Goal Blockage*, a second source of strain measured in this analysis, was not statistically significant in Equation 2.

The third equation included the product terms of *Stress and Self-Control* and *Goal Blockage and Self-Control*. In Equation 3 (r-square = .30), the same two control variables remained statistically significant as illustrated in Equations 1 and 2, *Female* (b=-4.586, p= 0.000) and *Age* (b=0.802, p=0.001). Even after taking into consideration the effect of all independent variables, as research clearly shows, females engage in less deviance than males. In Equation 3, it remains the case that the older a person was in this sample the more deviance he or she engaged in. The variables *Stress* (b=0.155, p=0.020) and *Self-Control* (b=-0.285, p=0.000) were also still significant, even with the addition of the

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interaction terms to the analysis. When the standardized coefficients for the variables in Equation 3 are examined, it is obvious that *Self-Control* (Beta = -0.375) has the strongest effect on *Deviance,* even stronger than the effect of *Female* (Beta = -0.267). The coefficient for *Self-Control* is also approximately four times larger than the coefficient for the one significant strain variable, *Stress*, which had a Beta of .083.

Neither of the interaction terms in Equation 3 were statistically significant, which indicated that the hypothesis for this research was incorrect. According to these results, taking into consideration the interaction between self-control and stress and self-control and goal blockage does not significantly improve our understanding about how the theories both work to explain deviance. However, since the variables *Stress* and *Self-Control* are both statistically significant in Equation 3, we do see that both theories have something to offer in terms of our understanding about why people commit acts of deviance or criminality. Equation 3 of Table 8 also produced a respectable R-Square of .305. Since neither of the interaction terms were statistically significant and the composite measure of blocked goals was not statistically significant, I decided to break apart the composite measures to some extent to make sure that no effects were being masked by the nature of the composite measures. First I will break the goal blockage variable down by the four domains (*Grades, Money, Looks,* and *Social Life*). Then, I will break *Goal Blockage* down by the type of blockage (i.e. *Aspirations-Expectations, Expectations-Outcomes*, and *Unfair*). Additionally, I

will explore whether any of these sub-scales of goal blockage interact significantly with *Self-Control*.

Effects of Grades, Money, Looks and Social Life on Deviance.

In Table 9, I regress the control variables and the goal blockage subscales *Grades*, *Money*, *Looks*, and *Social Life* on *Deviance*. In Equation 1, the variable *Grades* is introduced into the analysis and is not statistically significant. This is true as well when both *Money* (Equation 2) and *Social Life* (Equation 4) are introduced into the analysis. However, in Equation 3 and Equation 5 the variable *Looks* is statistically significant. There is a positive relationship between *Looks* and *Deviance*. What this means is that respondents who feel strained about their looks reported higher levels of deviance. This could be a reflection of the norms on a college campus or the importance of looking good for this age group. It could be that people strained about their looks report more deviance because of the four categories addressed here, looks is the most difficult to change (i.e. a person has little control over that compared to grades and money). Whatever the reason, it seems that looking the way a person wants to look is more important than grades, money, and social life in determining deviance. Additionally, both *Stress* and *Self-Control* are statistically significant throughout Table 9.

<center>Table 9 here</center>

Table 10 adds the interaction variables *Grades and Self-Control, Money and Self-Control, Looks and Self-Control* and *Social Life and Self-Control* to the analysis from Equation 5 in Table 9. None of the interaction terms were

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statistically significant which indicates that whether these variables do or do not impact deviance is not dependent upon level of self-control. However, *Looks* remains statistically significant in every model in Table 10, regardless of which interaction term is added. In fact, across the analysis the Beta for *Looks* is higher than the Beta for *Stress*.

Table 10 here

Effects of Aspirations-Expectations, Expectations-Outcomes, and Unfair on Deviance.

The next analysis is a linear regression of *Aspirations-Expectations, Expectations-Outcomes*, and *Unfair* on *Deviance*. Table 11 examines the effects of the type of *blockage,* rather than the type of *goal* as examined in Tables 9 and 10, on *Deviance*.

Table 11 here

None of these measures were statistically significant when introduced into the analysis one-at-a-time (Equations 1-3) or all at once (Equation 4). However, a very interesting finding occurs in Table 12 when the interaction variables *Aspirations-Expectations and Self-Control, Expectations-Outcomes and Self-Control* and *Unfair and Self-Control* are introduced.

Table 12

In Equation 2 of Table 12, even with Self-Control and Stress in the analysis, the extent to which a disjunction between expectations and outcomes affects deviance depended on the level of self-control a person had. In other words, the higher the level of self-control the less a disjunction between

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expectations and outcomes effects deviance. Therefore, when examined in this way where G*oal-Blockage* is broken down into its component parts and examined separately, an interaction effect exists.

In summary, while *Goal-Blockage* and *Goal Blockage and Self-Control* were not statistically significant in an analysis, the idea of blocked goals as a measure of strain is not unfounded. The type of goal that is blocked (i.e. *Looks*) matters in terms of the effect on *Deviance* and the disjunction between expectations and outcomes matters when interacting with self-control.

Effects of Loss of Positive Stimuli, Presentation of Negative Stimuli and Interaction terms on Deviance

Due to the fact that breaking down the *Goal-Blockage* composite proved productive, I decided to examine subscales of the *Stress* scale as well. Table 13 displays results for the effects of *Loss of Positive Stimuli* and *Presentation of Negative Stimuli* (the subscales for Stress), as well as the interaction terms *Loss of Positive and Self-Control* and *Presentation of Negative and Self-Control* on *Deviance*.

Table 13 here

In this regression I included the one interaction term that was found to be significant (as well as the components of the interaction term). So, in addition to the control variables, Table 13 included *Self-Control, Expectations – Outcomes*, and *Expectations-Outcomes and Self-Control*. Due to the fact that Looks and *Expectations-Outcomes and Self-Control* are not independent of one another, both variables could not be included in the analysis. Since *Expectations-Outcomes and*

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Self-Control had the higher Beta, that is the variable that I chose to include in

Table 13. While *Stress* has been statistically significant throughout the other

regressions, I did not include it here because I examined its two subscales instead.

Equation 1 introduces the subscale measuring the loss of positive stimuli and it is

not statistically significant. However, the subscale measuring the introduction of

negative stimuli is statistically significant in Equations 2 and 3. In Equation 4 the

interaction term Loss of Positive and Self-Control is statistically significant but

that significance does not appear when all of these variables are included in the

analysis in Equation 6. However, the Presentation of Negative Stimuli is still

significant in Equation 6 and actually has almost the same Beta (.094) as the

original Stress composite (.095) in Table 8. Therefore, these results indicate that

the significance of the variable Stress in the initial regression, Table 8, and

throughout other regressions is primarily a result of the significance in measuring

the presentation of negative stimuli. This is an important step in understanding

what types of strain lead to deviance. As Agnew and others have illustrated,

several types of strain can lead to deviance but for this analysis it is the

presentation of negative stimuli that is the strain measure that is statistically

significant.

Summary

Finally, I examined the R-squares for all the different regressions in this

research. There are two models that have an R-square value of .308, Equation 2

in Table 12 and Equation 6 in Table 13. So, the most variance is explained when

Self-Control, the *Presentation of Negative Stimuli*, and the interaction term for

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Expectations-Outcomes and Self-Control are included in the analysis. However, in Table 8, Equation 3 where *Self-Control* and the original composite measures for *Stress* and *Goal Blockage* were the only independent variables analyzed, the R-square is .305. Therefore, the interaction terms and subscales do not increase explanatory power, but do help to better understand how strain impacts deviance and under what conditions it interacts with self-control.

Chapter VII. Discussion

As previously stated, this research is an attempt to integrate Self-Control Theory and General Strain Theory using an end-to-end integration approach in order to gain a greater understanding of why some people commit acts of deviance more often than others. General Strain Theory posits that people offend because they experience types of strain that are more likely to lead to crime, do not possess coping mechanisms for non-criminal coping, and react to strain in anger rather than other negative emotions. General Strain Theory explains strain as a *state*, the conditions within an individual that led him or her to an act of crime or deviance and those strains may be proximate or distal in nature (Agnew 1992, Agnew and White 1992, Mazerolle et al. 2003). However, Agnew leaves the door wide open for theoretical integration and encourages combining GST with other theoretical approaches.

Self-Control Theory states that people are more likely to offend than others because they have a lower level of self-control, which is established early in life and is considered a *trait* that an individual possesses in varying levels. In other words, Self-Control Theory explains *criminality* rather than *crime*. Agnew (2005, 2006) refers to the idea of traits and uses terms such as negative affect and low constraint, but these terms seem indistinguishable from the concept of low self-control. It is logical to assume that, in individuals, strain and self-control

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interact as argued by Agnew (2005) since everyone experiences strain at some time. Traits develop in individuals very early in life according to Gottfredson and Hirschi (1990), prior to situations occurring to create proximate strain. Self-Control Theory does not allow for theoretical integration. The justification for the type of integration in this research lies in the fact that Self-Control Theory addresses criminality (a trait) and that General Strain Theory addresses a state that is conducive to crime (strain), and that *traits* not only predict crime on their own but are also conducive to creating strain or can actually be the strain in the case of distal strain (Agnew 1992, Agnew and White 1992, Mazerolle et al. 2003).

Given this argument, several tests were conducted measuring self-control and various types of strain and the interaction between these variables. I expected to find that the tendency for strain to lead to crime and deviance is greater for people who have low self-control than for those who have high self-control. However, analyses showed that the type of strain is important in determining whether self-control interacts with strain. This could be due to the fact that the majority of the strain measures used in this analysis are proximate. If distal strain was the focus of the analysis the results may have been different. Perhaps more interaction effects would have been evident given that the causes of distal strain can be very similar to the causes of low self-control (i.e. ineffective parenting, abuse in early childhood).

Four findings are of primary interest. First, I found that composite measures of strain (stressful life events and blocked goals) do not interact with self-control in explaining deviance. However, even with the interaction terms in

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the analysis the strain measure capturing stressful life events and self-control were statistically significant. Based on this information alone, one would conclude that there is nothing to gain by integrating the theories. Again, the results here may have been different if proximate and distal sources of strain were examined separately.

Second, I found that the type and source of strain is important. Of the sources of strain addressed in this study, the only variable that was significant was the variable measuring the extent to which a person has blocked goals about his or her looks (not an interaction between looks and self-control by the way). If a person was strained about his or her looks, he or she reported higher levels of deviance. Additionally, I found that the presentation of negative stimuli was more important in predicting deviance than the removal of positive stimuli. Here, again, the issue of the timing of the source of strain must be addressed because with the presentation of negative stimuli many of the experiences asked about in this survey were events that happened previously in a respondent's life and could have happened in early childhood.

Third, a composite measure capturing blocked goals was not statistically significant in any of the analyses. However, when this scale was broken apart into subscales, in addition to strain about looks, the disjunction between expectations and outcomes, when interacting with self-control, emerged as an important predictor of deviance. When the variable measuring a disjunction between expectations and outcomes stood alone in the analysis it was not statistically significant. However, the variable measuring the interaction between

a disjunction in expectations and outcomes and self-control was statistically significant. Therefore, this theoretical integration attempt was not completely unfounded. In this case, the tendency for strain (as measured by expectations - outcomes) to lead to deviance is greater for people who have low self-control than for those who have high self-control. This is the only interaction term that was statistically significant in all the analyses performed. Perhaps the disjunction between expectations and outcomes is a more accurate measure of strain and that is why it is the only interaction term found significant in this analysis. Another possible explanation to consider is that higher self-control people, for some reason, are more realistic in their expectations or are more empowered to achieve goals.

Another caveat to these findings that must be taken into consideration is that fact that different types of strain lead to different types of emotions, which can lead to different types of deviant reactions (Agnew and White 1992, Mazerolle et al. 2003). This analysis used a general deviance scale that did not separate property crimes or drug and alcohol use, for example. Therefore, some of the strain findings may have been skewed. I may have found more statistical significance and gained a better understanding of the components of strain theory if I had used dependent variables that were broken apart in terms of type of deviance rather than using a composite scale, even though factor analysis indicated that the general deviance items could be combined into one measure.

Finally, I found that throughout all analyses the scale capturing self-control was highly statistically significant and explained more deviance than any

other variables included in the various analyses. Even when all statistically significant variables measuring strain were included in the analysis, self-control remained the strongest predictor of deviance, having a higher standardized coefficient than all the strain measures combined. Again, this could be due to the fact that I measured most proximate strains and the distal strains seemed to have the most impact in the analysis (presentation of negative stimuli) and it could also be partially due to the fact that I used a general deviance scale as described in the previous paragraph.

What does this say about theoretical integration? It depends on whose perspective you take. We gain an understanding of how one type of strain interacts with self-control and that would not have been apparent in an analysis that did not include interaction terms. So, from Agnew's perspective, integration perhaps clarifies how strain affects deviance. However, from the perspective of Hirschi and Gottfredson, no integration would be beneficial in that self-control is predictive enough on its own and does not depend on what other variables are introduced into the analysis.

My conclusion is that exploring these issues yields information gained that would otherwise have remained unknown. Would I make an argument that the theories need to be integrated? No. However, since variables measuring strain and self-control by themselves were included in the analysis and were statistically significant, I will argue that both theories have merit and I believe that it still comes down to the issue of the difference between explaining crime and explaining criminality.

This research adds to the current literature by further clarifying which components of strain are most likely to result in deviance (when measured as a general scale) because these findings indicate that distal sources of strain and the cumulative impact of strains are important due to the fact that of the strain measures the presentation of negative stimuli were statistically significant and that the items measuring removal of positive stimuli were not. Additionally, this research confirms Hirschi's (1979) claim that self-control theory does not benefit from integration with other theories and is also support for Agnew's (2005, 2006) perspective that strain theory does benefit from integration. Of course, this research adds to the literature supporting the validity of the Grasmick et al. (1993) self-control scale as well.

If future research could tease out these differences we would be better able to understand what strain theory has to offer in terms of explaining crime because the theories operate independently of one another. Clearly, from the results of this study, we learn more about deviance by explaining criminality, although support was found for both Agnew's assertions regarding General Strain Theory and Gottfredson and Hirschi's claims regarding the effect of self-control on deviance.

Of course, there are many limitations to the current study that need to be taken into consideration. There are many sources of strain, coping mechanisms, measures of opportunity, and reactions to strain that should be included in the data set to get a full picture of how strain explains deviance. Additionally, using longitudinal data in examining the interaction terms would also be more effective

especially given the nature of a causal order argument such as proposed in this research. Another limitation of this study is the fact that measures were not available in the dataset to address Hirschi's (2007) new definition and operationalization of self-control. It would be very interesting to see if these results changed if self-control was operationalized differently.

Limitations also lie in the fact that I used a secondary data set. In an ideal setting, if I could create a survey and duplicate these analyses, I would utilize a sample more representative of the U.S. population, include measures of opportunity, include a measure of Hirschi's (2004) newly-defined self-control, and try to specifically address distal vs. proximate measures of strain. I also learned from this analysis that breaking apart the general deviance scale could have produced different results as well. Were all of these things accomplished, the study could be duplicated with very different results regarding theoretical support for the theories as well as about theoretical integration in general.

In conclusion, this research tells us what other research has already proven time and time again, that strain and self-control both have an effect on deviance regardless of the other variables introduced into the equation. This study confirms the fact that *how* strain is measured is key to understanding the predictive power of strain theory and much more research is needed in an effort to understand the many components of General Strain Theory. Further exploration regarding the integration of the two theories is needed which offers variables specifically aimed at measuring exactly all the various components of strain theory, different types of deviance, and different measures of self-control. Based

on the findings of this study, some things we can say for certain about predicting deviance is that self-control, as measured by the Grasmick et al. (1993) scale has predictive power that ranks with gender and age in predicting deviance, the presentation of negative stimuli (and perhaps distal strains) has the most predictive power of the types of strain, and these theories do not benefit in any truly substantial way from integration.

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APPENDIX I. THEORETICAL INTEGRATION

There are many different ways that we, as researchers, can evaluate the soundness or validity of a criminological theory. Theories can be treated as existing in opposition to one another, which is often the case. In this approach a researcher often criticizes one theory from the perspective of another. However, no theory, thus far, has been able to explain *all* criminal behavior. In reality, a certain amount of explanatory power can be attributed to each different theoretical approach.

A strictly oppositional approach might overlook important compatibilities between theories. Rather than presenting theories as if they are in competition with one another, a researcher can instead "identify commonalities in two or more theories to produce a synthesis that is superior to any one theory individually" (Akers and Sellers 2004:268). Upon closer examination one may find that two opposing theories are actually not quite as incompatible as originally thought. According to Akers and Sellers (2004), the goal of theoretical integration "is to identify commonalities in two or more theories to produce a synthesis that is superior to any one theory individually"(268). Akers and Sellers (2004) also go on to say that when strain theory is "properly interpreted" it is not "incompatible with control theory and the theories can be integrated"(269).

A proponent of theoretical integration, Delbert S. Elliott argues that different theories often predict similar outcomes and that the results of definitive tests used in a competitive approach are seldom definitive. Elliott also says that

even when theories survive empirical testing the explanatory power tends to be weak (Liska, Krohn, and Messner 1989).

The study of crime and delinquency has broadened throughout the behavioral and social sciences and scientists no longer remain tied to the purely "classical" or purely "positivist" views of human nature. Instead, it has been proposed that this black and white way of looking at criminology typically ignores more factors than it takes into consideration (Barak 1998). According to Gregg Barak (1998), integrative theories are especially appealing because with a diversification of theoretical models it would allow for more creativity regarding knowledge-based frameworks. However, since there is no one established way to integrate theories, the development of integrative theories and practices has "proceeded in a somewhat anomic fashion with no one viable framework for synthetic work" (Tittle 1995:115).

Many attempts at integration have been made, which are evident in examining the history of criminological theory. According to Travis Hirschi, in the study of crime and deviance there are three types of integration, up-and-down (deductive integration), side-by-side (parallel integration), and end-to-end (sequential integration) (Liska et al. 1989). Up-and-down integration is the traditional or classic form of integration, according to Liska et al. (1989). This type of integration consists of the identification of an "abstraction or generality" that incorporates "some of the conceptualization of the constituent theories" (Liska et al. 1989:10)

> This can be done by recognizing that theory A contains more abstract or general assumptions than theory B and, therefore, that key parts of theory B can be accommodated within the structure of theory A. Or it can be done by abstracting more general assumptions from theories A and B, allowing parts of both theories to be incorporated in a new theory C (Liska et al. 1989:10).

An example of up-and-down integration is Mark Colvin's (2000) theory of crime and coercion because it is built around a central causal variable; coercion. Colvin's approach is typical of prior integration attempts (Agnew 2005). Colvin's theory involves combining elements from general strain theory, self-control theory, social learning theory, social support theory, and control balance theory (Barak 1998). It is an integrative approach in that Colvin et al. (2002) "articulate a differential social support and coercion theory of crime" which "ties these emerging themes in criminology together in a new integrated theory" (20). Colvin focuses on the impact of coercion on crime. Here "coercion" is broadly defined and this integrative effort is labeled "up-and-down" integration due to the fact that Colvin "raises the level of abstraction of one theory" (coercion), "such that its propositions merely follow from the conceptually broader theory" (Bernard and Snipes 1996:308). Colvin (2000) says that coercion includes the use of force or the threat of force and intimidation aimed at creating compliance through fear. Coercion can also be brought about by the removal of social supports that meet material and emotional needs of individuals and the pressure that arises from structural arrangements and circumstances that seem beyond the individual's

control, such as that caused by poverty or unemployment, for example. Coercion

is described as the central causal variable, according to Agnew (2005).

> Coercion can be defined as a force that compels or
> intimidates an individual to act because of the fear or
> anxiety it creates. This force can emerge from
> impersonal sources, such as economic compulsion or
> state power, or from interpersonal sources in which an
> individual coerces another for purposes of compliance.
> Coercion can also involve the actual or threatened
> removal of social supports (Colvin et al. 2002:19-20).

Colvin then draws on several leading criminological theories to explain

why coercive control increases the likelihood of crime. He describes the

conditions under which coercion is most likely to result in crime and the larger

social forces that affect the level of coercion an individual experiences (Agnew

2005). Agnew (2005) discusses two main criticisms of this approach. First of all,

Colvin may overlook key causes of crime because of the focus on this central

causal variable and, secondly, theories such as Colvin's suffer from being too

abstract and, therefore, less useful as well (Agnew 2005).

Another example of an up-and-down integrative effort is described by

Akers (1973; 1977). He argues that social learning theory concepts overlap with

social bonding concepts, labeling concepts, conflict theory concepts, and

deterrence theory concepts. He proposed that theoretical integration could be

achieved with these approaches through "conceptual absorption," which means

"subsuming concepts from one theory as special cases of the phenomena defined

by the concepts of another" (Akers and Sellers 2004:270). However, this

approach has been criticized and others claim that Akers' approach really falls short of a fully integrated model (Akers and Sellers 2004).

Akers (1973; 1977) argued that social bonding concepts (belief, attachment, commitment and involvement) could be absorbed. For example, he argued that the "belief concept could be absorbed into the social learning concepts regarding definitions favorable toward or unfavorable toward crime and delinquency" (Akers and Sellers 2004:270). He argued that the concept of commitment could be absorbed by social learning variables as well, specifically differential reinforcement. Finally, attachment, from this perspective, could be subsumed under the concept of the modalities of differential association as one measure on intensity of associations (Akers and Sellers 2004). The main criticism of this approach by Akers is that he did not show how the integrative effort produces anything besides what was already contained in social learning theory itself (Akers and Sellers 2004).

Side-by-side integration refers to the process of separating the subject matter of crime and deviance into specific cases which are explained by different theories (Liska et al. 1989). According to Bernard and Snipes (1996), "side-by-side" integration "involves deciding which theories best explain which types of deviants (e.g., by race or gender) or which types of deviant behavior (e.g., property or violent offenses)" (308). They also say that "side-by-side integration occurs when the assumptions and domain of each theory indicate the type of deviance that can be explained by the theory" (Bernard and Snipes 1996:208). According to Liska et al. (1989), the logic of some theoretical approaches is more

applicable to some types of deviance. For example, they say that rational choice theory might not be an appropriate explanation for homicide but applies well to corporate crime. Hirschi (1979) and Bernard and Snipes (1996) use Elliott, Ageton, and Cantor's (1979) integrated theory to illustrate the side-by-side approach.

Elliott et al. (1979) synthesized strain theory, learning theory and social control theory into a single model. They justified this integration by emphasizing that multiple causal paths lead to delinquency, which is why Hirschi describes this approach as a side-by-side approach. The "proposed integrated theoretical paradigm begins with the assumption that different youths have different early socialization experiences, which result in variable degrees of commitment to an integration into conventional social groups" (Elliott et al. 1979:9).

> Elliott, Huizinga, and Ageton state that, whereas
> control theory is interested in the strength of
> (conventional) socialization, learning theory is
> interested in its content (deviant vs. conforming
> socialization). They thus find it necessary to modify
> control theory, taking into account the type of group to
> which the individual bonds (Bernard and Snipes
> 1996:311).

Hirschi (1979) criticizes this approach because he says that it results in a definition of delinquency that is unrestricted.

> Elliott et al. segregate cases on the basis of the strength
> of initial "bonds to the conventional order." Those with
> formerly strong bonds are said to follow a path to
> delinquency different from the path followed by those
> who have never developed such bonds. As is usually
> true with side-by-side integrations, procedures for
> identifying the two groups are not provided. (Hirschi
> 1979:36).

"End-to-end integration refers to specifying the temporal order between causal variables, so that the dependent variables of some theories constitute the independent variables of others" (Liska et al. 1989:5). "This type of integration would seem to be most applicable when causal conditions can be ordered on a continuum of immediate to remote causes" (Liska et al. 1989:8). By *immediate* they mean causal conditions that act quickly, and directly, on deviance and crime that are not typically mediated by other conditions, for example perceptions and beliefs (self-control for the purposes of this analysis). By remote they mean causal conditions that act indirectly, or act via other conditions, on deviance and crime (strain for the purposes of this analysis) (Liska et al. 1989). However, in reality, most end-to-end efforts allow for both direct and indirect effects. "By doing so, these model have consistently been able to account for a greater proportion of the variance in deviant behavior than have the constituent theories by themselves" (Liska et al. 1989:10).

Liska et al. (1989) offer Elliott's (1985) Integrative Model of Strain, Bonding, and Learning as an example of end-to-end integration. Delbert S. Elliott and his associates (1985) developed an integrated model which proposed that strain weakens social bonds to conventional society, which then promotes stronger bonds to delinquent peers, which, in turn, leads to delinquent behavior. Elliott et al. (1985) argue that strain, control, and learning theories have some basic assumptions and propositions in common (Akers and Sellers 2004). The theories that Elliott et al. (1985) attempted to integrate contain differences

concerning basic assumptions. For example, strain theory discusses what motivates criminals to offend but social bonding theory addresses what keeps already motivated offenders from offending. They reconcile these differences by taking the side of strain and learning theory (Akers and Sellers 2004). "They do away with the assumption of a natural or uniform motivation to crime, allowing for bonding to produce either conventional or deviant outcomes, depending on the involvement with conforming or deviant peers" (Akers and Sellers 2004:274). Akers and Sellers (2004) report that the final model by Elliott et al. (1985) is more a variation on social learning theory than a variation on social bonding theory and Hirschi argues that it is not theoretical integration at all because if you do away with the "natural motivation toward crime" assumption it is no longer a control theory.

We must also realize that these three approaches to integration "can be applied equally well to micro-level, macro-level, and cross-level integration, thereby yielding a nine-cell typology defined by the principles of theoretical integration and the levels of analysis" (Liska et al. 1989:5). The micro-level, end-to-end approach will be utilized in this research due to the fact that, in terms of causal order, the extent to which a person learns self-control normally comes before a person experiences strain.

"Although there has been much integrative activity and a positive orientation toward theoretical integration in criminology, there remains controversy and skepticism about the value of building theory by melding together different explanations of crime and delinquency" (Akers and Sellers

2004:287). Many attempts at integration have been made as you can see from the examples above. However, many criticisms exist concerning these early efforts and there are sound arguments against theoretical integration all together. According to Agnew (2005), early efforts at theoretical integration either suffer the problem of too much complexity or they may overlook key causes of crime because of the focus on a central causal variable. Also, theories such as Colvin's suffer from being too abstract and, therefore, less useful as well (Agnew 2005).

It has also been argued that the field of criminology should not evaluate interaction effects because theories are typically designed to exist in opposition to one another. According to Travis Hirschi (1989), integrating theories that originate with very different assumptions about human nature is unacceptable. He concludes that "the integrated theory response to the crisis in oppositional theory was a mistake, and that we should look elsewhere for valuable and potentially valuable developments in crime theory" (Hirschi 1989:43). He also points out that some integrated theories are merely oppositional theories in disguise. They are theories that pretend to be open-minded but are actually taking sides in theoretical disputes. Hirschi is very critical of theoretical approaches such as that by Elliott et al. (1985). He says that these types of integration are not integration at all but are instead simply a rejection of the assumptions of social bonding theory in favor of strain and learning theories (Akers and Sellers 2004). Understandably, Hirschi also protests integration efforts such as Akers "conceptual absorption" because it is typically social bonding concepts that are absorbed in this type of an approach (Akers and Sellers 2004).

How do integrationists get around these compelling arguments by Travis Hirschi? Bernard and Snipes (1996) argue that "Hirschi's opposition to integration is based on his characterization of theories as falling into three main categories: control, strain, and cultural deviance" (Akers and Sellers 2004:269). In Hirschi's opinion these are theories which are incompatible and rest upon irreconcilable assumptions. Bernard and Snipes (1996) maintain that Hirschi reached this conclusion because he has "misinterpreted and distorted both strain and cultural deviance theory" (Akers and Sellers 2004:269). They maintain that when strain and cultural deviance theories are properly interpreted, they can be integrated with social bonding theory and are completely compatible with social bond variables (Akers and Sellers 2004).

Thornberry advocates a solution which falls between that of Travis Hirschi and Bernard and Snipes. He says that theoretical elaboration is an appropriate strategy for theory building and that this elaboration falls somewhere between theoretical opposition and theoretical integration (Liska et al. 1989). Theory elaboration would mean beginning with a particular theory and extends it as far as possible in order to build a more comprehensive model (Akers and Sellers 2004).

Robert Agnew (2005) has recently published work challenging Hirschi's beliefs about integration. Agnew asserts that interaction effects are a necessary component in an evaluation of crime behavior because any good, general theory must explain why some individuals commit acts of crime under some circumstances and why some individuals do not under the same set of circumstances (Agnew 2005). Agnew (2005) argues that:

> Crime is caused by five clusters of variables, organized into the life domains of self (irritability / low self-control), family (poor parenting practices, no/bad marriages), school (negative school experiences, limited education), peers (peer delinquency), and work (unemployment, bad jobs). The effect of the life domains on crime often varies over the life course. The variables in each domain increase crime by reducing the constraints against crime and increasing the motivations for crime. Each life domain affects the other domains, although some effects are stronger than others and effect sizes often change over the life course … and each domain has both a direct effect on crime and an indirect effect through the other domains (109-110).

The factors in each life domain are predicted to increase the likelihood of engaging in crime but they do not cause everyone to engage in crime. Why? According to Agnew (2005), the effect of each life domain is influenced or conditioned by the person's standing on the other life domains. They interact with one another. For example, "poor parenting is more likely to lead to crime among irritable individuals, those low in self-control, and those in aversive social environments" (Agnew 2005:110-111). Agnew takes this argument one step further and says that the life domains not only interact in their effect on crime but also in their effect on one another. "For example, the effect of irritability/low self-control on school experiences depends on or is conditioned by parenting practices" (Agnew 2005:111). According to Agnew (2005) we cannot have a general theory of crime without taking these interactions into consideration. For example, strain theorists argue that strain is more likely to result in criminal behavior "when individuals have poor coping skills, are low in conventional

social support, are low in social and self-control, and associate with delinquent peers" (Agnew 2005:114).

From an examination of prior attempts at integration, we learn that if we are going to attempt integration, we must stay away from theories which become so complex they are incoherent, which become too abstract in nature, and which do not address fundamental differences in core assumptions between theories. Any integration attempt must also acknowledge the arguments for and against integration in the first place. Additionally, a clear path to how the integration is going to take place must be fully researched and discussed before proceeding with the integrative attempt in order to avoid the "kitchen sink" type of integration that can become unclear and too complex. The examples of integration discussed above are only a few of many, indicating desire in the field for entertaining Agnew's approach toward development of a general theory. Clearly, enough support exists to encourage researchers to continue to design integration efforts.

APPENDIX II. TABLES

Table 1. Descriptive statistics for *Deviance* items (N=502)

Items Numerical Score Associated with Response Category	Almost Always 4	Often 3	Sometimes 2	Rarely 1	Never 0	Missing	Mean*	s.d.	Factor Loadings
1. Destroyed property that did not belong to you	1	1	19	123	356	2	.3361	.578	.581
2. Stolen something worth $5 or less	0	6	16	122	355	3	.3450	.600	.601
3. Stolen something worth more than $5	0	1	15	52	430	4	.1712	.461	.559
4. Hurt someone badly enough that they needed bandages or a doctor	0	1	10	42	447	2	.1302	.406	.398
5. Cheated in school to get a better grade	1	13	55	165	264	4	.6391	.793	.467
6. Engaged in sexual relations with someone you did not consider to be your boyfriend/girlfriend	4	23	64	96	312	3	.6195	.928	.587
7. Gambled illegally	1	15	31	74	379	2	.3701	.748	.462
8. Used marijuana	14	36	34	80	335	3	.6256	1.066	.714
9. Used other illegal drugs	2	7	15	27	447	4	.1732	.578	.590
10. Driven without a seatbelt	24	62	84	165	163	4	1.2355	1.168	.512
11. Exceeded the speed limit by 15mph or more.	28	90	152	163	66	4	1.7017	1.080	.461
12. Sold drugs	0	2	8	18	472	2	.0802	.340	.512
13. Driven a car or motorcycle after drinking more than one drink	2	30	62	150	255	3	.7458	.919	.732
14. Smoked/used tobacco	34	43	66	93	261	5	1.07	1.497	.643
15. Drank alcohol	45	154	118	98	83	4	2.02	1.384	.691

* Missing cases have been recoded to the mean.

Table 2. Eigenvalues for *Deviance* factor numbers (N=502)

Factor Numbers	Eigenvalues
1	4.968
2	1.622
3	1.335
4	1.160
5	.963
6	.750
7	.697
8	.633
9	.567
10	.555
11	.496
12	.399
13	.311
14	.278
15	.267

Table 3. Univariate statistics for *Aspiration, Expectation, Unfairness*, and *Outcome* items. (N=502)

Items Numerical Score Associated with Response Category	Very Important 4	Important 3	Somewhat Important 2	Not Very Important 1	No Goals in This Area	Missing	Mean*	s.d.
Aspirations								
Making good grades in college (v025a)	317	161	19	3	0	2	3.61	.69
Making the amount of money I deserve (v025e)	322	120	45	12	1	2	3.52	.84
Looking the way I want to look (v025f)	218	185	73	20	4	2	3.22	.93
Having the social life that I want (v025g)	230	170	79	15	6	2	3.24	.93
Items Numerical Score Associated with Response Category	Very Successful 4	Successful 3	Somewhat Successful 2	Not Very Successful 1	No Goals in This Area	Missing	Mean*	s.d.
Expectations								
Making good grades in college (v026a)	127	270	99	5	0	1	3.05	.75
Making the amount of money I deserve (v026e)	143	240	104	10	2	2	3.07	.89
Looking the way I want to look (v026f)	149	213	124	8	7	1	3.00	.86
Having the social life that I want (v026g)	144	234	104	9	10	1	3.01	.85

* Missing cases for each item have been recoded. Please see text for a full explanation. Means displayed here reflect the mean after recoding. The same is true for those who responded that they had "no goals in that area"

Table 3 continued. Univariate statistics for *Aspiration, Expectation, Unfairness*, and *Outcome* items. (N=502)

Items Numerical Score Associated with Response Category	Very Successful 4	Successful 3	Somewhat Successful 2	Not Very Successful 1	No Goals in This Area	Missing	Mean*	s.d.
Outcomes								
Making good grades in college (v028a)	121	199	160	21	0	1	2.85	.88
Making the amount of money I deserve (v028e)	82	149	182	77	11	1	2.46	1.00
Looking the way I want to look (v028f)	104	212	146	33	6	1	2.77	.91
Having the social life that I want (v028g)	146	212	114	20	9	1	2.96	.91
Items **Numerical Score Associated with Response Category**	**Not Very Fair** 4	**Somewhat Fair** 3	**Fair** 2	**Very Fair** 1	**No Goals in This Area**	**Missing**	**Mean***	**s.d.**
Unfairness								
Making good grades in college (v027a)	4	63	200	234	0	1	1.67	.72
Making the amount of money I deserve (v027e)	30	153	207	110	0	2	2.21	.85
Looking the way I want to look (v027f)	19	86	214	174	8	1	1.88	.82
Having the social life that I want (v027g)	11	78	230	174	8	1	1.84	.76

* Missing cases for each item have been recoded. Please see text for a full explanation. Means displayed here reflect the mean after recoding. The same is true for those who responded that they had "no goals in that area"

Table 4. Univariate statistics for *Loss of Positively Valued Stimuli* and
Presentation of Negatively Valued Stimuli (*Stress*) (N=502)

Items Numerical Score Associated with Response Category	Not at all Bothered or Did Not Occur 1	Did not Bother me very much 2	Somewhat Bothered me 3	Bothered me quite a lot 4	Missing*	Mean	s.d.
1. Loss of family member through death	140	63	137	162	0	2.64	1.20
2. Loss of Friend(s) through death	278	27	78	119	0	2.08	1.29
3. Parents divorced	374	30	49	49	0	1.55	1.02
4. Family members moved away	341	52	72	36	1	1.61	0.98
5. I was physically abused	470	6	14	10	2	1.13	0.54
6. I was sexually abused	470	1	12	19	0	1.16	0.64
7. I moved away from friends or family	255	64	109	74	0	2.00	1.15
8. Close friend(s) moved away	215	58	147	79	3	2.18	1.15
9. My parents were very strict	241	113	101	47	0	1.91	1.02
10. I was not allowed to express my opinions at home	399	28	41	33	1	1.42	0.90
11. I was not allowed to go out with some of my friends	330	47	84	41	0	1.67	1.02
12. Crime and criminal behavior were a common occurrence in my neighborhood	448	24	24	6	0	1.18	0.56

* Missing cases for each item were recoded to 1.

Table 5. Descriptive statistics for *Self-Control* items (N=502)

Items and Numerical Scores Associated with Response Category	Strongly Disagree (4)	Disagree (3)	Agree (2)	Strongly Agree (1)	Missing*	Mean	s.d.	Factor Loadings
Impulsivity								
1. I often act on the spur of the moment without stopping to think.	58	211	197	34	2	2.5860	.7822	.442
2. I don't devote much thought and effort to preparing for the future.	176	241	72	13	0	3.1554	.7580	.620
3. I often do whatever brings me pleasure here and now.	121	264	105	12	0	2.9841	.7394	.656
4. I'm more concerned with what happens to me in the short run than in the long run.	140	296	60	5	1	3.1397	.6484	.636
Simple tasks								
5. I frequently try to avoid projects that I know will be difficult.	74	269	145	13	1	2.8064	.7102	.564
6. When things get complicated, I tend to quit or withdraw.	132	299	61	10	0	3.1016	.6743	.593
7. The things in life that are easiest to do bring me the most pleasure.	69	297	117	16	3	2.8397	.6901	.469
8. I dislike really hard tasks that stretch my abilities to the limit.	94	312	82	13	1	2.9721	.6747	.645
Risk seeking								
9. I like to test myself every now and then by doing something a little risky.	16	124	299	63	0	2.1853	.6831	.709
10. Sometimes I will take a risk just for the fun of it.	39	135	274	54	0	2.3167	.7669	.780
11. I sometimes find it exciting to do things for which I might get in trouble.	103	198	173	27	1	2.7525	.8406	.591
12. Excitement and adventure are more important to me than security.	107	297	79	16	3	2.9920	.7085	.572

* Missing cases have been recoded to the mean.

Table 5 continued. Descriptive statistics for *Self-Control* items (N=502)

Items and Numerical Scores Associated with Response Category	Strongly Disagree (4)	Disagree (3)	Agree (2)	Strongly Agree (1)	Missing*	Mean	s.d.	Factor Loadings
Physical activities								
13. If I had a choice, I would almost always rather do something physical than mental.	38	247	159	57	1	2.5309	.7934	.601
14. I almost always feel better when I am on the move than when I am sitting and thinking.	25	183	221	71	2	2.3240	.7773	.684
15. I like to get out and do things more than I like to read or contemplate ideas.	20	125	235	119	3	2.0922	.8013	.659
16. I seem to have more energy and a greater need for activity than most other people my age.	34	259	149	58	2	2.5380	.7860	.550
Self-centeredness								
17. I try to look out for myself first, even if it means making things difficult for other people.	103	298	85	14	2	2.9800	.6990	.463
18. I'm not very sympathetic to other people when they are having problems.	219	223	42	15	3	3.2886	.7467	.618
19. If things upset people, it's their problem, not mine.	184	258	51	5	4	3.2390	.6722	.662
20. I will try to get the things I want even when I know it's causing problems for other people.	183	268	39	9	3	3.2465	.6739	.703
Temper								
21. I lose my temper pretty easily.	143	212	108	36	3	2.9259	.8875	.649
22. Often when I am angry at people I feel more like hurting them than talking to them about why I am angry.	190	205	86	19	2	3.1280	.8294	.660
23. When I'm angry, other people better stay away from me.	139	245	96	21	1	3.0020	.7988	.651
24. When I have a serious disagreement with someone, it's usually hard for me to talk calmly about it without getting upset.	86	207	165	43	1	2.6707	.8587	.633

* Missing cases have been recoded to the mean.

Table 6. Eigenvalues for *Self-Control*
factor numbers (N=502)

Factor Numbers	Eigenvalues
1	5.739
2	2.807
3	1.966
4	1.689
5	1.568
6	1.042
7	.907
8	.755
9	.682
10	.666
11	.623
12	.587
13	.543
14	.507
15	.496
16	.479
17	.464
18	.446
19	.390
20	.384
21	.364
22	.327
23	.321
24	.249

Table 7. Bivariate correlations among control variables and original composite variables, N=502. (one-tailed significance test in parentheses)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1. Female	1.000								
2. Age (Truncated version)	-.140 (.002)	1.000							
3. Disadvantaged Minorities	.034 (.453)	.095 (.032)	1.000						
4. Parents' College	-.007 (.875)	-.093 (.038)	-.199 (.000)	1.000					
5. Single Parent	-.112 (.012)	.116 (.009)	.183 (.000)	-.102 (.022)	1.000				
6. Goal Blockage	.087 (.052)	-.064 (.150)	.132 (.003)	-.103 (.021)	.055 (.215)	1.000			
7. Stress	.111 (.014)	.069 (.127)	.123 (.006)	-.053 (.236)	.140 (.002)	.108 (.016)	1.000		
8. Self-Control	.242 (.000)	.004 (.923)	.028 (.527)	-.049 (.271)	-.038 (.398)	-.041 (.361)	-.150 (.001)	1.000	
9. Deviance	-.353 (.000)	.169 (.000)	-.006 (.897)	-.018 (.696)	.044 (.330)	.053 (.237)	.120 (.008)	-.445 (.000)	1.000

Table 8. Regression results of *Deviance* on control variables, *Stress, Goal Blockage*, and *Self-Control*, N=502 (two-tailed tests)

Variable	Equation 1			Equation 2			Equation 3		
	b	Beta	p	b	Beta	p	b	Beta	p
Female	-5.79	-0.336	0.000***	-4.557	-0.265	0.000***	-4.586	-0.265	0.000***
Age (truncated)	0.754	0.123	0.004**	0.841	0.136	0.001**	0.802	0.130	0.001***
Disadvantaged Minority	-.165	-0.007	0.874	-0.442	-0.056	0.153	-0.551	-0.023	0.562
Parents' College	-0.187	-0.011	0.803	-0.284	-0.022	0.571	-0.269	-0.015	0.696
Single Parent	-0.179	-0.008	0.851	-0.709	-0.034	0.394	-0.594	-0.027	0.498
Stress				0.134	0.085	0.032*	0.155	0.095	0.020*
Goal Blockage				0.387	0.069	0.078	0.358	0.059	0.128
Self-Control				-0.275	-0.372	0.000***	-0.285	-0.386	0.000***
Stress and Self-Control							0.007	0.066	0.093
Goal Blockage and Self-Control							-0.039	-0.070	0.069
Constant	-11.309			-13.504			-12.691		
R-square	0.139			0.297			0.305		

* Statistically significant at the p=.05 level
** Statistically significant at the p=.01 level
*** Statistically significant at the p=.001 level

Table 9. Regression results of *Deviance* on control variables, *Stress, Self-Control, Grades, Money, Looks*, and *Social Life*, N=502 (two-tailed tests)

	Equation 1			Equation 2			Equation 3		
Variable	**b**	**Beta**	**p**	**b**	**Beta**	**p**	**b**	**Beta**	**p**
Female	-4.478	-0.259	0.000***	-4.503	-0.260	0.000***	-4.622	-0.267	0.000***
Age (truncated)	0.821	0.133	0.001***	0.822	0.133	0.001***	0.844	0.137	0.000***
Disadvantaged Minority	-0.326	-0.014	0.733	-0.263	-0.011	0.782	-0.596	-0.025	0.533
Parents' College	-0.350	-0.020	0.612	-0.346	-0.020	0.617	-0.311	-0.018	0.651
Single Parent	-0.618	-0.028	0.483	-0.678	-0.031	0.441	-0.767	-0.035	0.381
Stress	0.137	0.084	0.036*	0.141	0.086	0.031*	0.135	0.083	0.038*
Self-Control	-0.279	-0.378	0.000***	-0.276	-0.373	0.000***	-0.277	-0.375	0.000***
Grades	0.193	0.032	0.406						
Money				0.145	0.025	0.516			
Looks							0.570	0.093	0.017*
Social Life									
Constant	-13.135			-13.157			-13.476		
R-square	.294			.293			.301		

* Statistically significant at the p=.05 level
** Statistically significant at the p=.01 level
*** Statistically significant at the p=.001 level

Table 9 continued. Regression results of *Deviance* on control variables, *Stress, Self-Control, Grades, Money, Looks*, and *Social Life*, N=502 (two-tailed tests)

	Equation 4			Equation 5		
Variable	b	Beta	p	b	Beta	p
Female	-4.503	-0.260	0.000***	-4.611	-0.266	0.000***
Age (truncated)	0.823	0.133	0.001***	0.840	0.136	0.001***
Disadvantaged Minority	-0.297	-0.012	0.755	-0.650	-0.027	0.499
Parents' College	-0.351	-0.020	0.611	-0.328	-0.019	0.635
Single Parent	-0.716	-0.032	0.417	-0.711	-0.032	0.421
Stress	0.140	0.086	0.031*	0.133	0.081	0.042*
Self-Control	-0.277	-0.374	0.000***	-0.280	-0.379	0.000***
Grades				0.092	0.015	0.708
Money				-0.078	-0.013	0.755
Looks				0.669	0.109	0.026*
Social Life	0.189	0.031	0.416	-0.158	-0.026	0.573
Constant	-13.154			-13.397		
R-Square	.294			.302		

* Statistically significant at the p=.05 level
** Statistically significant at the p=.01 level
*** Statistically significant at the p=.001 level

Table 10. Regression results of *Deviance* on interaction terms for *Grades, Money, Looks* and *Social Life*, N=502 (two-tailed tests)

	Equation 1			Equation 2		
Variable	**b**	**Beta**	**p**	**b**	**Beta**	**p**
Female	-4.656	-0.269	0.000***	-4.581	-0.265	0.000***
Age (truncated)	0.845	0.137	0.001***	0.828	0.134	0.001***
Disadvantaged Minority	-0.701	-0.029	0.466	-0.687	-0.029	0.476
Parents' College	-0.308	-0.018	0.654	-.323	-0.018	0.640
Single Parent	-0.720	-0.032	0.414	-0.635	-0.029	0.474
Stress	0.131	0.080	0.044*	0.135	0.083	0.039*
Self-Control	-0.286	-0.388	0.000***	-0.283	-0.383	0.000***
Grades	0.071	0.012	0.770	0.093	0.015	0.704
Money	-0.070	-0.012	0.778	-0.051	-0.009	0.840
Looks	0.623	0.102	0.038*	0.645	0.105	0.032*
Social Life	-0.118	-0.020	0.674	-0.161	-0.027	0.566
Grades X Self-Control	-0.033	-0.061	0.117			
Money X Self-Control				-0.018	-0.039	0.317
Looks X Self-Control						
Social Life X Self-Control						
Constant	-13.433			-13.227		
R-Square	.305			.303		

 * Statistically significant at the p=.001 level
 ** Statistically significant at the p=.01 level
 *** Statistically significant at the p=.05 level

Table 10 continued. Regression results of *Deviance* on interaction terms for *Grades, Money, Looks,* and *Social Life*, N=502 (two-tailed tests)

Variable	Equation 3			Equation 4		
	b	Beta	p	b	Beta	p
Female	-4.583	-0.265	0.000***	-4.607	-0.266	0.000***
Age (truncated)	0.833	0.135	0.001***	0.843	0.136	0.001***
Disadvantaged Minority	-0.687	-0.029	0.475	-0.648	-0.027	0.501
Parents' College	-0.384	-0.022	0.578	-.323	-0.018	0.641
Single Parent	-0.677	-0.030	0.443	-0.716	-0.032	0.418
Stress	0.129	0.079	0.048*	0.133	0.082	0.041*
Self-Control	-0.281	-0.380	0.000***	-0.280	-0.379	0.000***
Grades	0.074	0.012	0.762	0.090	0.015	0.714
Money	-0.081	-0.014	0.744	-0.078	-0.013	0.755
Looks	0.633	0.103	0.035*	0.671	0.109	0.026*
Social Life	-0.153	-0.025	0.585	-0.158	-0.026	0.574
Grades X Self-Control						
Money X Self-Control						
Looks X Self-Control	-0.031	-0.052	0.174			
Social Life X Self-Control				0.003	0.006	0.881
Constant	-13.239			-13.449		
R-Square	.304			.302		

 * Statistically significant at the p=.001 level
 ** Statistically significant at the p=.01 level
 *** Statistically significant at the p=.05 level

Table 11. Regression results of *Deviance* on *Aspirations-Expectations, Expectations-Outcomes*, and *Unfair*, N=502 (two-tailed tests)

	Equation 1			Equation 2		
Variable	**b**	**Beta**	**p**	**b**	**Beta**	**p**
Female	-4.516	-0.261	0.000***	-4.465	-0.258	0.000***
Age (truncated)	0.817	0.132	0.001***	0.811	0.131	0.001***
Disadvantaged Minority	-0.282	-0.012	0.767	-0.330	-0.014	0.729
Parents' College	-0.348	-0.020	0.615	-0.332	-0.019	0.630
Single Parent	-0.652	-0.029	0.459	-0.692	-0.031	0.432
Stress	0.139	0.085	0.034*	0.137	-0.084	0.036*
Self-Control	-0.276	-0.374	0.000***	-0.275	-0.373	0.000***
Aspirations - Expectations	0.048	0.016	0.680			
Expectations - Outcomes				0.130	0.041	0.295
Unfair						
Constant	-13.050			-12.960		
R-Square	.293			.294		

* Statistically significant at the p=.001 level
** Statistically significant at the p=.01 level
*** Statistically significant at the p=.05 level

Table 11 continued. Regression results of *Deviance* on *Aspirations-Expectations, Expectations-Outcomes*, and *Unfair*, N=502 (two-tailed tests)

Variable	Equation 3			Equation 4		
	b	Beta	p	b	Beta	p
Female	-4.459	-0.258	0.000***	-4.545	-0.263	0.000***
Age (truncated)	0.826	0.134	0.001***	0.839	0.136	0.001***
Disadvantaged Minority	-0.268	-0.011	0.778	-0.423	-0.018	0.659
Parents' College	-0.415	-0.024	0.548	-0.286	-0.016	0.681
Single Parent	-0.695	-0.031	0.430	-0.714	-0.032	0.418
Stress	0.146	0.090	0.025*	0.134	-0.082	0.042*
Self-Control	-0.282	-0.381	0.000***	-0.275	-0.373	0.000***
Aspirations - Expectations				0.120	0.041	0.338
Expectations - Outcomes				0.157	0.049	0.219
Unfair	0.095	0.034	0.386	0.123	0.044	0.281
Constant	-13.205			-13.469		
R-Square	.294			.297		

   * Statistically significant at the p=.001 level
   ** Statistically significant at the p=.01 level
   *** Statistically significant at the p=.05 level

Table 12. Regression results of *Deviance* on *Aspirations-Expectations and Self-Control*, *Expectations-Outcomes and Self-Control*, and *Unfair and Self-Control*, N=502 (two-tailed tests)

Variable	Equation 1			Equation 2			Equation 3		
	b	Beta	p	b	Beta	p	B	Beta	p
Female	-4.568	-0.264	0.000***	-4.577	-0.264	0.000***	-4.550	-0.263	0.000***
Age (truncated)	0.848	0.137	0.001***	0.843	0.136	0.001***	0.836	0.135	0.001***
Disadvantaged Minority	-0.346	-0.014	0.719	-0.398	-0.017	0.675	-0.422	-0.018	0.660
Parents' College	-0.284	-0.016	0.683	-0.410	-0.023	0.554	-0.283	-0.016	0.685
Single Parent	-0.789	-0.036	0.373	-0.810	-0.036	0.355	-0.705	-0.032	0.424
Stress	0.137	0.084	0.038*	0.136	-0.084	0.037*	0.134	-0.082	0.042*
Self-Control	-0.272	-0.368	0.000***	-0.283	-0.384	0.000***	-0.275	-0.372	0.000***
Aspirations - Expectations	0.118	0.040	0.348	0.112	0.038	0.369	0.116	0.039	0.356
Expectations - Outcomes	0.157	0.049	0.220	0.113	0.035	0.376	0.159	0.050	0.214
Unfair	0.132	0.047	0.249	0.142	0.050	0.212	0.124	0.044	0.278
Asp-Exp X Self-Control	0.010	0.037	0.336						
Exp-Out X Self-Control				-0.029	-0.106	0.006**			
Unfair X Self-Control							-0.004	-0.017	0.663
Constant	-13.593			-13.532			-13.386		
R-Square	.298			.308			.297		

* Statistically significant at the p=.001 level
** Statistically significant at the p=.01 level
*** Statistically significant at the p=.05 level

Table 13. Regression results of *Deviance* on *Loss of Positive Stimuli, Presentation of Negative Stimuli*, and their interactions with *Self-Control*, N=502 (two-tailed tests)

	Equation 1			Equation 2			Equation 3		
Variable	**b**	**Beta**	**p**	**b**	**Beta**	**p**	**B**	**Beta**	**p**
Female	-4.311	-0.250	0.000***	-4.394	-0.255	0.000***	-4.446	-0.258	0.000***
Age (truncated)	0.831	0.135	0.001***	0.801	0.131	0.001***	0.799	0.130	0.001***
Disadvantaged Minority	-0.201	-0.008	0.832	-0.206	-0.009	0.827	-0.251	-0.010	0.791
Parents' College	-0.566	-0.032	0.409	-0.485	-0.028	0.478	-0.497	-0.028	0.467
Single Parent	-0.524	-0.024	0.547	-0.753	-0.034	0.390	-0.756	-0.034	0.388
Self-Control	-0.291	-0.394	0.000***	-0.277	-0.375	0.000***	-0.278	-0.376	0.000***
Expectations - Outcomes	0.082	0.026	.503	0.079	0.025	0.519	0.074	0.023	0.544
Exp-Out X Self-Control	-0.030	-0.108	0.005**	-0.028	-0.100	0.009**	-0.028	-0.102	0.008**
Loss of Positive Stimuli	0.129	0.042	0.278				0.075	0.024	0.540
Presentation of Negative Stimuli				0.191	0.085	0.033*	0.178	0.079	0.053*
Loss of Positive X Self-Control									
Presentation of Negative X Self-Control									
Constant	-13.484			-12.847			-12.754		
R-Square	.295			.300			.301		

* Statistically significant at the p=.001 level
** Statistically significant at the p=.01 level
*** Statistically significant at the p=.05 level

Table 13 continued. Regression results of *Deviance* on *Aspirations-Expectations and Self-Control, Expectations-Outcomes and Self-Control*, and *Unfair and Self-Control*, N=502 (two-tailed tests)

	Equation 4			Equation 5			Equation 6		
Variable	**b**	**Beta**	**p**	**b**	**Beta**	**p**	**B**	**Beta**	**p**
Female	-4.305	-0.250	0.000***	-4.415	-0.256	0.000***	-4.465	-0.259	0.000***
Age (truncated)	0.832	0.135	0.001***	0.783	0.127	0.001***	0.787	0.128	0.001***
Disadvantaged Minority	-0.292	-0.012	0.758	-0.194	-0.008	0.837	-0.342	-0.014	0.717
Parents' College	-0.493	-0.028	0.471	-0.459	-0.026	0.502	-0.407	-0.023	0.551
Single Parent	-0.484	-0.022	0.577	-0.742	-0.033	0.396	-0.734	-0.033	0.400
Self-Control	-0.294	-0.399	0.000***	-0.280	-0.379	0.000***	-0.281	-0.380	0.000***
Expectations - Outcomes	0.062	0.020	0.612	0.078	0.025	0.524	0.053	0.017	0.664
Exp-Out X Self-Control	-0.034	-0.122	0.002**	-0.029	-0.104	0.007**	-0.032	-0.118	0.003**
Loss of Positive Stimuli	0.141	0.046	0.234				0.084	0.027	0.491
Presentation of Negative Stimuli				0.221	0.098	0.017*	0.209	0.093	0.027*
Loss of Positive X Self-Control	0.019	0.077	0.046*				0.019	0.077	0.066
Presentation of Negative X Self-Control				0.007	0.052	0.191	0.003	0.024	0.575
Constant	-13.544			-12.424			-12.546		
R-Square	.301			.303			.308		

 * Statistically significant at the p=.001 level
 ** Statistically significant at the p=.01 level
 *** Statistically significant at the p=.05 level