

TESTING DETERRENCE THEORY WITH OFFENDERS: ASSESSING THE EFFECTS OF
PERSONAL AND VICARIOUS EXPERIENCE WITH PUNISHMENT AND PUNISHMENT
AVOIDANCE ON INTENTIONS TO REOFFEND

by

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ABSTRACT

Stafford and Warr (1993) reconceptualized general and specific deterrence into a single theory in which individuals' propensities to engage in criminal behavior are based on some combination of personal experiences with being punished and avoiding punishment and vicarious (or indirect) experiences with being punished and avoiding punishment. The researchers make a substantial contribution to the deterrence literature by accounting for the effect of punishment avoidance when assessing deterrence theory. Despite the theoretical appeal of this restatement, few studies have tested its empirical merit. The current study tests the applicability of Stafford and Warr's model but also addresses several key limitations that still exist in the deterrence literature.

The present study was the first of its kind to directly test Stafford and Warr's (1993) model, blending specific and general deterrence, on an offending population. The majority of perceptual deterrence research examines largely pro-social groups. Evidence suggests that offenders may have unique decision-making processes and may be very different from those typically studied in deterrence research. Identifying the relevant deterrents among non-conventional or offending populations has significant policy implications.

Additionally, in order to understand the decision-making process of criminals, this study incorporated alternative sanction forms from a rational choice perspective into the deterrence framework. This is a particularly salient point because non-legal costs may be more influential in criminal decision-making than formal sanctions. By examining the deterrent effects of several other factors (besides the traditional variables studied in deterrence models) among a non-conventional population, findings may suggest methods for designing more effective punishments.

Therefore, the present study conducted survey research of high-criminality among an adult sample. This dissertation recruited 326 work release inmates from Orange County, Florida, and asked them to complete a written questionnaire. Results from the bivariate analyses revealed some support for the deterrence doctrine and the rational choice perspective. However, more rigorous tests of these predictions revealed no support for deterrence theory. Even though this study concluded that deterrence alone does not adequately predict future offending, the idea of choice was upheld. The results from this dissertation and from several other studies suggest the need for further analysis of the effect of extralegal sanctions on future criminal activity, especially among non-conventional populations. The current study offers suggestions for effective crime control policies and directions on how future research can clarify the inconsistencies between the theoretical predictions of deterrence theory and empirical reality.

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LIST OF ACRONYMS/ABBREVIATIONS

WRC	Orange County Work Release Center
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CHAPTER ONE: INTRODUCTION

For centuries scholars have attempted to explain and predict deviant behavior through the study of criminological theory. Although many schools of thought exist, classical criminology has had an enormous impact on the field of criminology and the legal systems of many countries, including the United States and France. The ideas of classical criminology are most notably attributed to Cesare Beccaria. In response to the cruel and arbitrary punishments that dominated the legal system through the 1700s, Enlightenment thinkers advocated fair and just treatment for all individuals. While the demonic perspective attributed crime to supernatural forces, classical theory examined behavior from a more scientific or measurable approach.

The basic ideas of classical criminology are fairly straightforward. Classical criminologists believe that individuals are rational actors who want to maximize pleasure and minimize pain. Human beings pursue their own personal interests and engage in illegal acts if the potential pleasures outweigh the possible pains. Criminal law has the ability to deter crime if the perceived threat of punishments is swift, certain, and appropriately severe. Therefore, the legal system is more effective if laws and punishments are known, and if judges apply these laws in a nondiscriminatory fashion.

Beccaria's *An Essay on Crimes and Punishment* (1764) and other works in classical criminology have made worthy contributions to the foundation of the United States legal system. The rational actors' argument of classical criminology formed the basis of our legal system. Hence the reason why we believe that it is fair and just to punish those individuals who commit illegal acts. Another element of classical theory that is part of the foundation of our legal system includes the idea that the law should be applied equally to everyone. For example, most

punishments are determined by the nature and severity of the crime committed rather than being based on the characteristics of the individual offender. Furthermore, current proposals that attempt to prevent or reduce crime through increases in punishment certainty and severity stem from classical ideas.

Although classical theory was one of the first scientific theories of crime causation, its key ideas influence contemporary versions of criminological theory even today. Numerous theories of crime causation, both old and new, borrow the classical notion that individuals are rational actors who conduct costs-benefit analysis. Consequently, those punishments that are certain and just harsh enough to make illegal behavior less beneficial are predicted to have deterrent effects.

The classical school of thought dominated criminology for nearly a century (late 1700s – late 1800s). Although it lost some favor during the positivist movement, classical theory has experienced a resurgence in the last several decades. In response to the perceived failure of the rehabilitation of offenders in the 1970s, several economists and criminologists revived and expanded the fundamental ideas of classical theory. The classical ideas of controlling crime by increasing punishment certainty and severity came to dominate contemporary crime control policies in the United States. The conservative era of the 1980s produced a number of initiatives such as the “get tough” philosophy, the War on Drugs, and the adoption of harsher penalties for violent and chronic offenders by many states (e.g., 10-20-life, “three strikes and you’re out” laws). This shift in crime control policy away from rehabilitation and towards punishment, incapacitation, and deterrence is credited with expanding correctional populations which have more than quadrupled since the 1970s (Cullen & Agnew, 2003). Thus, classical theory provides the underpinning for much of the theory and practice of contemporary criminal justice. As part of

that theoretical base deterrence remains a critical component for criminological theory and research.

The basic tenets of deterrence theory have remained essentially unchanged for more than two centuries. In effect, deterrence theory has been conceptualized as involving two separate processes which by tradition are known as general and specific deterrence (Stafford & Warr, 1993; Piquero & Paternoster, 1998). General deterrence intends to influence everyone but the single offender. The thinking here is that the punishment of a particular individual functions as an example to other potential offenders, discouraging them from committing crimes by demonstrating the negative consequences attending such behavior. Specific deterrence refers to efforts that dissuade the individual offender from disobeying the law again in the future. Under this notion of deterrence, the punishment is not delivered so as to impact anyone besides the targeted individual (Gould & Sitren, 2005). The literature assessing the effects of specific and general deterrence is substantial. Cullen and Agnew (2003) summarize this literature and conclude that support for general deterrence is mixed and support for specific deterrence is minimal. Due to the limited focus of previous research, however, it would behoove us to examine the effect of factors besides punishment certainty, severity, and celerity on punishment and crime levels. Identifying these factors is crucial to understanding the current salience of deterrence theory, and to developing more effective punishments and crime control policies.

Recently, Stafford and Warr (1993) made a significant contribution to the deterrence literature. Even though the basic conception of general and specific deterrence is commonly accepted, Stafford and Warr's (1993) piece has caused many criminologists to rethink the sharp distinction between general and specific deterrence. Stafford and Warr (1993) note several limitations with the traditional notion of deterrence. First is the assumption that general

deterrence and specific deterrence affect different types of people (the general public versus punished offenders). Both specific and general deterrence are part of the deterrence process. However, general deterrence is focused on an individual's indirect experience with punishment while specific deterrence is focused on an individual's direct experience with punishment. To address this significant limitation, Stafford and Warr (1993) proposed a reconceptualization of deterrence in which general and specific processes are integrated. They claimed that all persons could be influenced by experiencing punishment directly (specific deterrence) as well as by experiencing punishment indirectly when other people are punished (general deterrence). The second limitation noted by Stafford and Warr is that traditional notions of deterrence focus only on the effects of being punished. The potential effects of avoiding punishment for an illegal act are ignored. Stafford and Warr claim that experiences with avoiding punishment may do more to encourage criminal behavior than punishment does to discourage crime. Therefore, they introduce the concept of punishment avoidance into the deterrence framework. A third shortcoming of the basic conception of separating general from specific deterrence is the assumption that an offender's direct experience with punishment (i.e., specific deterrence) is the only important variable when predicting future behavior. However, offenders may not always experience punishment and often commit more than one kind of crime. Surely, most individuals, including offenders, will have some combination of indirect and direct experiences with legal punishment and experiences with avoiding punishment.

To address these limitations, Stafford and Warr (1993, p. 127) redefine general deterrence as the “deterrent effect of indirect experience with punishment and punishment avoidance” and specific deterrence as the “deterrent effect of direct experience with punishment and punishment avoidance.” An individual's direct and indirect experiences with punishment

will increase his or her perception of the certainty, and perhaps severity, of punishment. In turn, these experiences will decrease the likelihood of future offending. Conversely, direct and indirect experiences with avoiding punishment will increase the future tendency to offend by reducing the perceived certainty of punishment.

Stafford and Warr (1993) make a significant contribution to the deterrence literature. First, reframing these concepts allows for general and specific deterrence to pertain to any individual in any population. Second, Stafford and Warr (1993) introduce the concept of punishment avoidance, which they argue might be more influential to the deterrence process than punishment itself. Very few studies have tested Stafford and Warr's (1993) reconceptualization of deterrence. Preliminary analyses reveal support for the notion that personal and vicarious experiences with punishment and punishment avoidance do influence future offending. However, these studies also raised some issues and suggest the need to move beyond deterrence principles to predict and explain criminal behavior.

The current study seeks to test the core predictions offered by Stafford and Warr (1993). This study also addresses several limitations that still exist in the deterrence literature. First, deterrence researchers have typically focused on conventional populations. Deterrence theory has been tested in only limited ways with experienced offenders. Several criminologists argue that offenders may be different than those typically studied in deterrence research (Piliavian, Gartner, Thornton, & Matsueda, 1986; Decker, Wright, & Logie, 1993). Evidence suggests that offenders are more impulsive, risk seeking, and may employ unique decision making processes (Gottfredson & Hirschi, 1990; Pogarsky, Kim, & Paternoster, 2005). Therefore, the present study examines the deterrent effects of personal and vicarious experiences with punishment and punishment avoidance among a group of offenders. According to several criminologists, the

salient deterrents may be very different for offending populations (Piliavin et al., 1986; Decker et al., 1993). As such, identifying the relevant deterrents has significant policy implications.

Because the majority of perceptual deterrence research has studied conventional populations, the range of offenses considered has been very limited. Piliavin et al. (1986) note the great importance of determining the explanatory power of a deterrence model by expanding the range of offenses considered. This study uses a sample of offenders and is therefore able to expand the range of offending behaviors to include more serious criminal acts.

A third limitation in previous studies has been the lack of attention to the extralegal costs and benefits of the decision-making process. According to Paternoster (1989), perceptual deterrence researchers have rarely integrated their tests into an overall model of social control. Even though the threat of moral condemnation and informal sanctions of behaviors have been included in some analyses, the significance of these variables has not been appropriately examined. Several studies have found considerable support for examining the effect of non-legal considerations of offending decisions (Paternoster, 1989; Nagin, 1998; Nagin & Pogarsky, 2001). In fact, the deterrent effect of extralegal sanctions may be as great a deterrent as legal sanctions. These considerations are elements of a rational choice perspective, and Stafford and Warr's (1993) theory may also benefit from their addition. Therefore, this dissertation integrated several extralegal considerations into Stafford and Warr's (1993) reconceptualization.

Fourth, prior tests of Stafford and Warr's (1993) model have considered only offense-specific experiences with punishment and punishment avoidance. Research shows that most offenders do not "specialize", committing only one type of offense (Gottfredson & Hirschi, 1990; Moffitt, 1993). Therefore, offenders may be influenced by their experiences with being punished

or avoiding being punished for crimes beyond the one specifically under consideration by a researcher.

In sum, this study contributes to the deterrence literature in several significant ways. First and foremost, this study tests Stafford and Warr's (1993) reconceptualization of general and specific deterrence. Stafford and Warr (1993) introduced several other salient variables not previously considered in the deterrence literature. Additionally, this reconceptualization has remained largely untested. Second, this study conducts survey research of high-criminality among an adult sample. Third, integrating experienced offenders in a test of deterrence theory also allows for expansion of the range of offenses to include more serious crimes. Fourth, in order to understand the decision-making process of criminals, this study incorporates alternative sanction forms into the deterrence framework. As previously mentioned, the legal system is largely theoretically dependent on the deterrence model. By examining the deterrent effects of several other factors (besides the traditional variables studied in deterrence models) among an offending population, findings may suggest methods for designing more effective punishments. Thus, this study has significant policy implications for crime control strategies. The next chapter presents a review of the literature, beginning with a brief review of the theoretical context of deterrence and a discussion of the current issues and empirical status of deterrence theory. Next, empirical tests of Stafford and Warr's (1993) reconceptualization are discussed in detail. Finally, several key limitations are identified in the existing deterrence research and a discussion of how the current study addresses those limitations is presented.

CHAPTER TWO: LITERATURE REVIEW

According to classical theory, individuals are more or less free to choose crime as a behavior. These decisions are based on rational calculations of the costs and benefits related to crime. Individuals commit crimes when they believe that the benefits outweigh the costs of an action. Deterrence theory most fully embodies the classical school of thought. Deterrence theorists claim that crime is a free-will choice, and individuals are rational actors with the main goal of maximizing pleasure and minimizing pain. Therefore, individuals will engage in crime when they believe it is in their best interest. According to this frame of thought, the best way to prevent crime is through certain, severe, and swift punishments (Einstadter & Henry, 1995; Cullen & Agnew, 2003).

This chapter begins with a brief review of the major families of theories, outlining the theoretical context of deterrence. Deterrence theory was among the earliest explicit theories of crime, originating from the ideas of Cesare Beccaria (1764) and Jeremy Bentham (1789). While many theorists and criminologists have entertained other schools of thought, the popularity and prominence of deterrence theory have persisted. Moreover, deterrence theory has never been fully rejected and has actually experienced a resurgence in the past several decades (Lilly, Cullen, & Ball, 2002). The next section addresses the current issues in deterrence theory. Several recent, major developments have influenced deterrence theory, including the emergence of rational choice theory, the expansion of the deterrence doctrine beyond legal penalties, and the integration of other criminological theories, such as self-control and social learning theories, with rational choice. Most important, Stafford and Warr (1993) integrated concepts from social learning theory into their reconceptualized theory of deterrence in which general and specific

processes are brought together. This discussion is followed by a review of the empirical status of deterrence and an analysis of the empirical tests of Stafford and Warr's reconceptualization. Finally, several key limitations are identified in existing deterrence research and a discussion of how the current study addresses those limitations ensues.

Theoretical Context of Deterrence

Throughout history, scholars have considered why certain individuals engage in criminal behavior. In response to the cruel and arbitrary punishments of the Dark Ages (e.g., whippings, hangings, torture, and mutilation), Enlightenment thinkers believed that the world could be better understood and subsequently changed through science. Classical criminology, a product of the Enlightenment, additionally asserts that individuals are free-willed and solely responsible for their actions. Classical criminology refers mainly to the ideas of Cesare Beccaria and Jeremy Bentham (Akers, 2000). Bentham's (1789) hedonistic calculus is rooted in the idea that individuals are free-willed and able to weigh the potential pleasures against the possible pains of an action. Individuals are rational actors who calculate a cost-benefit analysis with the central element being pleasure versus pain. Based on rational calculations, individuals freely choose all behavior with the choice going towards the maximization of individual pleasure. Beccaria's 1764 influential piece, *On Crimes and Punishment*, is credited with presenting most of what we call classical criminology. Beccaria believed that both the right to punish as well as other fundamental aspects of society emanate from the social contract. The purpose of punishment – which should be proportionate, legislated, prompt and certain, public, and necessary – is to act solely as a deterrent.

Both Beccaria's and Bentham's ideas inspired revolutions and the creation of completely new legal codes (Lilly et al., 2002). Classical ideas such as doing away with cruel and unusual punishment and the right to a speedy trial were included in the Constitution of the United States. Other ideas such as a fixed scale of punishment for each type of crime were integrated into the new legal codes of France in 1791, following the French Revolution (Akers, 2000). However, by the early 1800s crime was still flourishing (Rothman, 1971). The belief that criminal behavior could be explained by hedonism was losing support as the argument that aggravating and mitigating circumstances became more significant for diminished responsibility among offenders. The Enlightenment's previous view of the rational man was unable to explain all crimes. Thus, the search for the "criminal man" ensued, with an emphasis on pre-determined actions as opposed to the rationality of man; free will was no longer perceived as the origin of criminal actions. The supporters of this new way of thinking came to be known as positivists (Lilly et al., 2002).

In contrast to classical theory, positivists assert that human behavior is determined rather than chosen (Davis, 1975). Early positivist thinkers sought empirical evidence that the cause of crime was linked to certain individual attributes, with particular emphasis on the mind and the body (Lilly et al., 2002). Criminals are perceived as being fundamentally different -- biologically, psychologically, sociologically, or some combination -- from non-criminals (Matza, 1964). Between the time that Beccaria graduated from the University of Pavia in 1758 and Cesare Lombroso's graduation from the same institution a century later, there was a shift from theological explanations of humans to a biological one. It was this context of biology, evolution, and Darwinism that greatly influenced Lombroso (Wolfgang, 1973). Lombroso (1911) believed that individuals with certain physical characteristics were biologically inferior to others. He

called these persons atavists, or throwbacks to a more savage ape-like being. Lombroso identified several physical characteristics found among criminals, such as sloping foreheads, misshaped noses, excessively long arms, ears of unusual size, and receding chins, and ascribed these characteristics and criminality to lesser evolution.

Modern biocriminologists assert that criminal behavior results from complex biological and environmental interactions, rather than citing the traditional value judgment of inferiority. Additionally, biology or genetics is not necessarily the cause of crime but rather predisposes individuals to deviant behaviors. Such individuals are also influenced by environmental and social conditions (Fishbein, 1990). Current research has revealed several biological connections to criminal behavior. Fishbein (2000) notes a few of these factors to include vitamin, mineral, and chemical deficiencies in the diet, low blood sugar, diets laden with sugar and carbohydrates, attention deficit disorder, exposure to radiation, and other brain dysfunctions. Neuropsychological models of delinquency have also been developed to incorporate IQ and other aspects of mental functioning such as mental flexibility, verbal ability, and visual-motor integration (Moffitt, Lyman, & Silva, 1994).

Instead of contending that criminals are biologically inferior, psychological theories assert that criminals are mentally inferior. This form of positivism, the psychogenic school of thought, focuses on the mind rather than the body. Sigmund Freud is largely associated with psychoanalytic theories. Although Freud did not directly address the causes of crime, his general theory of human behavior is often applied as a theory of crime causation (Akers, 2000). According to Freud (1920), human behavior is motivated and purposive. In order to preserve social order, desires and behavior that are socially unacceptable become repressed into the unconscious of the mind. The effect is that stress exists between the unconscious id and the

conscious ego. While the id represents a multitude of aggressive psychological and biological urges, the ego is the mechanism that controls the individual. Freud (1920) asserts that the superego judges right from wrong and good from bad based on the behavioral requirements of a particular culture. Therefore, crime is a manifestation of the inner conflict that each individual has but fails to control (Lilly et al., 2002).

As embodied by Freud's (1920) theory of human behavior, psychoanalytic and personality theories acknowledge that personal experiences, especially those in early childhood, influence the development of personality traits, types, and overall emotional development. Deviant behavior is therefore a symptom of some underlying emotional or personality problem. Personality theories either attribute crime to personality traits such as impulsiveness, rebelliousness, hostility, aggressiveness, and thrill-seeking, or to personality types which include anti-social, psychopaths, or sociopaths. Psychopaths, sociopaths, and those with anti-social personalities are characterized as self-centered individuals who have not been properly socialized and therefore lack empathy for others and lack a sense of guilt or remorse for their misconduct (Andrews & Bonta, 1998). Yochelson and Samenow (1976) developed a theory of criminal personality in which individuals of this sort have no sense of guilt or conscience, no conception of right and wrong, and freely choose to commit crimes. Slightly different from psychopaths, individuals with a criminal personality are fearful of embarrassment, injury, and death. In sum, psychological, psychoanalytic, and personality theories emphasize that crime results from inadequate or abnormal emotional development, or deviant personality traits or types.

Most of the early criminological theories located the sources of crime within the individual, whether that was in the soul, the mind, or the body (Lilly et al., 2002). But as the United States entered the 20th century, a major theoretical shift occurred, suggesting that crime

was a social product. Many of the major sociological theories of crime – including anomie or strain theory, social disorganization theory, differential association, and control theories – have been heavily influenced by Emile Durkheim. Durkheim (1964) believed that crime is a normal, functional aspect of society. Crime is considered normal because it is found in all societies. Crime is functional because it establishes the boundaries for morality. As noted by Bohm (2001), individuals would be unaware of acceptable behavior if crime did not exist. Crime is also functional because it unites people against it, thereby creating social solidarity (Durkheim, 1964). Durkheim's ideas were cultivated during a period of social change, technological change, the rise of capitalism, the industrial revolution, and the erosion of community. Durkheim focused on the increasing, forced division of labor separating individuals into occupational specialties. For Durkheim, anomie signified a breakdown of the fundamental bonds uniting individuals into a collective social order. Anomie represented the complete collapse of social solidarity.

By the late 1930s, two major criminological traditions had been cultivated: the Chicago school of thought and Merton's strain theory (Lilly et al., 2002). The Chicago School proposed a relationship between social disorganization, detachment from conventional groups, and delinquency. According to the Chicago School, one aspect of American society, the city slums, contained certain criminogenic factors. Park and Burgess argued that the development and organization of cities is explained by social processes such as invasion, conflict, dominance, and succession. That is, cities expand and grow radially in concentric circles, and a cultural group invades an area occupied by another group and controls that area until it is succeeded by another group. These social processes weakened family ties and neighborhood controls resulting in social disorganization, the source of many social pathologies including crime. Many scholars, most notably Shaw and McKay (1972), utilized this model of human ecology in their studies of

juvenile delinquency. Through their research, Shaw and McKay were able to conclude that neighborhood disorganization was instrumental in the permission of delinquency.

Anomie or strain theory uses a systems model to describe society and attributes crime to the social structure. Merton (1938) observed a disconnect between cultural goals and the social structure. That is, the social structure restricts the ability for all individuals to achieve success through legitimate means. A strain is placed on those individuals, most likely members of the lower class, who desire the goal of success and wealth but who are unable to attain those goals through conventional avenues. As a result, some individuals experiencing strain resort to illegitimate means to achieve success. Therefore, the source of some crime or delinquency was anomie or strain.

More contemporary models of anomie or strain include Agnew's (1992) general strain theory. He argues that individuals may not be as goal oriented as Merton had originally suggested. Other situations, besides monetary success and the American dream, have the potential to create strain and encourage crime. More specifically, other sources of criminogenic strain result from the actual or anticipated loss of a positive stimulus or the actual or anticipated presentation of a negative stimulus (Agnew, 1992). In other words, people are more interested in being treated in a fair and just manner. Agnew (1992) revised Merton's paradigm of social structure and anomie towards a general strain theory of crime which examines other sources of criminogenic strain.

In further exploration of the social roots of crime, Sutherland (1939) contended that criminal behavior is learned through social interactions. Sutherland coined the term differential social disorganization claiming that social groups are arranged differently, some promoting crime and others against deviant behavior. Individuals who embraced deviant behavior did so

because of an excessive amount of definitions favorable to lawbreaking rather than definitions unfavorable to violating the law. Learning theories have been developed more broadly to encompass the concepts of differential association and Sutherland's theory (Burgess & Akers, 1966; Akers, 1985). In short, learning theories attribute criminal behavior to positive reinforcement, negative reinforcement, or imitation (Bohm, 2001).

Social bonding and control theories examine delinquency from a different perspective, examining why individuals conform. That is, they argue that crime is natural and will occur if individuals are not properly socialized. Control theories claim that individuals conform because social controls prevent them from engaging in deviant behavior. Hirschi's (1969) social bonding theory is one of the earlier control theories. According to Hirschi (1969), "delinquent acts result when an individual's bond to society is weak or broken" (p. 16). This bond consists of four main components: beliefs, involvement, commitment, and attachment. Individuals are more likely to conform when social bondings of these elements are stronger to parents, adults, school teachers, and peers. The weaker the bonds, the more likely the individual will be to engage in unlawful behavior. More recently, Hirschi collaborated with Gottfredson and moved away from his classic social bonding of control theory and towards a theory focused on one type of control – self-control (Gottfredson & Hirschi, 1990). According to this theory, people with lower levels of self-control are more likely to engage in criminal activity at all times in their lives while people with greater self-control are less likely to engage in crime. Furthermore, Gottfredson and Hirschi (1990) attribute low self-control to ineffective socialization, particularly with ineffective child rearing.

Similar to sociological theories, critical theories believe that human behavior is influenced and constrained by societal institutions and structures. However, critical theories

further assert that human beings create these institutions and thus, have the ability to change them (Bohm, 2001). Interactionist and labeling theorists shift their focus to the criminalization process, considering whether stigmatizing someone as criminal actually leads to more crime than it prevents. Such theories attempt to predict secondary deviance based on a negative social reaction experienced by first-time offenders (Becker, 1963).

While classical and positivist theories believe that society is characterized by consensus, conflict theory believes that society is primarily characterized by a struggle between competing groups. Because dominant interest groups are able to use crime and the law to control subordinate groups, crime is believed to be caused by relative powerlessness (Marx & Engels, 1992/1848; Vold, 1958). Unlike conflict theory, radical theory considers competing interest groups and the existence of classes as distinct phenomena. Radical criminologists tend to focus more on the social arrangements of society, in particular, the political and economic structures of capitalism. Crime, defined as a violation of human rights, results from the political economy that encourages individualistic competition to acquire material wealth. The more unevenly wealth is distributed in a society; the more apparent are class struggles and exploitation (Bohm, 2001). Other critical theories have redirected attention to crimes committed against the working class (British or Left Realism), the transformation of individuals and restorative justice (Peacemaking Criminology), the female perspective and experiences (Feminism), and an emphasis on the unconscious and multiple viewpoints on the law (Postmodernism and Poststructuralism) (Akers, 2000).

With the perceived failure of rehabilitation as well as the increase in crime rates during the 1970s and 1980s, attention returned to an analysis of the criminal decision-making process as the country shifted back towards conservatism. The conservatism of the 1980s formed a context

contributing to the revitalization of the classical school of thought, with a shift from viewing crime as a social problem to viewing crime as a problem of individual pathology. The rationality of individuals and the positivist approaches of crime due to biological or mental anomalies received increasing consideration (Lilly et al., 2002). Wilson and Herrnstein's (1985) *Crime and Human Nature* epitomized this return of individualistic explanations of crime. According to Wilson and Herrnstein (1985), certain constitutional factors, some of which are genetic, predispose individuals to engage in criminal behavior. These constitutional factors influence an individual's ability to evaluate future and immediate rewards and punishments. This emphasis on rewards and punishment was also supported by the classical school of criminology. As previously discussed, individual acts of crime were deterred with punishments designed to outweigh the benefits of offending. Several additional research findings received more attention during this time period as well. First was the evidence linking a large number of offenses to a small portion of individuals, thereby suggesting something wrong with those particular individuals (Wolfgang, Figlio, & Sellin, 1972). And second was the data indicating that violent criminals tended to exhibit aggression and crime at an early age, suggesting less importance on the environment and more on the physiological make-up of individuals (Loeber & Dishion, 1983).

Wilson and Herrnstein's (1985) biosocial approach was not the only revitalization that the classical school of thought experienced during this time period. The development of economic and rational choice models claimed that individuals were rational actors who choose deviant behavior when the benefits outweighed the costs. Political implications drawn from these models are largely deterrence theories. Crime may be reduced by increasing the risks of punishment or by increasing the rewards for conformity.

Based on these research findings, the conservative political context of the time supported certain policy initiatives, mainly incapacitation and deterrence. First, one major policy initiative advocated incarceration of larger numbers of individuals for longer periods of time. As suggested by rational choice theory, lengthy incarcerations will deter both lawbreakers from future criminal activity as well as those individuals considering crime. Second, those individuals beyond reform must be incapacitated. In summary, policy implications of conservative theory advocate the need to incapacitate selectively (just the most persistent offenders) and punish more harshly to discourage offending. In other words, deter the calculating and incapacitate the wicked (Lilly et al., 2002). The recent revitalization of the classical school of thought has also led to the development of contemporary versions of classical theory, including rational choice theory, the expansion of the deterrence doctrine beyond legal penalties, and the integration of rational choice with other criminological theories, especially with the concepts from self-control and social learning theories. These recent developments will be discussed in the next section.

Current Issues in Deterrence Theory

The expansion of deterrence has been most associated with the development of rational choice theory. Developed from the concepts of expected utility theory, rational choice theory believes that individuals are rational actors who are expected to maximize profits and minimize losses. Rational choice theory was developed most fully by Cornish and Clarke (1986). Clarke and Cornish (2001) assert that individuals are influenced by many factors such as intelligence, family upbringing, gender, neighborhood, status, and temperament. Criminal decision-making is purposive with the intention to benefit the offender. Additionally, rational choice theorists often

adapt the concept of limited or bounded rationality. These models of partial rationality integrate constraints on choices through limited information, moral values, and other influences on illegal activities (Akers, 2000). Still, under this context, criminals are assumed to be rational actors (Lilly et al., 2002).

In addition to rational choice theory, Pratt, Cullen, Blevins, Daigle, and Madensen (2006) note several other recent, major developments that have influenced deterrence theory. The first is the importance of structural constraints that may limit the choices of potential offenders. This situational crime perspective assumes that criminals will engage in illegal activity unless some external factors exist that discourage such behavior. According to routine activity theory, crime will occur when individuals are faced with opportunities detached from capable guardians that may act as a deterrent (Cohen & Felson, 1979).

The second major development in deterrence theory has been the introduction of new concepts that expand the deterrence doctrine beyond legal penalties. This is a particularly salient point because non-legal costs may be more influential in criminal decision-making than formal sanctions (Pratt et al., 2006). For example, Braithwaite (1989) suggests that the potential for shame and loss of respect associated with being apprehended for engaging in criminal behavior is a major influence in the rational decision-making process. Akers, Krohn, Lanza-Kaduce, and Radosevich (1979) and Grasmick and Green (1980) found deterrent effects among informal sanctions, such as individual moral commitments and disapproval of family and friends. According to Pratt et al. (2006), the introduction of social costs has been shown to have a deterrent effect on behavior.

A third trend in the deterrence framework has been the integration of rational choice with other criminological theories – especially with the concepts from self-control and social learning

theories. Piquero and Tibbetts (1996) introduced concepts from situational crime prevention and self-control theory. An individual's level of self-control is believed to influence perceptions of situational constraints (i.e., perceived pleasure and shame) and sanction risk perceptions. Piquero and Tibbetts (1996) found that individuals with low levels of self-control perceive greater pleasure from offending, less situational shame, and a lower likelihood of being apprehended. Paternoster (1985) introduced variables from both social learning theory and social bonding theory by examining the perceived risk of informal sanctions from parents and peers as well as moral beliefs and attachment to family and friends.

Stafford and Warr (1993) also integrated concepts from social learning theory into their reconceptualized theory of deterrence. Deterrence theory has been conceptualized as involving two separate processes which by tradition are known as general and specific deterrence (Stafford & Warr, 1993; Piquero & Paternoster, 1998). General deterrence aims to influence more than just the single offender. The punishment of a single person serves as an example to other potential would-be offenders, discouraging them from engaging in criminal behavior by illustrating the negative consequences they could expect. Specific deterrence refers to efforts that dissuade an individual offender from breaking the law again in the future. Under this aspect of deterrence, the punishment is not predicted to influence anyone besides the targeted individual (Gould & Sitren, 2005).

Piquero and Paternoster (1998) note that in the past, researchers have characterized these two types of deterrence as operating on two separate populations: "specific deterrence affects the punished offender, whereas general deterrence affects the unpunished would-be offender who somehow witnesses or vicariously experiences punishment" (p. 3; also see Stafford & Warr, 1993). Over a decade ago, Stafford and Warr (1993) proposed a reconceptualization of

deterrence in which both general and specific processes are married together. They claimed that all persons could be affected by directly experiencing punishment (specific deterrence) as well as by experiencing punishment indirectly when other persons are punished (general deterrence).

Although the traditional conception of general and specific deterrence is commonly accepted by criminologists, Stafford and Warr (1993) present several shortcomings. One shortcoming is the belief that general deterrence and specific deterrence impact different kinds of individuals (either the general public or punished offenders). Both general and specific deterrence are part of the deterrence process. However, general deterrence is focused on an individual's indirect experience with punishment while specific deterrence focuses on an individual's direct experience with punishment. Second, Stafford and Warr argue that the basic conception of deterrence is concerned only with the effects of being punished. The potential effects of avoiding punishment for a criminal behavior are overlooked. Stafford and Warr assert that punishment avoidance may encourage criminal behavior more so than punishment does to discourage crime. A third shortcoming of the traditional conception of separating specific from general deterrence is the assumption that an individual offender's direct experience with punishment (i.e., specific deterrence) is the only influential variable when predicting future behavior. However, offenders may not always experience punishment and often times engage in more than one type of criminal activity. Surely, most individuals, including offenders, will have some combination of direct and indirect experiences with legal punishment and experiences with avoiding punishment.

To overcome these limitations, Stafford and Warr (1993, p. 127) recast general deterrence as the "deterrent effect of indirect experience with punishment and punishment avoidance" and specific deterrence as the "deterrent effect of direct experience with punishment

and punishment avoidance.” An individual’s direct and indirect experience with punishment will increase his or her perception of the certainty, and perhaps severity, of punishment. In turn, these experiences will decrease the likelihood of future offending. Conversely, direct and indirect experiences with avoiding punishment will increase the individual’s future tendency to offend by diminishing the perceived certainty of punishment.

Stafford and Warr (1993) observe several advantages to this reconceptualization. First, redefining these concepts allows for general and specific deterrence to affect any individual in any population. There is no longer an assumption that specific deterrence influences offenders and general deterrence influences a completely different group of non-offenders. Therefore, tendencies to offend are determined directly by one’s personal experiences or indirectly by one’s vicarious experiences. Additionally, the relative affect of these experiences may not always be equivalent (Paternoster & Piquero, 1995). Second, the experience of avoiding punishment is considered to be a separate experience from that of being punished. Analytically, this distinction is fundamental. As Stafford and Warr (1993, p. 125) assert, any criminal act will result either with punishment or punishment avoidance, and “it is dubious to argue that only the former impacts subsequent behavior.” Rather, avoiding formal sanctions conveys substantial information about the perceived certainty of punishment. Stafford and Warr contend that one other advantage to this model is its compatibility with learning theories. According to Bandura (1977), experiential learning is attributable to the positive and negative effects of a specific action, while observational or vicarious learning results from the observations of the errors and achievements of others. Parallels may also apply to contemporary social learning paradigms (e.g., Akers, 2001). As noted by Pratt et al. (2006), the cost-benefit analysis for engaging in crime is affected by personal experiences or the modeling behavior of others.

To summarize the perspective of Stafford and Warr (1993), the process of deterrence is affected by four kinds of experience: direct experience with punishment, direct experience with avoiding punishment, indirect experience with punishment, and indirect experience with avoiding punishment. The integration of concepts from self-control and social learning theories suggest that an individual's cost-benefit analysis is influenced by other factors such as self-control and other experiences as suggested by Stafford and Warr (1993; also see Pratt et al., 2006). The next section provides an overview of the findings of deterrence research.

Empirical Status of Deterrence

Prior to 1980, there were two main types of deterrence research: interrupted time-series and ecological studies. Interrupted time-series analyze the effects of specific punitive policy interventions. Findings indicate that such interventions can have at least a temporary effect (Sherman, 1990). Ecological studies estimate the deterrent effect by examining variations in crime and sanction levels over time. Several studies have found deterrent effects (Sampson & Cohen, 1988; Kagan, 1989; Levitt, 1996). Since 1980, perceptual studies have emerged as yet another body of deterrence literature. Overall, the perceptual studies have found a negative correlation between sanction risk perceptions and self-reported criminal behavior (Nagin, 1998).

The majority of interrupted time-series studies have observed the effect of police crackdowns on illegal drug markets (Kleiman, 1986; Reuter, Haaga, Murphy, & Praskac, 1988), drunk driving (Ross, 1982), and disorderly behavior (Sherman, Roschelle, Gartin, Linnell, & Coleman, 1986). Sherman (1990) and Ross (1982) have reviewed the literature on interrupted time-series. These authors surmise that interventions are usually effective in creating an initial

deterrent effect. For example, a decrease in fatalities involving a drunk driver would indicate an initial deterrent effect of drunk-driving interventions. This initial effect is usually only temporary, with a decline in the deterrent effect often beginning during the intervention itself. Offenders who overestimate the certainty of getting caught at the beginning of the crackdown later learn through trial and error or word of mouth that it is safe to offend again (Sherman, 1990). Thus, begins the decay of the deterrent effect.

Nagin (1998) analyzes two broad categories of ecological studies – the deterrent effect of prison and of the police. The deterrent effect of prison considers the relationship between the crime rate and the prison population, whether that is a direct relationship -- as crime increases, the prison population subsequently increases -- or an inverse relationship – where increased incarceration rates (which have both deterrent and incapacitation aspects) lead to lower crime. The few studies that have been conducted demonstrate a range of findings, from a negligible effect (Zimring & Hawkins, 1995) to Levitt's (1996) finding that each additional prisoner prevents approximately fifteen index crimes.

A larger body of ecological literature focuses on the police as a deterrent. Some of the first ecological studies found deterrent effects between police resources or apprehension risk and the crime rate (Wilson & Boland, 1978; Jacob & Rick, 1981). Continuing this line of research, Sampson and Cohen (1988) also found strong evidence of the arrest ratio deterring crime. Nagin (1998) analyzed several other studies (Marvell & Moody, 1996; Levitt, 1997) that reported a negative relationship between officers per capita and index crimes.

In an avenue of research that complements these aggregate-level studies, scholars have examined the empirical validity of deterrence theory at an individual level (Paternoster, 1987). Importantly, theorists recognized that deterrent effects most likely depend on people's

perceptions of the certainty and severity of punishment rather than on actual levels (Waldo & Chiricos, 1972). The deterrence doctrine was restated as a perceptual process that proposed a negative relationship between the perceived certainty and severity of punishment and participation in criminal activity.

Paternoster (1987) examined twenty-seven studies in the published literature that have reported tests on sanction risk perceptions and self-reported criminal/deviant behavior. The majority of these studies consisted of cross-sectional bivariate correlations, indicating a negative relationship between the perceived certainty of punishment and self-reported participation in criminal/deviant acts. In keeping with the deterrence doctrine, this finding remained consistent across different age and geographic samples, and across different operationalizations of perceptions and behavior.

Paternoster (1987) notes two problems with most of the research examining the deterrent effect of perceived punishment certainty. First is the problem of temporal order. Greenburg (1981) suggests that perceptual deterrence research must establish that the cause (perceptions) precedes the effect (criminal offending). He further adds that it is possible for perceptions to represent a consequence rather than a cause of deviant behavior. For example, several studies found that offenders had significantly lower estimates of punishment risk than non-offenders (Claster, 1967; Jensen, 1969). This finding suggests that non-offenders may overestimate the certainty of punishment. Once an individual engages in criminal behavior, however, perceptions of being caught diminish. The effect of engaging in criminal behavior on perceptions of punishment is known as the 'experiential effect.' This experiential effect detracts from the true deterrent effect. Paternoster (1987) suspected that in the studies he reviewed, the cross-sectional associations between sanction risk perceptions and criminal/deviant behavior that had been

reported as deterrent effects actually represented experiential effects. To separate these two types of effects, Paternoster examined the few perceptual deterrence studies that employed panel data. The true deterrent effect for those studies using a panel design was substantially weaker than those employing cross-sectional designs.

The second problem addressed by Paternoster (1987) is that of model misspecification, or controlling for the influences of other exogenous variables on the dependent variable. The inverse relationship between perceptions of punishment and criminal behavior may be caused by some other variable excluded from the causal model. Paternoster examined twelve studies that analyzed the deterrent effect of perceived certainty in more fully developed causal models. As a result of controlling for other exogenous variables, support for deterrence again diminished. The expected relationship between perceived certainty and criminal behavior was statistically significant in only two of the eight studies. Support for deterrence decreased further when multivariate tests and longitudinal models were employed. Paternoster's (1987) review of the literature suggests that support for the deterrence doctrine is greatest for those studies that are methodologically weakest – those studies that utilized cross-sectional designs and those with few controls for other exogenous variables.

Unlike the perceived certainty of punishment, the perceived severity of punishment has received less attention in deterrence research. Paternoster (1987) cites three reasons for this lack of attention to sanction severity. First, theorists have emphasized the certainty of punishment over the severity of punishment. This emphasis can be traced back to the founders of classical criminology (Beccaria, 1764). Second, after much investigation, researchers using aggregate level data found no consistent inverse relationships between punishment severity and crime rates. Thus, there was no aggregate-level relationship for researchers to seek to confirm or refute at the

individual level. Third, early perceptual deterrence researchers were also unable to find an inverse relationship between punishment severity and crime rates. The few studies that have been conducted reveal a weak relationship, if any, between perceived severity and criminal/deviant behavior, offering little support to the deterrence doctrine and little incentive to investigate this aspect of the theory further.

Pratt et al. (2006) build on Paternoster's (1987) review of perceptual deterrence research with a meta-analysis. Pratt et al. examine the literature in an attempt to ascertain the overall magnitude of the connection between deterrence variables and crime as well as focusing on the effect research methods and statistical analyses have on the support for deterrence theory. Pratt et al. examined the effect sizes of 40 empirical studies. These effect size estimates were compared weighted and unweighted, and divided into four predictor groups assumed to have different effects on the likelihood of offending. Effect size estimates were weighted due to variations in sample size, statistical interdependencies, or unobserved heterogeneity across studies. The four predictor domains included the certainty of punishment, the severity of punishment, deterrence theory composites, and the threat of non-legal sanctions, thereby including elements of rational choice.

Pratt et al. (2006) present two main conclusions associated with the effect size estimate findings. First, none of the weighting procedures significantly influenced the mean effect size estimates. Second, regardless of whether weighted or unweighted effect size estimates were examined, support for deterrence was relatively weak. This was particularly true for assessments of perceived severity and composite measures of deterrence. Effects were stronger for perceived certainty and for non-legal sanctions though these effects were still quite modest. The overall

effect size estimates weighted for sample size were -0.334 for perceived certainty and -0.177 for non-legal sanctions.

In addition to examining overall effect sizes, Pratt et al. also explored the impact of methodological variations on deterrence predictors. Consistent with Paternoster's (1987) study, Pratt et al. found substantial reductions in the mean effect size estimates of deterrence variables on crime from statistical expansions (bivariate to multivariate models). The mean effect size for the certainty predictors declined by 69% in those multivariate models that controlled for experiential effects or for variables from competing theories. Some differences were also observed across sample specifications. The strongest effects were found in those studies that used young adult or college-aged samples, and weaker effects were revealed by studies of the general population and of samples of offenders. Finally, Pratt et al. found that mean effect sizes were the strongest in those studies that examined organizational offending as their dependent variable. Weaker effects were produced for violent, property, drug, and alcohol-related criminality.

Empirical Tests of Stafford and Warr's Reconceptualization

Thus far, five studies have analyzed Stafford and Warr's (1993) reconceptualization of general and specific deterrence. These studies are summarized in Tables 1 and 2, and this dissertation discusses key aspects of their methods and findings below. In the earliest analysis, Paternoster and Piquero (1995) assessed Stafford and Warr's reconceptualization using data from a longitudinal study of underage drinking and marijuana use. The data, originally collected from high school students in a southeastern city in 1981 and 1982, did contain measures of several

salient variables. Direct experience, termed “personal experience” by Paternoster and Piquero (1995, p. 253), with punishment was based on the participants’ accounts of contact with the criminal justice system. Personal experience with avoiding punishment was calculated by subtracting the number of times the participant had been caught for smoking marijuana or drinking alcohol from the number of times he or she had engaged in these behaviors in the previous year. Unfortunately, indirect experience, or in Paternoster and Piquero’s (1995, p. 253) terminology “vicarious experience,” could be assessed with only a single item. The item asked for the proportion of each participant’s friends who used marijuana or alcohol, but no data were gathered on whether they had been caught or punished. Therefore, vicarious experiences with punishment could not be separated from vicarious experiences with avoiding punishment, a notable limitation of this test.

To measure perceived sanction certainty, Paternoster and Piquero (1995) employed the respondents’ 1981 estimates of how likely they would be to get apprehended by the police if they engaged in marijuana use and underage drinking. Criminal behavior was measured in the 1982 survey through participants’ accounts of the number of times they had drank alcohol and used marijuana during the previous year.

Paternoster and Piquero (1995) were able to substantiate several of Stafford and Warr’s (1993) propositions. The combination of both personal (specific deterrence) and vicarious (general deterrence) experiences influenced participants’ perceived risk of punishment for smoking marijuana and drinking alcohol. Contrary to Stafford and Warr’s model, however, the findings showed a positive relationship between personal punishment experiences and subsequent substance use.

The second test of Stafford and Warr's (1993) reconceptualization of general and specific deterrence was also performed by Piquero and Paternoster (1998). In this piece, Piquero and Paternoster applied Stafford and Warr's theory to a secondary data set assessing drinking and driving. Snortum and Berger (1989) conducted a 62-item national telephone survey of licensed drivers in 1986. Because the questionnaire was not specifically intended to assess Stafford and Warr's model, however, Piquero and Paternoster (1998, p. 6) "were forced to use what [they] think are close proxies of key theoretical constructs." For example, the measures of personal punishment experience were less than ideal because few participants had been punished for drinking and driving. Only 14 percent had been pulled over at a DUI checkpoint, and only two percent reported having been arrested. The former item is also problematic because an individual may be pulled over at a checkpoint when they have not been drinking, or a drinking driver may be pulled over but not arrested which would represent punishment avoidance.

Still, Piquero and Paternoster (1998) were able to examine Stafford and Warr's (1993) reconceptualization more comprehensively than they had in their 1995 study with the inclusion of separate measures of vicarious punishment and vicarious punishment avoidance experiences. Vicarious experience with punishment was assessed by participants' reports of whether they knew anyone who had been apprehended for driving while intoxicated, who had their driver's license suspended for driving while intoxicated, or who had been incarcerated for driving while intoxicated within the previous twelve months. Vicarious punishment avoidance was assessed by participants' estimates of how many people who are convicted of drinking and driving actually receive the appropriate punishment. Other items measured the participants' perceived severity and certainty of punishment.

Table 1 Reconceptualization of Deterrence Studies: Correlates of the Likelihood of Offending

Author	DV	Sample	Personal Punishment Experience	Personal Punishment Avoidance	Vicarious Punishment Experience	Vicarious Punishment Avoidance
Sitren and Applegate (2006)	Student cheating	College students	ns	+	ns	+
Sitren and Applegate (2007)	Drunk driving	College students	+	+	ns	+
Piquero and Pogarsky (2002)	Drunk driving	College students	ns	ns	+	+
Piquero and Paternoster (1998)	Drunk driving	Licensed drivers	+	+	+	-
Paternoster and Piquero (1995)	Underage drinking and marijuana use	High school students	+	+	*	*

Author	Vicarious Punishment- Others	Vicarious Punishment Avoidance- Others	Prior Illicit Behaviors	Vicarious Prior Illicit Behaviors	Certainty of Punishment	Certainty of Punishment Others	Severity of Punishment	Impulsivity
Sitren and Applegate (2006)	*	*	-	ns	ns	*	-	ns
Sitren and Applegate (2007)	ns	ns	ns	+	ns	*	-	+
Piquero and Pogarsky (2002)	*	*	ns	*	-	*	-	ns
Piquero and Paternoster (1998)	*	*	*	*	-	ns	*	*
Paternoster and Piquero (1995)	*	*	*	*	-	ns	*	*

Author	Pulled Over	Drinking	Moral Evaluation	Chance of Shame	Severity of Shame	Fun	Informal Sanctions	Peer DV Behavior
Sitren and Applegate (2006)	*	*	ns	ns	ns	+	*	*
Sitren and Applegate (2007)	*	ns	-	-	ns	+	*	*
Piquero and Pogarsky (2002)	ns	ns	*	*	*	*	*	*
Piquero and Paternoster (1998)	*	*	-	*	*	*	ns	+
Paternoster and Piquero (1995)	*	*	-	*	*	*	*	+

Author	Peer Attitudes Toward DV	Social Support	Parental Supervision	Age	Gender (males)	Income	Traffic Accident	GPA	Academic Standing	Another University
Sitren and Applegate (2006)	*	-	*	ns	ns	ns	*	ns	ns	ns
Sitren and Applegate (2007)	*	ns	*	ns	+	ns	ns	*	*	*
Piquero and Pogarsky (2002)	*	*	*	ns	ns	ns	ns	*	*	*
Piquero and Paternoster (1998)	+	*	*	*	ns	*	*	*	*	*
Paternoster and Piquero (1995)	*	-	-	*	*	*	*	*	*	*

+ significant positive relationship ($p \leq 0.05$)

- significant negative relationship ($p \leq 0.05$)

ns relationship not significant

* variable was not included or results not reported in the study

Note: Results summarized here are based on the most rigorous multivariate tests reported by the author(s) of each study.

Table 2 Reconceptualization of Deterrence Studies: Correlates of Perceived Certainty of Punishment

Author	DV	Sample	Personal Punishment Experience	Personal Punishment Avoidance	Vicarious Punishment Experience	Vicarious Punishment Avoidance
Sitren and Applegate (2006)	Student cheating	College students	ns	ns	ns	-
Sitren and Applegate (2007)	Drunk driving	College students	ns	-	ns	-
Piquero and Pogarsky (2002)	Drunk driving	College students	ns	ns	ns	-
Piquero and Paternoster (1998)	Drunk driving	Licensed drivers	ns	-	ns	+
Paternoster and Piquero (1995)	Underage drinking and marijuana use	High school students	-	ns	*	*

Author	Vicarious Punishment- Others	Vicarious Punishment Avoidance- Others	Severity of Punishment	Prior Illicit Behaviors	Pulled Over	Drinking	Impulsivity	Certainty of Punishment- Others	Moral Evaluation
Sitren and Applegate (2006)	*	*	ns	*	*	*	*	*	*
Sitren and Applegate (2007)	+	ns	ns	*	*	*	*	*	*
Piquero and Pogarsky (2002)	*	*	*	ns	ns	ns	ns	*	*
Piquero and Paternoster (1998)	*	*	*	*	*	*	*	+	+
Paternoster and Piquero (1995)	*	*	*	*	*	*	*	+	+

Author	Informal Sanctions	Peer DV Behavior	Peer Attitudes Toward DV	Social Support	Parental Supervision	Age	Gender (males)	Income	Traffic Accident
Sitren and Applegate (2006)	*	*	*	*	*	*	*	*	*
Sitren and Applegate (2007)	*	*	*	*	*	*	*	*	*
Piquero and Pogarsky (2002)	*	*	*	*	*	ns	-	ns	ns
Piquero and Paternoster (1998)	+	ns	ns	*	*	*	*	*	*
Paternoster and Piquero (1995)	*	-	ns	+	+	*	*	*	*

- + significant positive relationship ($p \leq 0.05$)
 - significant negative relationship ($p \leq 0.05$)
 ns relationship not significant
 * variable was not included or results not reported in the study

Note: Results summarized here are based on the most rigorous multivariate tests reported by the author(s) of each study.

Piquero and Paternoster (1998) found that a participant's level of agreement that he or she would in all likelihood drive while under the influence at least once in the next year was influenced by both personal and vicarious experiences. Consistent with Stafford and Warr's (1993) restatement, findings suggested that personally avoiding punishment encouraged future offending. Other results, however, were contrary to Stafford and Warr's (1993) propositions. Having been stopped at a DUI checkpoint and knowing someone who had been apprehended, incarcerated, or had his or her drivers license suspended – ostensibly measures of personal and vicarious punishment – both *increased* reported intentions to offend.

In a subsequent analysis of Stafford and Warr's (1993) model, Piquero and Pogarsky (2002) recognized the limitations in the previous two studies. Rather than utilizing secondary data, Piquero and Pogarsky (2002) designed a research study specifically to test Stafford and Warr's (1993) reconceptualization. The researchers recruited 250 students from a large, southwestern U.S. university. Participants were asked to complete a survey containing a hypothetical scenario in which each student had to make a decision about offending. Piquero and Pogarsky (2002) included separate measures of personal experience with punishment, personal experiences with avoiding punishment, vicarious experiences with punishment, and vicarious experiences with avoiding punishment. In addition, Piquero and Pogarsky (2002) assessed the role of impulsivity on offending behavior. The researchers predicted that impulsive individuals would be more likely to depend on personal experiences than vicarious ones.

Concerning drinking and driving, Piquero and Pogarsky (2002) corroborate some features of Stafford and Warr's (1993) reconceptualization of general and specific deterrence. Consistent with the model's predictions, personal experiences with avoiding punishment reduce perceptions of risk and increase future offending. Vicarious experiences with avoiding punishment also

reduced participants' estimates of the certainty of punishment and increased the likelihood of future offending. Contrary to deterrence theory, vicarious experiences with punishment, however, were negatively related to perceived sanction risk. Piquero and Pogarsky's results also found evidence in support of other predictors of offending. Impulsivity decreased respondents' perceived certainty of punishment.

Two final studies offered a replication and extension of Piquero and Pogarsky's 2002 study. Sitren and Applegate (2006, 2007) replicated Piquero and Pogarsky's technique using a larger sample from a different region of the country. Sitren and Applegate recruited 860 undergraduate students from a large, southeastern U.S. university. Both studies extended the literature by including several salient variables not previously considered in this context. Sitren and Applegate (2006, 2007) examined the effect of extralegal costs and benefits on offending, explored the probability that variation in social support influence offending intentions, and assessed general deterrence experiences in a more extensive way than in prior research. Additionally, Sitren and Applegate (2006) examined a different type of behavior. While the previous four studies analyzed some form of drinking behavior (drinking and driving or underage drinking), Sitren and Applegate (2006) evaluated student test cheating.

Similar to those of the previous investigations in this area, Sitren and Applegate's (2007) results provide only partial support for Stafford and Warr's (1993) conception of deterrence. Consistent with the reconceptualization, experiences with evading punishment increased an individual's likelihood of offending by reducing perceived risk of punishment. Additionally, perceived sanction risks and the probability of future offending were determined not only directly by personal experiences, but also indirectly through the punishment avoidance experiences of others. Results also confirm the prediction that experiences of close

acquaintances are more influential than those who are outside an individual's social circle (Stafford & Warr, 1993; Piquero & Pogarsky, 2002).

The findings for punishment experiences were more complex and did not always agree with expectations from deterrence theory. Sitren and Applegate (2007) observed that higher estimates for how often respondents' thought the police made DUI stops for those known personally increased the perceived punishment risk. Moreover, vicarious punishment experiences for those not personally known by the participant were the strongest predictor for perceived certainty of punishment.

Personal punishment experience was positively correlated to intentions to drive while intoxicated. This result is inconsistent with Stafford and Warr's (1993) restatement – and with any component of deterrence theory – which predicts a negative association between punishment and future criminal behavior.¹ As reported above, however, other studies also have found a positive relationship between measures of previous punishment experience and offending. Sitren and Applegate (2007) replicated Piquero and Pogarsky's (2002) observation that impulsivity is influential to offending decision-making. In addition, results demonstrate the importance of extralegal sanctions to perceptual deterrence research (Nagin, 1978; Pratt et al., 2006). Sitren and Applegate (2007) reported significant relationships between the amount of fun, chance of shame, and moral wrongfulness with future propensities to offend.

¹ Of course, other theoretical perspectives predict a positive correlation between punishment and future offending (Lemert, 1979) or identify specific situations in which punishment encourages rather than discourages perpetual criminality (Braithwaite, 1989).

In the study that examined students' intentions to cheat on an exam, Sitren and Applegate (2006) again found relationships that were partially supportive and partially not supportive of Stafford and Warr's (1993) reconceptualization. As predicted by the reconceptualization, the perceived certainty of punishment significantly decreased with greater vicarious punishment avoidance experiences. Additionally, both personal and vicarious experiences with punishment avoidance had positive and statistically significant effects on intentions to cheat on a college test. The experimental manipulation of punishment severity significantly influenced an individual's decision to offend.

Contrary to Stafford and Warr's (1993) conception, both personal and vicarious punishment experiences did not affect an individual's perceived risk of punishment. In addition, results suggested that punishment severity was not related to punishment certainty. More noteworthy, both personal and vicarious punishment experiences were not related to future offending. Several additional observations were less directly related to the deterrence framework but are worth mentioning. Respondents who had lower levels of social support reported higher intentions of offending. Sitren and Applegate (2006) also found one extralegal consideration that influenced participants' propensity to engage in illegal activity: the amount of fun associated with the illegal behavior.

In sum, the existing studies partially confirm Stafford and Warr's (1993) reconceptualization, but they also raise some questions and suggest the need to move beyond deterrence variables to explain criminal behavior.

Limitations of Existing Deterrence Research

Reviews of deterrence research have found studies in support of the deterrence doctrine. While Nagin's (1998) assessment of deterrence research observed substantially more evidence for a deterrent effect among contemporary studies compared to those conducted in the 1970s, Paternoster (1987) and Pratt et al. (2006) suggest weaker findings in studies that have employed more rigorous statistical analyses. The few studies that have been conducted to test Stafford and Warr's (1993) reconceptualization of deterrence specifically demonstrate support for some key features of the model. However, previous deterrence research is not without its limitations. Research examining the relationship between the deterrent effect of sanction threats and criminal propensity have typically relied on student samples, relatively minor offending, minimal integration of extralegal costs and benefits, and bivariate statistical analyses. Therefore, four significant limitations characterize the empirical literature on deterrence.

First, deterrence researchers have focused on conventional populations. Deterrence theory has been tested in only limited ways with experienced offenders. According to Pogarsky et al. (2005), evidence suggests that offenders may have unique decision-making processes for different types of crimes. Pogarsky et al. (2005) examined data from the National Youth Survey to investigate how sanction risk perceptions are formed and modified. In two instances, the influences of perceptions of certainty and moral inhibitions differed for different types of crime. Nagin and Pogarsky (2004) also found differing considerations for future consequences when comparing property and violent crimes. These results add to the increasing collection of evidence that decision-making processes differ by crime type (Clarke & Cornish, 1985; Paternoster, 1989). Although perceptual deterrence research has advanced from bivariate correlations to

multivariate models, the majority of the studies have been conducted on student samples and have assessed minor deviant behaviors (Paternoster, 1987). Tests of Stafford and Warr's restatement have only examined college students (Piquero & Pogarsky, 2002; Sitren & Applegate, 2006, 2007), licensed drivers (Piquero & Paternoster, 1998), and high school students (Paternoster & Piquero, 1995). Pratt et al. (2006) note a pattern of deterrence support found among studies that draw on college students' self-reported intentions to offend based on hypothetical scenarios or vignettes that may be less pronounced among offender samples.

Several criminologists argue that offenders may be different than those typically studied in deterrence research (Piliavian et al., 1986; Decker et al., 1993). Wright, Caspi, Moffitt, and Paternoster (2004) observe, for example, that samples of university students may not provide adequate variation in criminal propensity to fully measure the interaction between deterrence variables and likelihood of offending. Furthermore, Gottfredson and Hirschi (1990) contend that criminally prone individuals are more impulsive, risk-taking, and present-oriented in nature. This impulsivity facilitates the criminally prone to neglect long-term consequences and instead focus on the immediate benefits of their behavior. Thus, threatened punishments for crime may deter criminally prone individuals less than others.

Criminally prone individuals may also have much less to lose through formal and informal sanctions when compared to conventional individuals (Wright et al., 2004). Individuals with a higher likelihood of offending often have a difficult time establishing long-term relationships, continuing with educational training, and/or committing themselves to long-term career goals (Wright et al., 2004). Additionally, Block and Gerety (1995) found that offenders are more risk seeking and thus, are less deterrable with increases in punishment certainty. Moreover, offenders' perceptions may be more resistant to change. Bridges and Stone (1986)

found that experiences with crime and punishments had little effect on offenders' perceptions of threat. In an examination of several high-risk populations, Piliavin et al. (1986) found that neither formal sanctions nor the risk of losing a spouse or friend if imprisoned acted as a deterrent to criminal behavior. Therefore, the salient deterrents may be very different for offending populations (Piliavin et al., 1986; Decker et al., 1993).

The second limitation of the empirical literature on deterrence is the concentration on a narrow set of offenses, especially nonserious criminal acts (Paternoster, 1987). As previously discussed, individual-level analyses of deterrence have largely sampled students in high schools or colleges (Chiricos & Waldo, 1970; Jensen, Gibbs, & Erickson, 1978; Paternoster, 1983) or sampled geographically limited populations (Meier & Johnson, 1977; Grasmick & Green 1980; Tittle, 1980). As a result, because serious crimes are uncommon in these populations, researchers have used as dependent variables non-serious forms of deviant behavior, such as marijuana use, petty theft, and alcohol abuse (Piliavin et al., 1986). In particular, studies that have tested Stafford and Warr's (1993) restatement also have examined only a limited number of offenses – drinking and driving, underage drinking, marijuana use, and student test cheating. These behaviors threaten the principles of some groups of individuals but not others. Therefore, findings of these studies may be suggestive of informal controls to specific groups. Of great importance is determining the explanatory power of a deterrence model on a broader range of offenses (Piliavin et al., 1986).

Prior tests of Stafford and Warr's (1993) conception all took an offense-specific approach to testing the deterrent effects of punishment and punishment avoidance (Paternoster & Piquero, 1995; Piquero & Paternoster, 1998; Piquero & Pogarsky, 2002; Sitren & Applegate, 2006, 2007). Research shows that most offenders do not “specialize”, committing more than one type of

offense (Gottfredson & Hirschi, 1990; Moffitt, 1993). Furthermore, experiences with punishment and punishment avoidance for one type of misbehavior may spill over to other areas of offending.

A third limitation has been the lack of attention to the extralegal costs and benefits of the decision-making process. According to Paternoster (1989), perceptual deterrence researchers have rarely integrated their tests into an overall model of social control. Even though the threat of informal sanctions and moral condemnation of acts have been included in some analyses, the importance of these variables has not been properly articulated. Grasmick and Bursik (1990) identify two extralegal sources of conformity: embarrassment and shame. The embarrassment of the legal sanction stems from disapproval from persons with important connections to the offender (e.g., friends, spouses, family). An offender may experience the feeling of shame after committing a criminal act if the act violates the offender's internalized behavioral norms. Several studies examining non-legal consequences have found that a moral belief that the behavior is wrong (Foglia, 1997; Paternoster & Simpson, 1996), and the fear of peer disapproval or embarrassment (Tittle, 1980; Grasmick & Bursik, 1990; Nagin & Paternoster, 1994) discourages criminal behavior.

Additionally, in a survey of high school students, Paternoster (1989) analyzed the influence of affective ties, material considerations, opportunities, informal sanctions, formal sanctions, and moral considerations on one's decision to offend. He found considerable support for examining the effect of non-legal considerations of offending decisions. Several other studies have also noted the importance of examining the extralegal costs associated with being apprehended for a crime (Nagin, 1998; Nagin & Pogarsky, 2001). In fact, the deterrent effect of extralegal sanctions may be as great a deterrent as legal sanctions. These considerations are part

and parcel of a rational choice perspective and Stafford and Warr's (1993) model may also benefit from their integration.

Variations in rewards and risks have yet to be introduced to tests of Stafford and Warr's (1993) reconceptualization of deterrence. In the first study designed specifically to test Stafford and Warr's (1993) theory, Piquero and Pogarksy (2002) used one measure of personal punishment (i.e., being stopped by the police). The authors recommend the examination of several other forms of punishment, such as arrest, court procedure, conviction, and incarceration. Furthermore, the risk of punishment was not varied in previous tests of Stafford and Warr's reconceptualization. Perceived punishment risk is highly salient to offending decisions. It is argued that offenders' perceptions of punishment severity and risk are quite different than non-offenders. Inexperienced offenders are more likely to fear punishment than experienced ones (Bridges & Stone, 1986). Novice offenders have less information on which to base their decisions and sanction risk perceptions. Consequently, such perceptions may change dramatically with initial experiences with the criminal justice system. In contrast, experienced offenders have more accurate risk and severity punishment perceptions. As such, these perceptions are less easily influenced. A study that systematically varies the certainty of punishment would allow these possibilities to be examined empirically.

The fourth limitation characterizing much of the empirical literature on deterrence is the failure to establish temporal ordering of sanctions and crime consistent with their theoretical ordering. Most analyses of individual-level deterrence have relied mainly on bivariate relationships. Inferring causality is difficult not only for cross-sectional studies but also for individual-level studies of deterrence for two reasons. First, the causal ordering between independent and dependent variables contradicts their temporal ordering. Any criminal behavior

committed prior to an interview is characterized as a function of attitudes. This type of design, however, is unable to determine whether observed negative relationships are the result of the impact of crime on perceived risks. Second, because information on independent and dependent variables are collected at the same time, contamination effects cannot be ruled out. For example, a respondent's reports on one set of variables may influence responses on others (Piliavin et al., 1986). Still, cross-sectional, individual-level studies can provide robust tests when researchers attend to the issue of causal ordering.

In sum, Paternoster (1987) suggests that survey research of high-criminality among an adult sample would further perceptual deterrence research. Furthermore, Piquero and Pogarsky (2002) note the importance of examining offenders so as to separate the influence of personal or vicarious experiences or both. Integrating experienced offenders in tests of deterrence theory would also allow expansion of the range of offenses to include more serious crimes. In order to understand criminal decision-making, Nagin and Pogarsky (2001) note the importance of integrating alternative sanction forms with deterrence theory. And finally, establishing causal ordering of sanctions and crime consistent with their temporal ordering would prove to further the empirical literature on deterrence (Piliavin et al., 1986).

The Current Study

Although the literature examining general and specific deterrence separately is extensive (Nagin, 1998), only the five studies reviewed here have examined Stafford and Warr's (1993) propositions about a combined model. While the first two tests of Stafford and Warr's (1993) theory employed secondary data (Paternoster & Piquero, 1995; Piquero & Paternoster, 1998),

subsequent analyses utilized original data designed to test the key constructs of Stafford and Warr's (1993) reconceptualization (Piquero & Pogarsky, 2002; Sitren & Applegate, 2006, 2007). The current study offers a replication and extension of these pieces. This study replicates Piquero and Pogarsky's vignette approach but uses a sample of offenders. It also extends the literature by incorporating several concepts not previously considered in this context. This dissertation will evaluate the impact of extralegal costs and benefits of offending, measure general deterrence experiences in a more extensive manner than in prior research, and expand the range of offending behaviors. In any event, this study seeks to test the core predictions presented by Stafford and Warr: (H₁) personal and vicarious experiences with punishment will decrease the likelihood of future offending by increasing the perceived certainty of punishment; and (H₂) conversely, personal and vicarious experiences with punishment avoidance will decrease an individual's perception of the certainty of punishment, thereby increasing an individual's future tendency to offend. Finally, this dissertation will provide beginning evidence on the question of whether Stafford and Warr's (1993) model should be expanded to include extra-legal considerations drawn from rational choice theory. The next chapter presents the research methodology for this study, including a description of the sample, procedures, and measurement of variables.

CHAPTER THREE: METHODOLOGY

Sample

Work release inmates were recruited from Orange County, FL. Respondents were asked to complete a written questionnaire. Participation was anonymous and voluntary. Offenders were selected as the subject population for two reasons. First, there is a lack of evidence about known offenders in the area of perceptual deterrence research (Paternoster, 1987). Second, several studies have shown that it is possible to examine perceptual deterrence among active offenders (Nagin & Paternoster, 1991; Decker et al., 1993).

This project requested participation from all available Orange County work release inmates, continuing until 300 participants were obtained. Orange County work release inmates are confined and almost always sentenced, with little or no history of violence. The Orange County Work Release Center (WRC) has a capacity of 308 inmates. At the beginning of data collection, there were approximately 150 males and 40 females residing at WRC. Both males and females were surveyed. Because some inmates choose not to participate and WRC only had approximately 200 inmates at any one time, data collection continued for several months until the desired 300 responses were obtained. The total number of surveys collected was 326. The recruitment of 326 work release inmates produces estimated power of 0.986, with a medium effect size, 95% confidence interval, and 33 indicators.

Procedures

Work release inmates are confined at the facility for all times other than when they are working or receive a 12-hour furlough for good behavior. Surveys were administered to inmates in a confined area, an available room designated by the administrative sergeant. The survey took approximately 20-30 minutes to complete. Those 200 inmates who resided at WRC were surveyed in groups of approximately 40. Once the initial population of 200 inmates was surveyed, the researcher went on a weekly basis to survey inmates newly admitted to WRC. Each week, anywhere between 7 and 20 inmates entered WRC. The facility kept a list of all inmates and called those individuals who needed to complete the survey. WRC tracked those inmates who had already been surveyed so as not to duplicate respondents. Orange County WRC employees were the only persons to have access to the list of inmate names; thus, the survey remained anonymous. According to the administrative sergeant, administering surveys in smaller groups had the lowest negative effect on facility operations.

Respondents were asked to complete a written questionnaire containing three hypothetical scenarios in which the participant had to decide whether or not to offend in a particular situation. The offenses addressed in the scenarios were driving under the influence, drug abuse, and larceny-theft. The survey topics and subject population were chosen because they came together in a way particularly useful for testing Stafford and Warr's (1993) reconceptualization. First, driving under the influence, drug abuse, and larceny-theft are all relatively common offenses. According to the Uniform Crime Reports (2006), approximately 4.5 million individuals were arrested for these offenses, representing nearly one third of all total arrests made in 2005. Second, in order to produce meaningful survey responses, participants

must have adequate familiarity with the chosen behaviors. The majority of inmates at WRC are typically incarcerated for nonviolent offenses, such as property crimes, drug abuse violations, and motor vehicle violations. Therefore, participants should have enough knowledge and experience with these offenses to answer personal questions about themselves and vicarious questions about other people's behavior. More specifically, these scenarios addressed driving under the influence of alcohol, illegal drug purchase, and shoplifting. All three are relatively minor offenses in which respondents would have adequate familiarity with the selected behaviors. Additionally, these three offenses lent themselves nicely to the creation of realistic hypothetical scenarios.

Three hypothetical scenarios were developed to test the key elements of Stafford and Warr's (1993) reconceptualization by placing respondents in a situation where they had to make a decision about offending. The first scenario, driving under the influence of alcohol, was designed by Piquero and Pogarsky (2002, pp. 161-162) and also utilized in several other studies (Pogarsky, 2002; Pogarsky & Piquero, 2003; Sitren & Applegate, 2007):

Suppose you drove by yourself one evening to meet some friends in a local bar. By the end of the evening, you've had enough drinks so that you're pretty sure your blood alcohol level is above the legal limit. Suppose that you live about 10 miles away and you have to be at work early the next morning. You can either drive home or find some other way home, but if you leave your car at the bar, you will have to return early the next morning to pick it up.

The second scenario, illegal drug purchase, was as follows:

Suppose you know another work release inmate who has drugs for sale, including marijuana, crack, heroin, and some prescription medications. You know that drugs are

not allowed in work release, but they could make your time go by with fewer worries.

You have the money to buy whatever you want.

The third scenario, shoplifting, was modified from one created by Tibbetts (1997, pp. 249-250).

Suppose it is Sunday evening, and you have gone to a small, privately owned convenience store to buy some cold medicine. The past few days, you have been feeling sick and have not been sleeping well. You think the cold medicine will help you get some sleep before a big meeting the next morning. The store is about to close when you realize that you do not have enough money to buy the cold medicine. The medicine is small enough to hide on you without anyone noticing. You do have enough money to buy a soda so that no one will be suspicious of you not buying anything. You notice that you are out of sight from the only clerk, who is reading the newspaper behind the counter, and there seem to be no video cameras or other types of security devices in the store.

It is possible that certain respondents would find it difficult to picture themselves in these situations. If this were the case, the validity of the scenario to assess their intention to offend would be diminished. Therefore, after each scenario, the respondents were asked to assess its realism. Specifically, they were asked to rate on a scale of 0 to 100 how realistic it is that they would find themselves in the situation described. Also following each scenario, the survey asked respondents to complete several judgment questions about the situation, general questions about the illegal behavior (driving under the influence, drug abuse, or larceny-theft), and additional items intended to measure possible interaction and control variables.

Measurement of Variables

As previously noted, this dissertation replicated and extended Piquero and Pogarsky's (2002) piece. In this respect, the current study replicated their measures of the key constructs in Stafford and Warr's (1993) reconceptualization of general and specific deterrence: Likelihood of offending, personal and vicarious experiences with punishment and punishment avoidance, perceived certainty of punishment, and punishment severity. Appendix A provides a summary of the operationalization of all study variables. Below, this project describes the dependent variable – likelihood of offending – and each group of independent variables – personal experience, vicarious experience, punishment certainty, punishment severity, extralegal costs and benefits, impulsivity, religiosity, and other controls.

Likelihood of Offending

To measure the dependent variable in the deterrence framework, the respondents estimated the likelihood that they would drive drunk, purchase illegal drugs, and shoplift under the circumstances described in each scenario (on a scale of 0 to 100). A nondichotomous technique for the operationalization of the dependent variable allowed participants to concede some uncertainty in the decision to offend. Other factors not included in the vignette, such as efforts to “save face” (Gusfield, Rasmussen, & Kotaraba, 1984), may influence an individual's decision to drink and drive, purchase illegal drugs, and steal. Therefore, this approach allowed participants the chance to state “it depends” while providing a concrete answer.

Personal Experience

Personal experiences were measured by asking respondents to report their experiences with punishment and punishment avoidance for the three offenses corresponding to those in the hypothetical scenarios -- drunk driving, illegal drug purchase, and shoplifting. Personal punishment experience for the drunk driving scenario was defined as the number of times the participant has been arrested by the police when their blood alcohol level was above the legal limit. This study also asked participants to report the number of times that they have previously driven when they suspected that their blood alcohol level was above the legal limit. Therefore, personal punishment avoidance was calculated by subtracting the number of times inmates have been previously arrested by the police for driving under the influence from the number of times they have driven while intoxicated.

Similarly, personal punishment experience for the drug purchase scenario was defined as the number of times the participant has been arrested for buying drugs illegally. Participants were also asked to report the number of times they have previously purchased illegal drugs. Therefore, personal punishment avoidance was calculated by subtracting the number of times inmates have been previously arrested for buying drugs illegally from the number of times they have previously purchased illegal drugs.

Personal punishment experience for the shoplifting scenario was defined as the number of times the participant has been arrested for taking something from a store without paying for it. Participants were also asked to report the number of times they have taken something from a store without paying for it. Therefore, personal punishment avoidance was calculated by subtracting the number of times inmates have been previously arrested for taking something

from a store without paying for it from the number of times they have taken something from a store without paying for it.

Other potential influences on how people interpret the certainty of punishment may include their experiences with other crimes. That is, deterrence may generalize from one situation to another, where punishment for one offense may discourage someone from committing a different illegal act (Piquero & Pogarsky, 2002). Previous studies testing Stafford and Warr's (1993) reconceptualization have measured prior illegal offending but have not been able to separate measures of punishment and measures of punishment avoidance – a central dimension to the theory currently being tested. Therefore, this dissertation also asked respondents to report their experiences with punishment and punishment avoidance with several other crimes including car theft, vandalism, burglary, public disturbance, assault, driving without a license, and whether respondents have started a fistfight. Again, to separate punishment avoidance experiences, the number of times an inmate had been arrested was subtracted from the number of times he or she had committed the offense in question.

Thus, for each scenario there are four indices of personal or direct experience. Offense-specific indices captured each respondent's experiences with punishment and punishment avoidance for the crime described in the instant vignette. Below, these are labeled "Personal Punishment [offense]" and "Personal Punishment Avoidance [offense]", respectively. To assess personal experience with punishment for other crimes, "Personal Punishment (other crimes)", indices were calculated by adding the number of times respondents had been arrested in the previous five years for driving a car without the owner's permission; vandalizing someone's property; breaking into house or building; acting loud, rowdy, or unruly in a public place; hurting or threatening to hurt someone with a weapon; driving without a license; starting a fistfight; and

the two offenses from the vignettes not currently under consideration. For example, the personal punishment index for the drunk driving scenario included the sum of arrests for all the crimes listed above plus buying illegal drugs and shoplifting. Similarly, the personal punishment index for drug purchase and shoplifting also included the sum of all offenses except the one in question. Punishment avoidance indices were calculated in the same manner, by adding the punishment avoidance experiences for each offense (drunk driving, drug purchase, shoplifting, car theft, vandalism, burglary, public disturbance, assault, driving without a license, and whether respondents have started a fistfight) except the one in question. These indices are labeled, “Personal Punishment Avoidance (other crimes).”

Vicarious Experience

Piquero and Pogarsky (2002) note that individuals could be exposed to punishment experiences and punishment avoidance experiences by a very small or very large number of acquaintances. Thus, utilizing frequencies to assess an individual’s vicarious experiences would present problems. Instead, this dissertation followed the lead of Piquero and Pogarsky (2002) by assessing vicarious experiences based on proportions. To measure an individual’s vicarious experience with punishment for the drunk driving vignette, participants were asked to report the percentage of the people they know who have ever been charged with driving while under the influence of alcohol. To measure an individual’s vicarious experiences with avoiding punishment, this answer was subtracted from each participant’s estimate of the percentage of the people they know who have driven drunk “on at least several occasions.” This calculation produced an approximation of the percentage of acquaintances that have driven while intoxicated

but have not been punished. Vicarious experiences with punishment for the drug purchase scenario were measured by asking participants the percentage of the people they know personally who have ever been charged with buying illegal drugs. To measure an individual's vicarious experiences with avoiding punishment, this response was subtracted from each participant's estimate of the percentage of people they know who have bought drugs illegally "on at least several occasions." This calculation thereby yielded an estimate of the percentage of acquaintances that have bought drugs illegally but have not been punished. To measure vicarious experiences with punishment for the shoplifting scenario, participants were asked to report the percentage of the people they know who have ever been charged with taking something from a store without paying for it. To measure an individual's vicarious experiences with avoiding punishment, this response was subtracted from each participant's estimate of the percentage of the people they know who have taken something from a store without paying for it "on at least several occasions." Thus, this calculation produced an estimate of the percentage of acquaintances that have shoplifted but have not been punished.

Three additional measures of vicarious experience were also included in the current study. Traditional statements of general deterrence theory do not specify that an individual must know the person who receives (or avoids) punishment in order for the event to influence the perceived risk of punishment. Individuals may attain knowledge about crime and the criminal justice system from individuals their friends know but they do not, or from television, newspapers, or other media (Surette, 1997). Stafford and Warr (1993) assert that the closest associations will have the largest effect. Even still, assessments of vicarious experience used in previous studies, those examining only people known to the participant (Paternoster & Piquero, 1995; Piquero & Paternoster, 1998; Piquero & Pogarsky, 2002), significantly limits the general

deterrence concept. To measure an individual's vicarious punishment experiences from beyond his or her immediate social circle, participants were asked to estimate "besides the people you know personally" how often do people get caught for driving drunk, for buying illegal drugs, and for shoplifting. Vicarious experiences with avoiding punishment were attained by subtracting this estimate from the participant's account of how often he or she thinks individuals drive after drinking too much, purchase illegal drugs, and take things from stores without paying for them.

As an additional component of vicarious experience, several sets of questions assess an individuals' consumption of the media as well as his or her perceptions of its credibility and accountability. To measure media consumption, participants were asked how many hours during a typical weekday (Monday through Friday) they spend watching television, listening to the radio, reading newspapers, reading magazines, and surfing the Internet. Participants were also asked to estimate these same numbers of hours during a typical weekend day (Saturday and Sunday). Weekly consumption measures were created for each television, radio, newspaper, magazine, and Internet.

To measure perceptions of media credibility, participants were asked how closely television, the radio, newspapers, magazines, and the Internet represent life the way it really is. Inmates indicated their level of credibility with each element of media on a 4-point Likert scale. All responses were summed and divided by the number of items answered to produce an index where higher scores indicate greater credibility ($\alpha = 0.74$). In addition, respondents also rated on a Likert scale how helpful the following sources would be if the respondent was looking for ideas on how to commit a crime: movies, music videos, magazines and books, newspaper stories, and television shows. All responses were summed and divided by the number of items answered

to produce an index where higher scores indicate greater helpfulness for ideas on how to commit a crime ($\alpha = 0.87$).

Punishment Certainty

After reading each hypothetical vignette, participants were asked to approximate on a scale from 0 to 100 the certainty of punishment under the situation described (i.e., the chance of getting pulled over by the police for drinking and driving; the chance of getting caught by Work Release for buying illegal drugs; or the chance of getting caught by the clerk for shoplifting). As noted by Klepper and Nagin (1989), providing a specified certainty of punishment would be artificial. Allowing respondents to approximate the certainty of punishment avoids a forced response that would not necessarily relate to the participants' actual perspectives.

Additionally, an experimental manipulation of the perceived risk of punishment certainty was also included. The drunk driving scenario was randomized to exclude or include the following sentence expected to influence respondents' perceptions of punishment certainty, "Since it is a holiday, the police have increased the number of drinking and driving patrols, and may even conduct random sobriety checks." This statement was used previously in a study by Nagin and Pogarsky (2001, p. 874). The remaining two scenarios were randomized to include one of two statements expected to influence respondents' perceptions of punishment certainty. In the drug purchase scenario, one of these two statements was included: "You have the money to buy whatever you want" or "You have the money to buy whatever you want but you have heard that Corrections is cracking down on illegal drug purchase and is increasing random searches of work release inmates." In the shoplifting scenario, one of the following two statements was

included: “You notice that you are out of sight from the only clerk, who is reading the newspaper behind the counter, and there seem to be no video cameras or other types of security devices in the store” or “You notice that the clerk might be able to see you in a mirror and there is a video security camera at the front of the store.” Work release inmates were randomly assigned to one of two manipulations of punishment certainty: less certain or more certain.

Punishment Severity

To measure the effects of severity for the drunk driving scenario, this survey replicated Piquero and Pogarsky’s (2002) assessment of potential punishment. Respondents were informed that if convicted for driving under the influence, they would not receive a fine or go to jail; however, their driver’s license would be suspended. Inmates were randomly assigned to one of two punishments: either a three month driver’s license suspension or a twelve month driver’s license suspension. Similarly, the drug purchase scenario informed inmates that if convicted for buying drugs illegally, respondents would be sentenced to community service hours. Inmates were randomly assigned to one of two punishments, either 20 hours of community service or 200 hours. The shoplifting scenario informed participants that if convicted, they would not go to jail; however, they would receive a fine. Inmates were randomly assigned to one of two fines: \$100 or \$500. Therefore, this dissertation included an experimental manipulation of punishment severity.

According to Florida law, the sentences for all three offenses are reasonable. For example, an individual arrested for driving under the influence is subject to receiving a driver’s license suspension up to one year for first time offenders (Florida Uniform Traffic Control Law,

2005). An individual convicted of buying drugs illegally may be charged with anything from a first-degree misdemeanor to a second-degree felony, all which would include some amount of community service hours (Florida Comprehensive Drug Abuse Prevention and Control Act, 2005). Finally, for the shoplifting scenario, an individual may be charged with a misdemeanor of the second-degree for shoplifting an item under \$10, punishable by a fine not to exceed \$500 (Florida Anti-Fencing Act, 2005).²

Extralegal Costs and Benefits

Driving after drinking, buying illegal drugs, and shoplifting may involve both positive and negative effects that are unrelated to legal consequences. To assess a potential benefit of driving drunk, buying illegal drugs, and shoplifting, respondents were asked how much they would enjoy driving home from the bar, buying illegal drugs, and taking the cold medicine without paying for it. To assess the effect of potential extralegal negative consequences of each offense described in the scenarios, the participants were asked several questions. First, participants were asked to estimate independently how ashamed they would feel of themselves if they drove home drunk from the bar, purchased illegal drugs, or took the cold medicine without paying for it even if no one else found out. Relatedly, each participant reported how morally wrong it would be to drive home drunk, buy illegal drugs, and take the cold medicine without paying for it.

² As an additional check on the realism of the scenarios, I requested that the penalties be reviewed by a practicing Florida criminal defense attorney. The attorney agreed that the punishments were realistic for each crime.

Impulsivity

Impulsivity is a factor in how individuals weigh their future outcomes (Nagin & Pogarsky, 2004). The current study replicated Piquero and Pogarsky's (2002) measure of impulsivity by taking six questions from the Barratt Impulsivity Index (Bachorowski & Newman, 1985). Inmates were asked to identify their level of agreement or disagreement with each statement on a five-point Likert scale. All responses were added together and divided by the total number of items answered to create an index where higher scores signified greater impulsivity ($\alpha = 0.57$). Sitren and Applegate (2006 & 2007) reported alpha levels for the Barratt Impulsivity Index used in the previous tests of Stafford and Warr's (1993) restatement. Alpha levels of 0.76 were reported in both studies, thereby suggesting the impulsivity scale used is internally consistent. Even though the alpha level in this study was slightly lower ($\alpha = 0.57$), the reliability analysis is still acceptable (Hair, Black, Babin, Anderson, & Tatham, 2006).

Religiosity

Criminologists have long examined the relationship between religiosity and crime. As noted by Cochran, Wood, and Arneklev (1994), the traditional belief predicts a significant influence of religion on both society and human behavior. Hirschi and Starke (1969) observed this relationship in their landmark study, "Hellfire and Delinquency." Contrary to predictions, Hirschi and Stark (1969) found that frequent church goers and students who believed in the supernatural world were just as likely to engage in deviant behavior as those who did not believe in life after death. These findings sparked additional research to examine the relationship

between hellfire and delinquency, several studies demonstrating support for the religious impact on crime (Rohrbaugh & Jessor, 1975; Higgins & Albrecht, 1977).

Therefore, as a possible confounding variable, the issue of religiosity as it relates to crime was addressed. Evans, Cullen, Dunaway, and Burton (1995) examined the aspect of religious salience, a concept that represents the practical influence of religion in every day life. This aspect of religiosity measures important attachment and belief elements. Evans et al. (1995) created a religious salience scale consisting of three statements that measured the effect of religious beliefs on daily behavior as well as the extent to which one relies on a set of religious beliefs or religious community. This index was replicated by asking the participants to indicate their level of agreement or disagreement on a 5-point Likert scale with the following three statements: “Religion is a very important part of my life,” “Following God’s commandments is important to me,” and “In times of personal trouble, I turn to religion for guidance.” All responses were summed and divided by the number of items answered to produce an index where higher scores indicate greater religiosity ($\alpha = 0.84$). Evans et al. (1995) report a 0.85 alpha level for the religious salience scale, thereby indicating an internally consistent scale.

Other Control Variables

Respondents were asked several other questions regarding their gender, race, age, marital status, weekly income, education level, and how long they have been on work release. For the analyses below, education level was coded so that higher scores indicated more schooling (1 = middle school, 2 = high school, 3 = some college, 4 = college graduate) and marital status was dummy coded (0 = not single, 1 = single). Race was collapsed into three categories – African

American, Caucasian, and other – and dummy variables were created. The next chapter presents the results for this study. The deterrent effects for each behavior will be examined and presented, and a discussion of deterrent patterns observed across the three behaviors will conclude the chapter.

CHAPTER FOUR: FINDINGS

The purpose of this study is to test the core predictions of Stafford and Warr: (H₁) personal and vicarious experiences with punishment will decrease the likelihood of future offending by increasing the perceived certainty of punishment; and (H₂) conversely, personal and vicarious experiences with punishment avoidance will decrease an individual's perception of the certainty of punishment, thereby increasing an individual's future tendency to offend. It also provides beginning evidence on the question of whether Stafford and Warr's (1993) model should be expanded to include extra-legal considerations drawn from rational choice theory. A series of statistical analyses will follow, including descriptives, bivariate correlations, and multivariate linear regressions. Three separate analyses will be performed to examine the behaviors in each hypothetical scenario – drunk driving, drug purchase, and shoplifting. The first table will present descriptive results for demographic variables and for the shared variables between the scenarios. Next, the results from each scenario – descriptives for the main independent variables and the dependent variable, bivariate correlations, and multivariate linear regressions – will be presented.³ Each behavior will be discussed separately because this dissertation is examining the deterrent effect on three different behaviors. Finally, this section will conclude with a discussion of deterrent patterns observed across the three behaviors.

³ Because the dependent variables were positively skewed, this dissertation also examined the data using tobit regressions (Breen, 1996). None of the variables were affected.

Table 3 reports descriptive values for demographic variables and any other variables that are shared between the three scenarios. For the 326 respondents, the average age was 33 ($SD = 11.07$), and 84% of the sample was male. The largest portion of respondents was African American (46%), followed by 31% Caucasian, and the remainder of the sample reported being Hispanic, mixed race, or other. Only 2.4% opted to complete the Spanish version of the survey. The highest level of education that most of the participants completed was high school (64%) and the majority of respondents were single (64%). The average weekly income reported was \$400 with over half of the sample reporting that they earned over \$360 a week. The average amount of time incarcerated at Work Release was slightly under 5 weeks. Additionally, inmates listened to the radio and watched television on a weekly basis more often than reading newspapers, magazines, or surfing the Internet. Several indices were also created to measure perceived media helpfulness, perceived media credibility, impulsivity, and religiosity. Participants perceived media credibility ($\bar{X} = 2.46$) to be slightly higher than that of media helpfulness ($\bar{X} = 2.21$). The average level of religiosity reported was 3.57, and the average level of impulsivity was 2.96, indicating that as a group, the inmates were moderately impulsive and tended to see religion as an important aspect of their lives.

There were a few variables – including income and the number of times in the past five years that respondents had driven drunk; purchased illegal drugs; taken something from a store without paying for it; hurt or threatened to hurt someone with a weapon; acted loud, rowdy, or unruly in a public place; driven a car without the owner's permission; broken into a house or building; vandalized someone's property; driven without a license; and started a fistfight – that contained extreme outliers (e.g., 1,000,000 times having previously driven drunk in the past five

years). These extreme values had marked effects on empirical analyses and thus were recoded to the 95th percentile. The next section includes analyses for the drunk driving behavior.

Table 3 Descriptive Results for Demographic and Shared Variables between the Scenarios

Variable	Mean	SD
Gender (0=male, 1=female)	0.16	0.37
Age	33.37	11.07
Weekly Income	400.82	308.55
Incarceration Length	4.73	6.21
Weekly TV Consumption	23.68	22.95
Weekly Radio Consumption	33.32	35.50
Weekly Newspaper Consumption	8.75	13.68
Weekly Magazine Consumption	8.22	13.50
Weekly Internet Consumption	7.96	19.53
Media Helpfulness Index	2.21	0.89
Media Credibility Index	2.46	0.64
Impulsivity Index	2.96	0.71
Religious Salience Index	3.57	1.06
Certainty of Punishment Manipulation (0=low, 1=high)	0.49	0.50
Severity of Punishment Manipulation (0=low, 1=high)	0.50	0.50
Spanish Version (0=no, 1=yes)	0.02	0.15

	Frequency	Percent
Race		
African American	149	45.7
Caucasian	102	31.3
Hispanic	45	13.8
Mixed Race	14	4.3
Other	16	4.9
Marital Status		
Single	208	63.8
Married	63	19.3
Divorced	45	13.8
Widowed	9	2.8
Education Level		
Middle School	30	9.2
High School	207	63.5
Some College	72	22.1
College Graduate	14	4.3

Analyses for the Drunk Driving Behavior

Table 4 reports means and standard deviations for key variables in the drunk driving scenario. A substantial number of participants indicated there was a possibility they would drive home under the influence of alcohol if they found themselves in the situation described in the hypothetical vignette. The average likelihood of offending for all respondents was 38%. Many of the respondents also had previous experiences driving when they believed that their blood alcohol level was above the legal limit. The average number of occasions that inmates admitted to having previously driven while under the influence of alcohol in the past 5 years was 17, with nearly 20% admitting they had done so on more than 80 occasions (not reported in the table). Personal experiences with punishment, being arrested for driving while under the influence, were rather small with 85% reporting zero times of being arrested for driving under the influence. By and large, when participants drove while intoxicated, few of them actually experienced punishment. Participants avoided punishment approximately 17 times, with 10% of the sample avoiding a DUI arrest more than 90 times in the past five years.

Indices for personal punishment and punishment avoidance experiences with other crimes were also created for each scenario. Findings indicate much higher values for the personal punishment avoidance experiences with other crimes ($\bar{X} = 260.59$) compared with that of receiving punishment ($\bar{X} = 1.91$). Respondents were also asked to report the percentage of people known personally who have ever been charged with drunk driving. The average for vicarious experiences with punishment was approximately 16%. Vicarious experience with avoiding punishment was significantly higher with an average of 30%. As separate measures of an individual's vicarious experiences, respondents were also asked to estimate on a 5-point scale

their experiences with punishment ($\bar{X} = 2.68$) and punishment avoidance ($\bar{X} = 1.02$) beyond their social circle. On average, the respondents estimated the certainty of punishment under the circumstances described in the vignette at 47%. Most of the respondents indicated that the hypothetical scenario was realistic ($\bar{X} = 41.39$). And finally, respondents did not feel as though they would greatly benefit from driving home in the given situation ($\bar{X} = 24.68$), nor did they report strong feelings of shame ($\bar{X} = 35.32$). On the other hand, there was a fairly strong sense that driving drunk would be morally wrong ($\bar{X} = 70.00$).

Table 4 Scenario Specific Descriptive Results: Drunk Driving

Variable	Mean	SD
Likelihood of Offending	37.85	34.87
Personal Punishment (drunk driving)	0.20	0.53
Personal Punishment (other crimes)	1.91	3.26
Personal Punishment Avoidance (drunk driving)	16.75	31.82
Personal Punishment Avoidance (other crimes)	260.59	503.43
Vicarious Punishment	15.90	20.59
Vicarious Punishment Beyond Social Circle	2.68	1.03
Vicarious Punishment Avoidance	29.49	25.21
Vicarious Punishment Avoidance Beyond Social Circle	1.02	0.85
Certainty of Punishment	47.49	27.09
Extralegal Benefits	24.68	29.44
Shame (extralegal costs)	35.32	35.87
Morally Wrong (extralegal costs)	70.00	34.83
Realism of the Hypothetical Scenario	41.39	35.93

Table 5 reports zero-order correlations between the variables in this study. Consistent with Stafford and Warr's (1993) reconceptualization of deterrence, intentions to drive drunk under the hypothetical vignette significantly increased with several measures of avoiding punishment: personal experiences with avoiding punishment (drunk driving), personal punishment avoidance experiences with other crimes, and vicarious experiences with avoiding punishment beyond the respondent's social circle. However, contrary to Stafford and Warr's (1993) restatement, neither form of prior punishment (personal or vicarious) appeared to

Table 5 Zero-Order Correlations between Dimensions of Deterrence, Rational Choice, Individual Differences, and Controls for Drunk Driving (N=326)

	y ₁	x ₁	x ₂	x ₃	x ₄	x ₅	x ₆	x ₇	x ₈	x ₉	x ₁₀	x ₁₁	x ₁₂	x ₁₃	x ₁₄	x ₁₅	x ₁₆
Likelihood of Offending (y ₁)	1.00																
Personal Punishment Drunk Driving (x ₁)	-.02	1.00															
Personal Punishment Other Crimes (x ₂)	.12*	.01	1.00														
Personal Punishment Avoidance DD (x ₃)	.23*	.20*	.22*	1.00													
Personal Punishment Avoidance Other (x ₄)	.18*	-.05	.25*	.30*	1.00												
Vicarious Punishment (x ₅)	.19*	.15*	.18*	.20*	.10	1.00											
Vicarious Punishment Avoidance (x ₆)	.09	.02	.02	.19*	.22*	-.08	1.00										
Vicarious Punishment 2 (x ₇)	-.08	-.03	-.02	.02	.05	.19*	.00	1.00									
Vicarious Punishment Avoidance 2 (x ₈)	.14*	.04	.06	.07	.04	-.01	.15*	-.49*	1.00								
Certainty of Punishment (x ₉)	.04	.03	-.06	-.09	-.03	.02	.01	.12*	-.06	1.00							
Extralegal Benefits (x ₁₀)	.36*	-.05	-.01	.05	.08	.05	.06	-.14*	.13*	-.08	1.00						
Shame (x ₁₁)	-.22*	-.01	-.08	-.22*	-.27*	-.09	-.15*	-.04	-.08	.13*	-.23*	1.00					
Morally wrong (x ₁₂)	-.09	-.08	-.03	-.07	-.00	.15*	.02	.24*	-.05	.21*	-.19*	.25*	1.00				
Realism of the Hypothetical Scenario (x ₁₃)	.45*	.14*	.10	.25*	.08	.25*	.09	-.02	.11*	.10	.22*	-.10	.06	1.00			
Impulsivity Index (x ₁₄)	.23*	-.05	.06	.17*	.18*	.08	.17*	-.03	.06	.03	.09	-.11*	-.02	.09	1.00		
Religious Salience Index (x ₁₅)	-.17*	-.10	-.06	-.16*	-.12*	.05	-.10	.10	-.03	.05	-.09	.16*	.20*	-.18*	-.20*	1.00	
Certainty of Punishment Manipulation (x ₁₆)	.15*	-.09	.02	.06	.04	-.05	-.01	.08	-.08	.05	-.00	-.60	.01	.13*	.11*	.06	1.00
Severity of Punishment Manipulation (x ₁₇)	-.01	.01	-.06	-.04	.01	-.08	-.06	.13*	-.05	-.00	-.07	-.02	.00	-.06	-.02	.02	-.01
Spanish Version (x ₁₈)	.05	.05	-.01	.06	-.06	.03	-.03	-.18*	.07	.04	-.01	.10	.02	.11*	.15*	-.20*	-.04
Weekly TV Consumption (x ₁₉)	-.04	-.04	.01	-.08	-.10	-.03	-.06	-.12*	-.04	.00	-.01	.08	-.02	-.11*	.02	.11*	.04
Weekly Radio Consumption (x ₂₀)	-.01	-.03	.00	.01	.02	-.02	.08	.04	-.11*	-.02	.03	-.01	-.06	-.06	.06	-.08	-.06
Weekly Newspaper Consumption (x ₂₁)	-.09	-.09	.02	-.11	-.09	-.09	-.01	-.04	-.04	-.00	-.08	.12*	-.04	-.09	-.04	.08	-.03
Weekly Magazine Consumption (x ₂₂)	-.05	-.08	-.01	-.12*	-.07	-.07	.01	-.03	-.12*	-.01	-.06	.05	-.06	-.06	.00	-.05	-.09
Weekly Internet Consumption (x ₂₃)	-.08	-.09	-.11	-.11	-.07	-.10	-.07	.06	-.08	.08	-.05	.18*	.04	.01	.01	.05	-.02
Media Helpfulness Index (x ₂₄)	.07	.00	.14*	-.00	.04	-.01	-.06	-.17*	.08	-.04	.03	-.06	-.11	-.05	.06	-.03	-.00
Media Credibility Index (x ₂₅)	.13*	-.06	.07	.01	.09	.09	-.14*	.00	-.06	.07	-.02	.05	-.07	.09	-.03	.02	.01
Gender (x ₂₆)	-.04	-.05	-.05	-.07	.07	.10	-.01	.10	.06	.03	-.02	.06	.06	-.08	.11	.07	-.03
Age (x ₂₇)	-.11	.08	-.09	-.02	-.12*	-.04	-.08	-.06	.06	.02	-.06	.07	.02	-.01	.04	-.02	.01
Weekly Income (x ₂₈)	.03	.07	.05	.04	-.01	-.02	.14*	.10	-.07	.12*	-.10	-.02	.04	.05	-.02	-.17*	.09
Incarceration Length (x ₂₉)	-.04	.19*	-.02	.01	.01	.08	.01	.01	.12*	-.02	.10	-.01	-.06	.10	.01	.01	.00
African American (x ₃₀)	.05	-.02	-.07	-.10	-.11	-.07	-.14*	-.17*	-.02	-.08	.18*	-.11*	-.25*	-.04	-.14*	.18*	.04
Caucasian (x ₃₁)	.05	.06	.09	.16*	.16*	.10	.11*	.15*	.05	.03	-.17*	.01	.17*	.09	.11*	-.13*	-.00
Marital Status (x ₃₂)	.11*	-.04	.07	-.02	.03	.03	-.04	.04	-.01	-.11*	.06	-.16*	-.00	.06	-.13*	.01	.03
Education Level (x ₃₃)	-.01	.06	-.05	.07	.08	-.01	.08	.02	.09	.03	-.02	.01	.02	.05	.01	-.07	-.06

	X ₁₇	X ₁₈	X ₁₉	X ₂₀	X ₂₁	X ₂₂	X ₂₃	X ₂₄	X ₂₅	X ₂₆	X ₂₇	X ₂₈	X ₂₉	X ₃₀	X ₃₁	X ₃₂	X ₃₃
Severity of Punishment Manipulation (x ₁₇)	1.00																
Spanish Version (x ₁₈)	.00	1.00															
Weekly TV Consumption (x ₁₉)	-.10	-.03	1.00														
Weekly Radio Consumption (x ₂₀)	-.06	-.06	.33*	1.00													
Weekly Newspaper Consumption (x ₂₁)	-.03	-.04	.41*	.27*	1.00												
Weekly Magazine Consumption (x ₂₂)	-.03	-.02	.36*	.35*	.76*	1.00											
Weekly Internet Consumption (x ₂₃)	.01	-.05	.22*	.26*	.40*	.31*	1.00										
Media Helpfulness Index (x ₂₄)	.01	.09	.08	-.03	.14*	.10	.02	1.00									
Media Credibility Index (x ₂₅)	-.04	.11	.04	-.02	.14*	.15*	.01	.23*	1.00								
Gender (x ₂₆)	-.10	-.07	.09	.04	.08	.03	.08	.05	-.05	1.00							
Age (x ₂₇)	-.07	-.02	.11	-.09	-.03	-.13*	-.04	.00	-.03	.07	1.00						
Weekly Income (x ₂₈)	-.00	-.09	.06	.01	.04	.04	.13*	.08	-.07	-.22*	.05	1.00					
Incarceration Length (x ₂₉)	-.05	.01	.01	.01	-.08	-.05	-.10	-.08	-.01	-.05	.02	.04	1.00				
African American (x ₃₀)	.01	-.15*	.19*	-.04	.09	.12*	-.02	.03	.13*	.04	-.06	-.22*	.05	1.00			
Caucasian (x ₃₁)	.00	-.11	-.12*	-.02	-.11	-.16*	-.03	.08	-.05	.01	.07	.18*	-.00	-.62*	1.00		
Marital Status (x ₃₂)	-.01	-.13*	-.06	-.01	-.04	.04	-.12*	-.02	.00	-.09	-.31*	-.04	.04	.12*	-.02	1.00	
Education Level (x ₃₃)	-.02	-.14*	-.10	-.12*	-.04	-.06	.15*	-.03	-.07	-.07	.04	.21*	.03	-.15*	.12*	-.17*	1.00

influence future offending. In fact, a positive relationship was found between an individual's vicarious experiences with punishment and his or her likelihood of offending. Additionally, an individual's personal punishment experiences with other crimes significantly encouraged offending. Also contrary to the deterrence framework, the experimental manipulations of perceived punishment certainty and punishment severity did not seem to deter offending.

Several extralegal considerations were found to be relevant to the decision to drive drunk. The possible benefit of drinking and driving in the vignette significantly encouraged future offending while perceived shame significantly decreased the likelihood of offending. As shown in Table 5, intentions to offend were significantly higher for respondents who were more impulsive, had higher perceptions of media credibility, and those who were less religious. The more realistic respondents perceived the hypothetical vignette to be, the more likely they were to engage in offending. Finally, marital status was found to be significantly related to future offending. Single people had a higher likelihood of driving home drunk in the scenario.

Stafford and Warr (1993) predict that an individual's personal and vicarious experiences with punishment and punishment avoidance will influence his or her perceived risk of apprehension, thereby, influencing the likelihood of future offending. To more rigorously test these hypotheses this study computed regression equations with key dimensions of deterrence, rational choice, individual differences, and other control variables. Table 6 presents the multivariate results of regressing likelihood of offending on the key dimensions of deterrence.

The findings from Table 6 indicate partial support for Stafford and Warr's (1993) model. As predicted by the reconceptualization, the likelihood of driving drunk increases with greater personal punishment avoidance experiences. Contrary to Stafford and Warr's (1993) reconceptualization, both personal and vicarious experiences with punishment do not

significantly influence an individual's likelihood of offending. In fact, a positive relationship was found between an individual's vicarious experiences with punishment and his or her likelihood of driving drunk. This study included an experimental manipulation for the certainty of punishment. Contrary to perceptual deterrence literature, findings indicate a positive relationship between the certainty of punishment and the likelihood of offending, that is, when the certainty of punishment was higher respondents tended to report a 10% greater likelihood that they would drive home drunk. Other measures of certainty and the experimental manipulation of punishment severity were not found to be significant. Overall, approximately 12% of the variation in the dependent variable (likelihood of driving drunk) was explained by the independent variables in the model.

Table 6 Regression of the Likelihood of Driving Drunk on Dimensions of Deterrence

	B	Beta	Sig.
Personal Punishment (drunk driving)	-4.99	-.08	.17
Personal Punishment (other crimes)	.26	.02	.66
Personal Punishment Avoidance (drunk driving)	.18	.17	.00
Personal Punishment Avoidance (other crimes)	.01	.08	.15
Vicarious Punishment	.33	.20	.00
Vicarious Punishment Beyond Social Circle	-3.15	-.09	.14
Vicarious Punishment Avoidance	.08	.06	.27
Vicarious Punishment Avoidance Beyond Social Circle	3.81	.09	.13
Certainty of Punishment	.11	.08	.11
Certainty of Punishment Manipulation (0=low, 1=high)	10.31	.15	.01
Severity of Punishment Manipulation (0=low, 1=high)	2.23	.03	.55
Constant = 18.754			
F = 4.995			
R ² = 0.121			

Table 7 presents the multivariate results of regressing likelihood of driving drunk on dimensions of deterrence, rational choice, individual differences, and other controls. Findings indicate no support for the deterrence doctrine. Across the dimensions of deterrence, results

Table 7 Regression of the Likelihood of Driving Drunk on Dimensions of Deterrence, Rational Choice, Individual Differences and Controls

	B	Beta	Sig.
<u>Dimensions of Deterrence</u>			
Personal Punishment (drunk driving)	-3.01	-.05	.42
Personal Punishment (other crimes)	-.08	-.01	.89
Personal Punishment Avoidance (drunk driving)	.06	.05	.40
Personal Punishment Avoidance (other crimes)	.00	.01	.89
Vicarious Punishment	.18	.11	.09
Vicarious Punishment Beyond Social Circle	-.71	-.02	.77
Vicarious Punishment Avoidance	.01	.01	.92
Vicarious Punishment Avoidance Beyond Social Circle	.27	.01	.92
Certainty of Punishment	.02	.02	.76
Certainty of Punishment Manipulation (0=low, 1=high)	3.14	.05	.44
Severity of Punishment Manipulation (0=low, 1=high)	-.86	-.01	.82
<u>Rational Choice</u>			
Extralegal Benefits	.25	.22	.00
Shame	-.05	-.05	.44
Morally Wrong	-.10	-.10	.13
<u>Individual Differences</u>			
Impulsivity Index	8.19	.18	.00
Religious Salience Index	-.80	-.02	.68
<u>Demographics</u>			
Gender (0=male, 1=female)	-1.63	-.02	.78
Age	-.18	-.06	.32
Weekly Income	-.00	-.02	.75
Incarceration Length	-.73	-.13	.02
African American (0=no, 1=yes)	2.40	.03	.65
Caucasian (0=no, 1=yes)	10.20	.14	.05
Marital Status (0=not single, 1=single)	2.86	.04	.51
Education Level	1.31	.03	.66
<u>Other Controls</u>			
Weekly TV Consumption	.10	.06	.35
Weekly Radio Consumption	-.01	-.01	.92
Weekly Newspaper Consumption	-.31	-.13	.19
Weekly Magazine Consumption	.18	.08	.45
Weekly Internet Consumption	-.04	-.02	.72
Media Helpfulness Index	.21	.01	.93
Media Credibility Index	2.62	.05	.44
Realism of the Hypothetical Scenario	.41	.42	.00
Spanish Version (0=no, 1=yes)	3.31	.01	.88
Constant = -8.557			
F = 5.159			
R ² = 0.386			

showed no significant relationship between an individual's likelihood of offending and any measure of personal and vicarious experience with punishment and punishment avoidance. This study also expected to find significant relationships between the dependent variable and measures of perceived certainty and severity of punishment but these considerations were not significantly related to intentions to drive drunk.

Consistent with this study's hypotheses, however, one element of rational choice was found to influence the dependent variable in the predicted direction. That is, greater predicted enjoyment increased the likelihood of driving home drunk. Several additional results are less directly relevant to deterrence or rational choice models but are worth noting. As shown in Table 7, intentions to drive drunk were significantly higher for respondents who were Caucasian, more impulsive, and for those who were incarcerated for shorter periods of time. The more realistic the hypothetical scenario, the more likely the respondent would be to engage in future offending. Finally, other elements of rational choice, individual differences, demographics, and other controls were unrelated to the dependent variable. The next section presents the findings for the drug purchase scenario.

Analyses for the Drug Purchase Behavior

Table 8 reports on the main independent and dependent variables for the drug purchase scenario. The average likelihood of offending for all respondents in the drug purchase hypothetical scenario was 25%. Again, participants admitted to substantial activity in the purchase of illegal drugs. The average number of times that inmates reported having previously purchased illegal drugs in the past five years was over two hundred, with close to 10% of the sample purchasing illegal drugs over 1000 times (not reported in the table). Personal experiences with punishment, the number of times arrested for illegal drug purchase in the past five years, were considerable with 30% of the sample reporting having been arrested one time or more. The average number of times participants bought illegal drugs without getting caught was nearly 200.

Findings indicated a much higher value for personally avoiding punishment for other crimes ($\bar{X} = 80.19$) compared with that of receiving punishment for other crimes ($\bar{X} = 1.55$). Respondents were also asked to report the percentage of people known personally who have ever been charged with buying illegal drugs. The average for vicarious experiences with punishment was approximately 27%. Vicarious experience with avoiding punishment was slightly lower with an average of 25%. As separate measures of an individual's vicarious experiences, respondents were also asked to estimate on a 5-point scale their experiences with punishment ($\bar{X} = 2.84$) and punishment avoidance ($\bar{X} = 0.96$) beyond their social circle. On average, the respondents estimated the certainty of punishment under the circumstances described in the vignette at 69%. The average response for the realism of the scenario was 29.17 they would find themselves in the situation described. Finally, respondents did not feel as though they would greatly benefit from

purchasing illegal drugs in the given situation ($\bar{X} = 16.32$), and they tended to believe it would be morally wrong ($\bar{X} = 71.93$) and they would feel ashamed ($\bar{X} = 57.76$).

Table 8 Scenario Specific Descriptive Results: Purchasing Illegal Drugs

Variable	Mean	SD
Likelihood of Offending	25.12	33.36
Personal Punishment (drug purchase)	0.56	1.27
Personal Punishment (other crimes)	1.55	2.71
Personal Punishment Avoidance (drug purchase)	198.17	450.89
Personal Punishment Avoidance (other crimes)	80.19	122.28
Vicarious Punishment	27.47	30.08
Vicarious Punishment Beyond Social Circle	2.84	1.07
Vicarious Punishment Avoidance	24.60	25.08
Vicarious Punishment Avoidance Beyond Social Circle	0.96	0.91
Certainty of Punishment	69.42	32.11
Extralegal Benefits	16.32	28.04
Shame (extralegal costs)	57.76	41.27
Morally Wrong (extralegal costs)	71.93	37.49
Realism of the Hypothetical Scenario	29.17	34.74

Table 9 reports zero-order correlations between the key variables in this study. Consistent with Stafford and Warr's (1993) reconceptualization of deterrence, intentions to purchase illegal drugs under the hypothetical vignette significantly decreased with the certainty of punishment for getting caught by corrections. However, contrary to Stafford and Warr's (1993) restatement, forms of prior punishment (personal punishment for drug purchase, personal punishment for other crimes, vicarious punishment, and vicarious punishment experiences beyond the respondent's social circle) and punishment avoidance experiences (personal punishment avoidance for drug purchase, personal punishment avoidance for other crimes, vicarious punishment avoidance, and vicarious punishment avoidance beyond the respondent's social circle) did not influence offending. Also contrary to the deterrence framework, the experimental manipulations of perceived punishment certainty and punishment severity were unrelated to offending.

Several extralegal considerations were found to be salient to decisions about purchasing illegal drugs. The level of perceived benefit of purchasing drugs in the vignette significantly encouraged future offending while perceived shame and moral wrongfulness both significantly decreased the likelihood of offending. Several additional results are less directly related to a deterrence framework but are notable. As shown in Table 9, intentions to offend were significantly higher for females, African Americans, and respondents who were less religious. Finally, the more realistic respondents perceived the hypothetical vignette, the more likely they were to engage in offending.

Stafford and Warr (1993) predict that an individual's personal and vicarious experiences with punishment and punishment avoidance will influence his or her likelihood of offending by affecting perceptions of punishment risk. According to Table 9, several additional variables were found to significantly influence the perceived certainty of punishment. Consistent with Stafford and Warr's predictions, perceived certainty of punishment was greater for those individuals who had more vicarious experiences of punishment from beyond their social circle. The extralegal benefits and costs associated with the behavior in the scenario were all significantly related to perceived certainty of punishment in the predicted directions, that is the perceived certainty of punishment was significantly higher for respondents who felt more shameful, more moral wrongfulness, and for those who would experience less enjoyment. The more realistic the hypothetical scenario, the less likely that individuals believed they would be caught and punished. Several measures of media consumption (weekly television and radio consumption) as well as media helpfulness were negatively related to perceptions of punishment certainty. Perceived certainty of punishment was higher for Caucasians and those with higher education

Table 9 Zero-Order Correlations between Dimensions of Deterrence, Rational Choice, Individual Differences, and Controls for Purchasing Illegal Drugs (N=326)

	y ₁	x ₁	x ₂	x ₃	x ₄	x ₅	x ₆	x ₇	x ₈	x ₉	x ₁₀	x ₁₁	x ₁₂	x ₁₃	x ₁₄	x ₁₅	x ₁₆
Likelihood of Offending (y ₁)	1.00																
Personal Punishment Drug Purchase (x ₁)	.03	1.00															
Personal Punishment Other Crimes (x ₂)	.01	.29*	1.00														
Personal Punishment Avoidance DP(x ₃)	.04	.20*	.17*	1.00													
Personal Punishment Avoidance Other (x ₄)	.09	.10	.27*	.43*	1.00												
Vicarious Punishment (x ₅)	.08	.23*	.13*	.31*	.20*	1.00											
Vicarious Punishment Avoidance (x ₆)	-.05	-.04	.03	.07	.15*	-.25*	1.00										
Vicarious Punishment 2 (x ₇)	-.08	.06	.01	.03	.04	.26*	-.03	1.00									
Vicarious Punishment Avoidance 2 (x ₈)	.03	-.02	.06	.11*	.08	.02	.13*	-.49*	1.00								
Certainty of Punishment (x ₉)	-.16*	.05	.02	.05	.02	.11	-.10	.20*	-.05	1.00							
Extralegal Benefits (x ₁₀)	.53*	.02	.05	.20*	.19*	.09	.06	-.02	.00	-.28*	1.00						
Shame (x ₁₁)	-.22*	-.01	-.09	-.12*	-.16*	-.08	-.14*	.17*	-.14*	.36*	-.29*	1.00					
Morally Wrong (x ₁₂)	-.21*	.04	-.03	-.04	-.12*	.10	-.07	.18*	.01	.40*	-.27*	.51*	1.00				
Realism of the Hypothetical Scenario (x ₁₃)	.26*	.04	.06	.04	.06	.01	.07	-.01	-.08	-.11*	.34*	-.06	-.02	1.00			
Impulsivity Index (x ₁₄)	.08	.05	.04	.17*	.17*	.13*	.18*	-.06	.00	.01	.16*	-.09	-.10	.11	1.00		
Religious Salience Index (x ₁₅)	-.16*	.03	-.11*	-.08	-.24*	.01	-.09	.08	.00	.12*	-.17*	.26*	.28*	-.08	-.20*	1.00	
Certainty of Punishment Manipulation (x ₁₆)	.05	-.04	.03	.05	.01	.01	.03	.02	.02	-.07	.06	-.11*	-.04	.07	.11*	.06	1.00
Severity of Punishment Manipulation (x ₁₇)	-.06	-.01	-.06	.02	-.05	-.04	-.10	.10	.01	.03	.01	.08	.01	-.06	-.02	.02	-.01
Spanish Version (x ₁₈)	-.04	-.01	-.00	-.06	-.01	-.01	-.02	-.07	-.04	-.01	-.07	.05	-.07	.08	.15*	-.20*	-.04
Weekly TV Consumption (x ₁₉)	.06	-.01	.01	-.10	-.06	.02	.01	-.09	-.00	-.18*	.03	-.05	-.01	.12*	.02	.11*	.04
Weekly Radio Consumption (x ₂₀)	.03	-.02	.00	-.00	.08	.09	.03	-.02	-.06	-.13*	-.02	-.07	-.11	.06	.06	-.08	-.06
Weekly Newspaper Consumption (x ₂₁)	.01	.01	.01	-.08	-.10	-.09	-.02	-.12*	-.06	-.10	.02	-.04	-.07	.05	-.04	.08	-.03
Weekly Magazine Consumption (x ₂₂)	-.04	-.03	-.02	-.07	-.08	-.01	-.00	-.07	-.14*	-.07	.03	-.07	-.12*	.08	.00	-.05	-.09
Weekly Internet Consumption (x ₂₃)	-.03	-.10	-.10	-.08	-.03	-.12*	-.02	-.03	-.17*	-.02	-.03	.06	-.02	.10	.01	.05	-.02
Media Helpfulness Index (x ₂₄)	.02	.14*	.10	.03	.06	-.12*	.01	-.20*	.08	-.17*	.13*	-.07	-.08	.08	.06	-.03	-.00
Media Credibility Index (x ₂₅)	-.01	.06	.05	.10	-.01	.11*	-.14*	.05	-.12*	-.01	.04	.02	-.01	.10	-.03	.02	.01
Gender (x ₂₆)	.12*	.03	-.08	.10	-.05	.12*	.02	.13*	.01	.02	.02	.09	.08	.09	.11	.07	-.03
Age (x ₂₇)	.00	-.07	-.06	-.10	-.13*	-.11	-.08	-.04	-.02	-.02	-.03	.16*	.07	-.00	.04	-.02	.01
Weekly Income (x ₂₈)	-.01	.04	.05	-.03	.09	-.15*	.11	.01	-.01	.09	-.02	-.02	-.05	-.08	-.02	-.17*	.09
Incarceration Length (x ₂₉)	-.04	-.02	.02	.02	-.02	-.03	.01	-.04	.11	-.11*	.01	-.07	-.09	-.02	.01	.01	.00
African American (x ₃₀)	.18*	-.04	-.08	-.10	-.10	.02	-.02	-.12*	.08	-.26*	.12*	-.16*	-.18*	.08	-.14*	.18*	.04
Caucasian (x ₃₁)	-.11*	.05	.09	.15*	.14*	.04	-.07	.04	.07	.13*	-.04	.07	.18*	-.19*	.11*	-.12*	-.00
Marital Status (x ₃₂)	.01	.07	.04	.02	.03	.11*	.00	.07	.03	-.09	.02	-.12*	-.02	-.03	-.13*	.01	.03
Education Level (x ₃₃)	-.05	-.06	-.02	.06	.13*	-.09	.04	.03	.01	.11*	.03	.03	-.05	-.07	.01	-.07	-.06

	X ₁₇	X ₁₈	X ₁₉	X ₂₀	X ₂₁	X ₂₂	X ₂₃	X ₂₄	X ₂₅	X ₂₆	X ₂₇	X ₂₈	X ₂₉	X ₃₀	X ₃₁	X ₃₂	X ₃₃
Severity of Punishment Manipulation (x ₁₇)	1.00																
Spanish Version (x ₁₈)	.00	1.00															
Weekly TV Consumption (x ₁₉)	-.10	-.03	1.00														
Weekly Radio Consumption (x ₂₀)	-.06	-.06	.33*	1.00													
Weekly Newspaper Consumption (x ₂₁)	-.03	-.04	.41*	.27*	1.00												
Weekly Magazine Consumption (x ₂₂)	-.03	-.02	.36*	.35*	.76*	1.00											
Weekly Internet Consumption (x ₂₃)	.01	-.05	.22*	.26*	.40*	.31*	1.00										
Media Helpfulness Index (x ₂₄)	.01	.09	.08	-.03	.14*	.10	.02	1.00									
Media Credibility Index (x ₂₅)	-.04	.11	.04	-.02	.14*	.15*	.01	.23*	1.00								
Gender (x ₂₆)	-.10	-.07	.09	.04	.08	.03	.08	.05	-.05	1.00							
Age (x ₂₇)	-.07	-.02	.11	-.09	-.03	-.13*	-.04	.00	-.03	.07	1.00						
Weekly Income (x ₂₈)	-.00	-.09	.06	.01	.04	.04	.13*	.08	-.07	-.22*	.05	1.00					
Incarceration Length (x ₂₉)	-.05	.01	.01	.01	-.08	-.05	-.10	-.08	-.01	-.05	.02	.04	1.00				
African American (x ₃₀)	.01	-.15*	.19*	-.04	.09	.12*	-.02	.03	-.13*	.04	-.06	-.22*	.05	1.00			
Caucasian (x ₃₁)	.00	-.11	-.12*	-.02	-.11	-.16*	-.03	.08	-.05	.01	.07	.18*	-.00	-.62*	1.00		
Marital Status (x ₃₂)	-.01	-.13*	-.06	-.00	-.04	.04	-.12*	-.02	.00	-.09	-.31*	-.04	.04	.12*	-.02	1.00	
Education Level (x ₃₃)	-.02	-.14*	-.10	-.12*	-.04	-.06	.15*	-.03	-.07	-.07	.04	.21*	.03	-.15*	.12*	-.17*	1.00

levels. Additionally, punishment certainty decreased the longer respondents were incarcerated. Finally, as religiosity increased so did perceived certainty of punishment.

As with the prior analysis of drunk driving, a more rigorous test of the study hypotheses was conducted by computing regression equations on dimensions of deterrence, rational choice, individual differences, and other controls for intentions to purchase illegal drugs. Table 10 begins this analysis by presenting the multivariate results of regressing likelihood of purchasing illegal drugs on dimensions of deterrence.

Table 10 Regression of the Likelihood of Purchasing Illegal Drugs on Dimensions of Deterrence

	B	Beta	Sig.
Personal Punishment (drug purchase)	.48	.02	.76
Personal Punishment (other crimes)	-.32	-.03	.66
Personal Punishment Avoidance (drug purchase)	.00	.00	.99
Personal Punishment Avoidance (other crimes)	.03	.10	.13
Vicarious Punishment	-.08	.07	.28
Vicarious Punishment Beyond Social Circle	-2.22	-.07	.31
Vicarious Punishment Avoidance	-.08	-.06	.29
Vicarious Punishment Avoidance Beyond Social Circle	-.15	-.00	.95
Certainty of Punishment	-.16	-.15	.01
Certainty of Punishment Manipulation (0=low, 1=high)	2.80	.04	.46
Severity of Punishment Manipulation (0=low, 1=high)	-2.74	-.04	.47
Constant = 40.511			
F = 1.503			
R ² = 0.017			

Table 10 indicates minimal support for Stafford and Warr's (1993) reconceptualization. In support of the model, the likelihood of purchasing illegal drugs significantly decreased with greater perceived certainty of punishment. Contrary to the reconceptualization, measures of personal and vicarious experiences with punishment and punishment avoidance were not found to significantly influence an individual's likelihood of offending. Additionally, this study also expected to find relationships with the dependent variable and the experimental manipulations for punishment certainty and severity but did not.

Table 11 reports the multivariate regression analysis of an individual's likelihood of purchasing illegal drugs on dimensions of deterrence, rational choice, individual differences, and controls. Findings indicated no support for the deterrence doctrine. In particular, the predicted relationships were not found among the dimensions of personal and vicarious experiences with punishment and punishment avoidance. Measures of punishment severity and certainty also failed to predict an individual's likelihood of purchasing illegal drugs.

Consistent with expanding the deterrence framework, several extralegal considerations were found to influence future offending. The chance that participants would experience shame was inversely related to the likelihood of purchasing illegal drugs: as the chance that an individual would experience shame increased, his or her likelihood of offending decreased. In contrast, greater predicted enjoyment raised the likelihood of purchasing illegal drugs. As shown in Table 11, intentions to offend were significantly higher for respondents who were female and for those who rated the realism of the scenario higher. Further, race was nearly significant ($p = .06$). African American respondents were more likely to purchase illegal drugs in the scenario. The next section presents the analyses for the shoplifting behavior.

Table 11 Regression of the Likelihood of Purchasing Illegal Drugs on Dimensions of Deterrence, Rational Choice, Individual Differences, and Controls

	B	Beta	Sig.
<u>Dimensions of Deterrence</u>			
Personal Punishment (drug purchase)	.74	.03	.61
Personal Punishment (other crimes)	-.44	-.04	.53
Personal Punishment Avoidance (drug purchase)	.00	.03	.63
Personal Punishment Avoidance (other crimes)	-.02	-.08	.28
Vicarious Punishment	-.05	-.05	.51
Vicarious Punishment Beyond Social Circle	-.96	-.03	.69
Vicarious Punishment Avoidance	-.14	-.11	.09
Vicarious Punishment Avoidance Beyond Social Circle	1.03	.03	.71
Certainty of Punishment	.08	.07	.30
Certainty of Punishment Manipulation (0=low, 1=high)	-3.01	-.05	.46
Severity of Punishment Manipulation (0=low, 1=high)	-2.62	-.04	.51
<u>Rational Choice</u>			
Extralegal Benefits	.56	.48	.00
Shame	-.11	-.14	.05
Morally Wrong	-.07	-.08	.28
<u>Individual Differences</u>			
Impulsivity Index	-1.05	-.02	.71
Religious Salience Index	-.78	-.03	.70
<u>Demographics</u>			
Gender (0=male, 1=female)	17.87	.19	.00
Age	.23	.08	.21
Weekly Income	.01	.09	.17
Incarceration Length	-.44	-.08	.17
African American (0=no, 1=yes)	10.09	.15	.06
Caucasian (0=no, 1=yes)	.21	.00	.97
Marital Status (0=not single, 1=single)	4.67	.07	.30
Education Level	-1.69	-.03	.58
<u>Other Controls</u>			
Weekly TV Consumption	-.02	-.01	.89
Weekly Radio Consumption	.10	.11	.10
Weekly Newspaper Consumption	-.12	-.05	.63
Weekly Magazine Consumption	-.26	-.11	.31
Weekly Internet Consumption	.05	.03	.68
Media Helpfulness Index	-2.98	-.08	.21
Media Credibility Index	-.02	.00	.99
Realism of the Hypothetical Scenario	.12	.12	.05
Spanish Version (0=no, 1=yes)	25.67	.07	.23
Constant = 25.268			
F = 4.112			
R ² = 0.321			

Analyses for the Shoplifting Behavior

Table 12 reports the means and standard deviations for each variable unique to the shoplifting scenario. A substantial number of respondents indicated that there was a possibility they would shoplift if they found themselves in the situation described in the hypothetical vignette. The average likelihood of offending for all respondents was 27%. Participants also admitted to considerable past experiences with shoplifting. The average number of times that inmates admitted to having taken something from a store without paying for it in the past 5 years was 7, with 10% admitting they had done so on more than 20 occasions (not reported in the table). Respondents also had some experiences with punishment for this offense, with 16% of the sample being arrested for shoplifting once or more. The average number of times for personally avoiding punishment was approximately 6.

As with the previous analyses, the findings indicated a higher value for personally avoiding punishment for other crimes ($\bar{X} = 6.48$) compared with that of receiving punishment ($\bar{X} = 1.86$). Respondents were also asked to report the percentage of people known personally who have ever been charged with shoplifting. The average for vicarious experiences with punishment was approximately 16%. Vicarious experience with avoiding punishment was 16% as well. As separate measures of an individual's vicarious experiences, respondents were also asked to estimate on a 5-point scale their experiences with punishment ($\bar{X} = 2.57$) and punishment avoidance ($\bar{X} = 0.86$) beyond their social circle. On average, the respondents estimated the perceived certainty of punishment under the circumstances described in the vignette at 47%. The hypothetical scenario was regarded as moderately realistic ($\bar{X} = 28.69$). Finally, respondents did

not feel as though they would greatly benefit from stealing in the given situation ($\bar{X} = 20.45$), and they tended to see the offense as morally wrong ($\bar{X} = 73.71$) and likely to generate feelings of shame ($\bar{X} = 56.81$).

Table 12 Scenario Specific Descriptive Results: Shoplifting

Variable	Mean	SD
Likelihood of Offending	26.71	32.46
Personal Punishment (shoplift)	0.25	0.71
Personal Punishment (other crimes)	1.86	3.18
Personal Punishment Avoidance (shoplift)	6.48	14.36
Personal Punishment Avoidance (other crimes)	270.07	508.75
Vicarious Punishment	15.80	24.57
Vicarious Punishment Beyond Social Circle	2.57	1.07
Vicarious Punishment Avoidance	15.93	19.79
Vicarious Punishment Avoidance Beyond Social Circle	0.86	0.96
Certainty of Punishment	46.85	31.77
Extralegal Benefits	20.45	30.70
Shame (extralegal costs)	56.81	40.42
Morally Wrong (extralegal costs)	73.71	35.72
Realism of the Hypothetical Scenario	28.69	34.87

Table 13 reports zero-order correlations between the variables in this study. Consistent with Stafford and Warr's (1993) reconceptualization of deterrence, intentions to steal under the hypothetical scenario significantly decreased with the perceived certainty of punishment. Also, in accordance with Stafford and Warr (1993), both personal and vicarious experiences with avoiding punishment significantly encouraged future offending. However, contrary to Stafford and Warr's (1993) model, neither form of prior punishment (personal or vicarious) seemed to influence offending. In fact, a positive relationship was demonstrated between vicarious punishment experiences and likelihood of offending, that is, a person's vicarious punishment experiences actually increased his or her likelihood of offending. Also contrary to the

Table 13 Zero-Order Correlations between Dimensions of Deterrence, Rational Choice, Individual Differences, and Controls for Shoplifting (N=326)

	y ₁	x ₁	x ₂	x ₃	x ₄	x ₅	x ₆	x ₇	x ₈	x ₉	x ₁₀	x ₁₁	x ₁₂	x ₁₃	x ₁₄	x ₁₅	x ₁₆
Likelihood of Offending (y ₁)	1.00																
Personal Punishment Shoplift (x ₁)	.06	1.00															
Personal Punishment Other Crimes (x ₂)	-.03	.06	1.00														
Personal Punishment Avoidance SL (x ₃)	.17*	.40*	.25*	1.00													
Personal Punishment Avoidance Other (x ₄)	.10	.00	.25*	.31*	1.00												
Vicarious Punishment (x ₅)	.18*	.21*	.16*	.25*	.13*	1.00											
Vicarious Punishment Avoidance (x ₆)	.12*	.02	-.01	.22*	.08	.00	1.00										
Vicarious Punishment 2 (x ₇)	-.09	.06	-.03	-.06	.01	.17*	-.07	1.00									
Vicarious Punishment Avoidance 2 (x ₈)	.08	-.01	.06	.12*	.13*	.13*	.22*	-.39*	1.00								
Certainty of Punishment (x ₉)	-.16*	-.03	-.08	-.18*	-.09	.01	-.13*	.18*	-.16*	1.00							
Extralegal Benefits (x ₁₀)	.39*	.06	.06	.21*	.17*	.17*	.12*	-.06	.13*	-.16*	1.00						
Shame (x ₁₁)	-.31*	-.00	-.11*	-.23*	-.12*	-.06	-.25*	.23*	-.16*	.46*	-.36*	1.00					
Morally Wrong (x ₁₂)	-.16*	.09	-.08	.01	-.07	-.02	-.12*	.16*	-.09	.26*	-.28*	.53*	1.00				
Realism of the Hypothetical Scenario (x ₁₃)	.39*	.19*	.03	.17*	.03	.09	.02	-.09	.07	-.03	.35*	-.12*	-.01	1.00			
Impulsivity Index (x ₁₄)	.19*	.13*	.02	.12*	.19*	.13*	.10	-.14*	.11	-.10	.05	-.08	-.06	.07	1.00		
Religious Salience Index (x ₁₅)	-.18*	-.01	-.08	-.17*	-.13*	.04	-.12*	.15*	-.00	.15*	-.17*	.27*	.22*	-.07	-.20*	1.00	
Certainty of Punishment Manipulation (x ₁₆)	.05	.08	-.01	.05	.04	-.02	-.02	-.00	-.03	.07	.01	-.02	-.03	.01	.11*	.05	1.00
Severity of Punishment Manipulation (x ₁₇)	-.04	-.00	-.06	-.02	.00	-.08	-.03	.11	-.02	.05	-.09	.06	.03	-.08	-.02	.02	-.01
Spanish Version (x ₁₈)	.00	-.06	.01	-.03	-.06	-.01	.06	-.12*	.02	.07	-.05	-.07	-.06	.09	.15*	-.20*	-.04
Weekly TV Consumption (x ₁₉)	.03	.10	-.01	-.06	-.10	.04	.01	.01	-.09	.12*	.06	.01	-.08	.09	.02	.11*	.04
Weekly Radio Consumption (x ₂₀)	.07	-.07	.01	-.02	.02	.07	.04	.03	-.10	.06	.13*	-.03	-.05	-.03	.06	-.08	-.06
Weekly Newspaper Consumption (x ₂₁)	-.01	.05	-.00	-.08	-.09	-.01	.06	.02	-.08	.07	.04	.02	-.00	.08	-.04	.08	-.03
Weekly Magazine Consumption (x ₂₂)	.01	-.01	-.02	-.09	-.07	-.02	.08	-.06	-.06	.04	.03	-.02	-.01	.12*	.00	-.05	-.09
Weekly Internet Consumption (x ₂₃)	-.05	-.00	-.12*	-.07	-.07	-.05	-.02	.02	-.13*	.04	-.04	.14*	.06	-.06	.01	.05	-.02
Media Helpfulness Index (x ₂₄)	.04	.04	.13*	.01	.04	-.07	-.04	-.10	.03	-.03	-.01	-.05	-.09	.12*	.06	-.03	-.00
Media Credibility Index (x ₂₅)	.00	.00	.06	.01	.08	.15*	-.07	-.02	-.01	.12*	-.07	.04	.00	.08	-.03	.02	.01
Gender (x ₂₆)	.09	.08	-.08	.00	.07	.16*	.06	.07	.07	.15*	.10	.08	.02	.08	.11	.07	-.03
Age (x ₂₇)	-.03	.07	-.09	-.07	-.12*	.03	-.12*	.00	-.07	.09	.04	.16*	.08	-.01	.04	-.02	.01
Weekly Income (x ₂₈)	-.08	-.08	.08	-.09	-.00	-.13*	-.03	.06	-.10	.04	-.02	.09	.04	-.13*	-.02	-.17*	.09
Incarceration Length (x ₂₉)	.05	-.07	.03	-.05	.02	-.05	-.02	-.01	.06	-.14*	.07	-.03	-.07	.07	.01	.01	.00
African American (x ₃₀)	.12*	-.01	-.08	-.05	-.11*	.00	.02	-.11*	.09	.00	.09	-.16*	-.22*	.09	-.14*	.18*	.04
Caucasian (x ₃₁)	-.08	.06	.09	.11*	.16*	.02	-.08	.08	-.03	-.06	-.11*	.16*	.22*	-.08	.11*	-.12*	-.00
Marital Status (x ₃₂)	.02	.05	.05	-.04	.03	.02	-.04	.04	.06	-.13*	.02	-.06	-.02	.00	-.13*	.01	.03
Education Level (x ₃₃)	-.06	-.05	-.03	.03	.09	-.02	-.09	.05	-.02	-.04	-.07	.03	.02	-.12*	.01	-.07	-.06

	X ₁₇	X ₁₈	X ₁₉	X ₂₀	X ₂₁	X ₂₂	X ₂₃	X ₂₄	X ₂₅	X ₂₆	X ₂₇	X ₂₈	X ₂₉	X ₃₀	X ₃₁	X ₃₂	X ₃₃
Severity of Punishment Manipulation (x ₁₇)	1.00																
Spanish Version (x ₁₈)	.00	1.00															
Weekly TV Consumption (x ₁₉)	-.10	-.03	1.00														
Weekly Radio Consumption (x ₂₀)	-.06	-.06	.33*	1.00													
Weekly Newspaper Consumption (x ₂₁)	-.03	-.04	.41*	.27*	1.00												
Weekly Magazine Consumption (x ₂₂)	-.03	-.02	.36*	.35*	.76*	1.00											
Weekly Internet Consumption (x ₂₃)	.01	-.05	.22*	.26*	.40*	.31*	1.00										
Media Helpfulness Index (x ₂₄)	.01	.09	.08	-.03	.14*	.10	.02	1.00									
Media Credibility Index (x ₂₅)	-.04	.11	.04	-.02	.14*	.15*	.01	.23*	1.00								
Gender (x ₂₆)	-.10	-.07	.09	.04	.08	.03	.08	.05	-.05	1.00							
Age (x ₂₇)	-.07	-.02	.11	-.09	-.03	-.13*	-.04	.00	-.03	.07	1.00						
Weekly Income (x ₂₈)	-.00	-.09	.06	.01	.04	.04	.13*	.08	-.07	-.22*	.05	1.00					
Incarceration Length (x ₂₉)	-.05	.01	.01	.01	-.08	-.05	-.10	-.08	-.01	-.05	.02	.04	1.00				
African American (x ₃₀)	.01	-.15*	.19*	-.04	.09	.12*	-.02	.03	.13*	.04	-.06	-.22*	.05	1.00			
Caucasian (x ₃₁)	.00	-.11	-.12*	-.02	-.11	-.16*	-.03	.08	-.05	.01	.07	.18*	-.00	-.62*	1.00		
Marital Status (x ₃₂)	-.01	-.13*	-.06	-.00	-.04	.04	-.12*	-.02	.00	-.09	-.31*	-.04	.04	.12*	-.02	1.00	
Education Level (x ₃₃)	-.02	-.14*	-.10	-.12*	-.04	-.06	.15*	-.03	-.07	-.07	.04	.21*	.03	-.15*	.12*	-.17*	1.00

deterrence framework, the experimental manipulations of perceived punishment certainty and punishment severity did not seem to influence future offending.

Several extralegal considerations were found to be relevant to one's decision to steal. The possible benefit of shoplifting in the vignette significantly encouraged future offending while perceived shame and moral wrongfulness both significantly decreased the likelihood of offending. As shown in Table 13, intentions to offend were significantly higher for respondents who were more impulsive and those who were less religious. The more realistic respondents perceived the hypothetical vignette, the more likely they were to engage in offending. Additionally, African Americans had a higher likelihood of offending.

Stafford and Warr (1993) predict that an individual's personal and vicarious experiences with punishment and punishment avoidance will influence that person's perceived risk of punishment, thereby decreasing his or her future propensity to offend. According to Table 13, several additional variables were found to significantly influence the perceived certainty of punishment.

In accordance with Stafford and Warr (1993), the perceived certainty of punishment significantly decreased with greater personal and vicarious experiences with punishment avoidance. Also consistent with the model, as vicarious experiences with punishment outside the respondent's social circle increased so did the perceived certainty of punishment. The extralegal benefits and costs associated with the behavior in the scenario were all significantly related to perceived certainty of punishment in the predicted directions. That is the perceived certainty of punishment was significantly higher for respondents who felt more shameful, more moral wrongfulness, and for those who would experience less enjoyment. Contrary to findings in the previous scenario, weekly television consumption and media credibility had a positive effect on

perceived certainty of punishment. Gender was also found to be related to punishment certainty. Males were more likely to be influenced by the perceived the certainty of punishment than females. As shown in Table 13, perceptions of punishment certainty were significantly higher for respondents who were not single, more religious, and for those who were incarcerated for shorter periods of time.

Table 14 presents the multivariate results of regressing likelihood of shoplifting on the dimensions of deterrence. As shown in the table, the results are partially supportive and partially not supportive of Stafford and Warr's (1993) model. As predicted by the reconceptualizaion, the likelihood of shoplifting significantly decreases with greater levels of perceived certainty. Further, personal experience with punishment for other crimes was nearly significant ($p = .06$) and in the expected direction. Contrary to Stafford and Warr's (1993) reconceptualization, a positive relationship was found between an individual's vicarious experiences with punishment and his or her likelihood of shoplifting. Additionally, other measures of personal and vicarious experiences with punishment and punishment avoidance were predicted to influence likelihood of offending, but no significant relationships were found.

Table 14 Regression of the Likelihood of Shoplifting on Dimensions of Deterrence

	B	Beta	Sig.
Personal Punishment (shoplift)	-.55	-.01	.84
Personal Punishment (other crimes)	-1.09	-.11	.06
Personal Punishment Avoidance (shoplift)	.20	.09	.19
Personal Punishment Avoidance (other crimes)	.00	.06	.34
Vicarious Punishment	.24	.19	.00
Vicarious Punishment Beyond Social Circle	-3.19	-.10	.09
Vicarious Punishment Avoidance	.14	.09	.13
Vicarious Punishment Avoidance Beyond Social Circle	-1.33	-.04	.53
Certainty of Punishment	-.13	-.13	.02
Certainty of Punishment Manipulation (0=low, 1=high)	3.70	.06	.30
Severity of Punishment Manipulation (0=low, 1=high)	-.50	-.01	.89

Constant = 34.40

F = 3.013

R² = 0.065

Table 15 presents the multivariate regression analysis of an individual's likelihood of shoplifting on dimensions of deterrence, rational choice, individual differences, and control variables. Again, findings indicate no support for the deterrence doctrine. In particular, the predicted relationships were not found among the dimensions of personal and vicarious experiences with punishment and punishment avoidance. Measures of punishment severity and certainty also failed to predict an individual's likelihood of stealing. Contrary to Stafford and Warr's (1993) model, a person's vicarious punishment experiences significantly increased future likelihood of offending. This finding, although counterintuitive, has also been reported in previous empirical tests of Stafford and Warr's reconceptualization (Paternoster & Piquero, 1995; Piquero & Paternoster, 1998; Piquero & Pogarksy, 2002; Sitren & Applegate, 2006, 2007) and this study considers the nature of this finding in the discussion below.

In support of expanding the deterrence framework, several extralegal considerations were found to influence offending. Respondents' likelihood of shoplifting significantly increased with lower levels of shame and higher levels of predicted enjoyment. Individual differences, demographics, and the majority of other control variables did not significantly influence likelihood of offending. The sole exception was that the more realistic the respondents perceived the scenario to be, the higher the likelihood of offending. The last section of this chapter presents a discussion of the deterrent patterns observed across the three behaviors examined in this study.

Table 15 Regression of the Likelihood of Shoplifting on Dimensions of Deterrence, Rational Choice, Individual Differences, and Controls

	B	Beta	Sig.
<u>Dimensions of Deterrence</u>			
Personal Punishment (shoplift)	.69	.01	.83
Personal Punishment (other crimes)	-.85	-.09	.14
Personal Punishment Avoidance (shoplift)	-.12	-.06	.46
Personal Punishment Avoidance (other crimes)	.00	.06	.39
Vicarious Punishment	.26	.20	.00
Vicarious Punishment Beyond Social Circle	-.57	-.02	.77
Vicarious Punishment Avoidance	-.02	-.01	.83
Vicarious Punishment Avoidance Beyond Social Circle	-.74	-.02	.73
Certainty of Punishment	-.10	-.10	.16
Certainty of Punishment Manipulation (0=low, 1=high)	3.78	.06	.33
Severity of Punishment Manipulation (0=low, 1=high)	-3.15	-.05	.41
<u>Rational Choice</u>			
Extralegal Benefits	.18	.17	.02
Shame	-.18	-.22	.01
Morally Wrong	.10	.10	.18
<u>Individual Differences</u>			
Impulsivity Index	2.62	.06	.33
Religious Salience Index	-3.21	-.11	.11
<u>Demographics</u>			
Gender (0=male, 1=female)	.10	.00	.99
Age	-.04	-.01	.84
Weekly Income	-.00	-.05	.43
Incarceration Length	.09	.02	.78
African American (0=no, 1=yes)	6.88	.11	.18
Caucasian (0=no, 1=yes)	1.46	.02	.78
Marital Status (0=not single, 1=single)	-.91	-.01	.84
Education Level	-1.10	-.02	.72
<u>Other Controls</u>			
Weekly TV Consumption	-.13	-.08	.25
Weekly Radio Consumption	.04	.05	.48
Weekly Newspaper Consumption	-.28	-.13	.24
Weekly Magazine Consumption	.16	.07	.51
Weekly Internet Consumption	.13	.08	.26
Media Helpfulness Index	.05	.00	.98
Media Credibility Index	.27	.00	.93
Realism of the Hypothetical Scenario	.23	.26	.00
Spanish Version (0=no, 1=yes)	-4.73	-.01	.82
Constant = 30.527			
F = 3.916			
R ² = 0.307			

Deterrent Patterns Observed Across the Three Behaviors

This section reports deterrent patterns observed across the three behaviors examined in this study – drunk driving, illegal drug purchase, and shoplifting. Comparisons will be made across descriptives, bivariate correlations, and multivariate models. First, the descriptive results will be compared (Tables 4, 8, and 12). Even though the average likelihood of offending was highest for the drunk driving hypothetical scenario, a substantial number of respondents indicated that there was a chance they would engage in other illegal activities – purchasing illegal drugs and shoplifting – if they found themselves in the situations described in the vignettes. Overall, participants admitted to significant experiences with each of the selected offenses. Calling into question the deterrent ability of legal sanctions, the respondents consistently reported much more experience with avoiding than experiencing punishment. Although averages for perceived punishment certainty were close to 50% for all behaviors, many respondents still believed they would engage in the illegal activity if they found themselves in the hypothetical scenarios. Additionally, most of the respondents indicated that each hypothetical scenario was realistic. Finally, results indicate a pattern among the extralegal considerations for all three behaviors. Respondents felt fairly strongly that each behavior would be morally wrong and that they would feel moderately ashamed if they engaged in the behavior described in the scenario. On the other hand, respondents did not feel as though they would benefit greatly if they committed the crime in each scenario.

Next, the deterrent patterns observed across the bivariate correlations will be discussed (Tables 5, 9, and 13). Consistent with Stafford and Warr's (1993) reconceptualization of

deterrence, intentions to drive drunk and shoplift under the hypothetical scenario significantly increased with respondents' personal experiences with avoiding punishment. Also consistent with Stafford and Warr's (1993) restatement, results indicate a negative relationship between perceived certainty of punishment and likelihood of offending for the drug purchase and shoplifting scenarios, that is, a person's likelihood of offending decreases with greater levels of perceived certainty of punishment. However, contrary to Stafford and Warr's (1993) reconceptualization of general and specific deterrence, neither form of prior punishment (personal or vicarious) seemed to influence offending. In fact, a positive relationship was demonstrated between vicarious punishment and likelihood of offending for two behaviors (drunk driving and shoplifting). Although, several other measures of punishment and punishment avoidance were found to influence respondents' likelihood of driving while intoxicated and taking something from a store without paying for it, patterns were not observed among the behaviors. Also contrary to the deterrence framework, the experimental manipulations of perceived punishment certainty and punishment severity did not seem to deter offending. It is notable that across all three scenarios the experimental manipulation of punishment certainty was unrelated to the respondents' perceptions of how likely it was that committing the behavior would result in punishment. Thus, a real difference in the risk of apprehension went unrecognized by inmates.

Several patterns did emerge for the extralegal considerations. The possible benefit of engaging in the illegal behavior described in each vignette encouraged future offending while feelings of shame significantly decreased future offending. Moral wrongfulness was also found to influence future offending in the predicted direction for two of the three scenarios (drug purchase and shoplifting). Higher levels of religious salience significantly discouraged future

offending. Greater rates of impulsivity encouraged respondents' likelihood of driving drunk and shoplifting. African Americans were more likely to purchase illegal drugs and shoplift in the scenarios. Finally, the more realistic respondents' viewed the hypothetical scenarios, the more likely they were to engage in offending.

The next set of patterns reported will coincide with regressing the likelihood of offending on the key dimensions of deterrence (Tables 6, 10, and 14). Overall, findings indicate partial support for Stafford and Warr's (1993) model. As predicted by the reconceptualization, the likelihood of purchasing illegal drugs and shoplifting significantly decreased with greater perceptions of punishment certainty. Contrary to Stafford and Warr's (1993) model, both personal and vicarious experiences with punishment did not significantly influence likelihood of offending. In fact, a positive relationship was found between vicarious punishment experiences and an individual's likelihood of driving drunk and purchasing illegal drugs. Although deterrent relationships were predicted with other measures of personal and vicarious experiences with punishment and punishment avoidance, no other patterns were observed across the behaviors. Finally, the model regressing the likelihood of driving drunk on dimensions of deterrence had the greatest explanatory power.

The final section of this comparison presents the patterns among the regressions of likelihood of offending on dimensions of deterrence, rational choice, individual differences, and control variables (Tables 7, 11, and 15). These analyses revealed that, once other variables were controlled, none of the measures of deterrence significantly predicted differences in intentions to offend in the way deterrence theory asserts. However, extralegal consequences were related, indicating support for a rational choice perspective. Greater predicted enjoyment increased the

likelihood of offending in each scenario. On the other hand, the chance that participants would experience shame was inversely related to the likelihood of purchasing illegal drugs and stealing.

Individual differences, demographics, and other controls were consistently unrelated to the dependent variable. The sole exception was that the more realistic the respondents perceived the scenario to be, the higher the likelihood of offending. Despite the small number of significant predictor variables, each model was able to explain more than 30% of the variation in intentions to offend. The final chapter of this dissertation presents an overview of the key results, a discussion of the theoretical implications, policy implications, study limitations, and directions for future research.

CHAPTER FIVE: CONCLUSION

Overview of Results

Stafford and Warr's (1993) reconceptualization of deterrence has caused numerous deterrence researchers to reassess the distinction between general and specific deterrence. More noteworthy, Stafford and Warr introduced the concept of avoiding punishment. The theorists claimed that experiences with punishment avoidance might be more important to the deterrence process than legal punishment. Surely, most individuals should have a combination of personal and vicarious experiences with punishment and experiences with avoiding punishment. Stafford and Warr (1993) recommend the collection of several relevant variables – a person's direct experience with punishment; a person's direct experience with avoiding punishment; a person's indirect experience with punishment; and a person's indirect experience with avoiding punishment.

Even though the literature examining general and specific deterrence is substantial, tests of deterrence fail to consider several of the aspects suggested by Stafford and Warr. Rarely do any of the previous research studies assess the effects of avoiding punishment. Additionally, the direct and indirect effects of experience are hardly ever analyzed together. General deterrence research is traditionally concerned with indirect experiences with punishment while specific deterrence research is traditionally concerned with direct experiences with punishment. Thus, Stafford and Warr make a fundamental contribution to the deterrence literature proposing the ideas that most individuals will have a mixture of direct and indirect experiences and that

avoiding punishment is a critical aspect of the deterrence framework. As presented in this dissertation, Stafford and Warr's reconceptualization has not been extensively tested. Thus far, five prior studies have examined Stafford and Warr's (1993) model that general and specific deterrence processes could be incorporated into a single theory. All five studies applied Stafford and Warr's (1993) reconceptualization to conventional, non-offending populations, and three of these studies had collected original data designed specifically to operationalize Stafford and Warr's (1993) key theoretical constructs (Piquero & Pogarsky, 2002; Sitren & Applegate, 2006; Sitren & Applegate, 2007). The present study offered a replication and extension of these studies, using a sample of offenders and additional measures to extend the literature in this area. This dissertation was the first of its kind to directly test Stafford and Warr's (1993) model, blending specific and general deterrence, on an offending population. Additionally, this dissertation expanded perceptual deterrence literature to include extralegal considerations. This is a particularly salient point because non-legal costs may be more influential in criminal decision-making than formal sanctions (Pratt et al., 2006). Several studies have found considerable support for examining the effects of extralegal costs and benefits to perceptual deterrence research (Nagin, 1978; Pratt et al., 2006). This chapter provides a brief synopsis of the key empirical observations of the dissertation. Next, discussions of the theoretical implications, crime control policy implications, study limitations, and directions for future research are presented.

Overall, respondents admitted to a generous amount of experiences with each of the illegal activities considered in this study. A substantial number of participants also indicated that there was a chance they would engage in these behaviors if they found themselves in the situations described in the vignettes. Examination of the bivariate analyses revealed some

support for the deterrence doctrine and the rational choice perspective. However, more rigorous tests of these predictions revealed no support for deterrence theory. Even though this study concluded that deterrence alone does not influence future offending, the idea of choice was upheld. Extralegal costs and benefits impacted the respondents' intentions to drive drunk, purchase illegal drugs, and steal. The next section of this chapter presents the theoretical implications, comparing the results to the study hypotheses, aspects of deterrence, and implications for rational choice.

Theoretical Implications

The main objective of this dissertation was to test the core predictions offered by Stafford and Warr: (H₁) personal and vicarious experiences with punishment will decrease the likelihood of future offending by increasing the perceived certainty of punishment; and (H₂) conversely, personal and vicarious experiences with punishment avoidance will decrease an individual's perception of the certainty of punishment, thereby increasing an individual's future tendency to offend. The current study also evaluated other aspects of deterrence and the impact of extralegal sanctions on offender decision-making. Results will be evaluated across these predictions, other features of deterrence, and implications for expanding the deterrence framework to include elements from a rational choice perspective.

The results for the bivariate analyses indicated considerably more support for this study's predictions compared to the multivariate analyses. Several measures of punishment avoidance experiences significantly increased respondent's intentions to drive drunk and steal. Additionally, an individual's likelihood of offending decreased with greater levels of perceived

certainty of punishment for the drug purchase and shoplifting scenarios. These results indicate support for the second hypothesis of this dissertation. Contrary to this study's hypothesis one, neither form of punishment seemed to deter offending. In fact, a positive relationship was revealed between vicarious punishment and future offending for driving drunk and stealing. Therefore, evidence in support of hypothesis one – punishment experiences decreasing future offending – was not demonstrated.

Minimal support was found for the predictions of this study when the likelihood of offending was regressed on the key dimensions of deterrence. The likelihood of purchasing illegal drugs and shoplifting significantly decreased with greater perceptions of punishment certainty. Additionally, one measure of punishment avoidance was found to influence future tendencies to offend. While no support was found for the first hypothesis, this study could argue minimal support for the second hypothesis.

As previously discussed, some bivariate findings did substantiate several aspects of the second core hypothesis of this study; however, once other elements – such as rational choice, individual differences, and controls – were included in the multivariate model, certainty and punishment avoidance were no longer significant correlates of intentions to offend. Therefore, results were unable to corroborate either of the core predictions of this dissertation.

The present study also examined other aspects of deterrence theory. According to deterrence theory, punishments are considered effective if they are certain and just harsh enough to make illegal activity less beneficial. Thus, each behavior under scrutiny included experimental manipulations of the perceived risk of punishment certainty and severity. Contrary to the deterrence framework, experimental manipulations of perceived punishment certainty and punishment severity did not seem to deter offending. It is notable that across the three scenarios

the manipulation of punishment certainty was unrelated to the participants' perceptions of how likely it was that committing the behavior would result in punishment. Thus, a real difference in the risk of apprehension went unrecognized by inmates. Traditional statements of specific and general deterrence also argue that experiences with punishment and other people's experiences with punishment will discourage future offending. Neither form of punishment (personal or vicarious) seemed to deter criminal behavior. This dissertation concludes that deterrence alone does not adequately predict future offending.

One possible explanation for the lack of deterrence substantiation has to do with the population under observation. The majority of perceptual deterrence studies have been conducted on largely pro-social groups and have assessed minor deviant behaviors (Paternoster, 1987). Several criminologists observe a pattern of deterrence support found among studies that draw on college student's self-reported intentions to offend on vignettes that may be less pronounced among offender samples (Pratt et al, 2006; Wright et al., 2004). The current study tested deterrence theory among a sample of offenders. This dissertation and several other studies suggest that offenders may be very different than those typically studied in deterrence research (Piliavian et al., 1986; Decker et al., 1993). Thus, threatened punishments for crime seem to deter criminally prone individuals less than others.

As discussed in the literature review, one limitation characterizing deterrence research thus far has been the lack of attention to the extralegal costs and benefits of the decision-making process. Therefore, the present study expanded the deterrence doctrine beyond legal penalties to include non-legal considerations. Across the bivariate analyses, the possible benefit of engaging in the illegal behavior described in each vignette encouraged future offending while feelings of shame significantly decreased future offending. Moral wrongfulness was also found to influence

future offending in the predicted direction for two of the three scenarios (drug purchase and shoplifting). Several of these relationships still presented significance in the more rigorous multivariate tests. Greater predicted enjoyment increased the likelihood of offending in each scenario. Also consistent with rational choice, the chance that participants would experience shame was inversely related to the likelihood of purchasing illegal drugs and stealing. In conclusion, this dissertation demonstrated support for a rational choice perspective, that is, extralegal costs and benefits were found to influence the decision-making process about future offending. These are particularly salient findings because non-legal sanctions seem to be more influential to the deterrence process than punishment itself. Furthermore, Wood (2006) examined the deterrent effect of nonsocial reinforcement and learning processes on an offending population. His findings suggest that both positive and negative nonsocial reinforcers play an important role in offender decision-making. This dissertation and several other research studies (Nagin, 1998; Nagin & Pogarsky, 2001; Wood, 2006) suggest further analysis of the effect of extralegal sanctions on future criminal activity, especially among non-conventional populations.

Individual differences, demographics, and other controls were consistently unrelated to the dependent variable. The sole exception was that the more realistic the respondents perceived the scenario to be, the higher the likelihood of offending. The question about each scenario's realism was intended to verify whether the situation appeared reasonable. It is possible, however, that some inmates did not distinguish fully between the situation and how they would react to it. Thus, offenders may have interpreted these two questions as asking the same thing. The likelihood of offending asked respondents "What is the likelihood that you would (drive home/buy drugs/take the cold medicine) under the circumstances presented in the scenario?" The

realism of the hypothetical scenario asked respondents “How realistic is it that you would be in the situation above?”

Several important relationships revealed themselves in two of the scenarios. Females and African Americans were more likely to purchase illegal drugs while Caucasians were more likely to drive drunk in the hypothetical scenario. Correlates of offending in this study parallel correlates of offending from official data. Recent crime trends indicate that while males are more likely to be arrested for drug abuse violations (increasing only 20% from 1995 to 2005); the arrest rate for females has nearly doubled in the past decade (UCR, 2005). Crime trends in the United States also reflect this study’s findings with regards to race. In year 2005, Caucasians represented 88% of arrests for driving under the influence, and African Americans were disproportionately represented for drug abuse violations (UCR, 2005). The differences in offending reported in this study are noteworthy because they are consistent with offending behavior from official data. In other words, correlates of intended behavior are consistent with correlates of actual behavior, supporting the validity of the current study.

Policy Implications

Current crime control proposals that attempt to prevent or reduce crime through increases in punishment certainty and severity are attractive to policymakers for several reasons. First, punishment or cost-oriented correctional programs are much easier to manipulate than the benefit side. Deterring criminals by giving them harsher punishments is much more straightforward than dealing with and trying to change offenders. Second, deterrence-based approaches are difficult to falsify. If recidivism rates remain unchanged after the implementation of “get tough” policies

(e.g., 10-20-life, “three strikes and you’re out” laws), then the argument can always be made that the punishments were not harsh enough (Cullen, Pratt, Miceli, & Moon, 2002; Pratt et al., 2006).

Research shows that punishment-oriented correctional programs generally do not deter offenders (Finckenauer, 1982; Paternoster, 1987; Cullen, Wright, & Applegate, 1996; Cullen et al., 2002; Pratt et al., 2006). The findings of the current study and the bulk of other findings on deterrence suggest that policymakers should look to other theories of criminal behavior for guidance (Paternoster, 1987; Pratt et al., 2006). Had this dissertation demonstrated support for deterrence theory, there would have been clear policy implications. Instead, implications must be drawn from the absence of results and from other punishment philosophies. While actual increases in the likelihood of apprehension and punishment are unlikely to deter, they have the ability to reduce crime by subjecting more offenders to rehabilitation or by incapacitating them. So there may be good reasons to pursue some policies (sobriety check points, crackdowns, surveillance cameras, etc) even if they do not discourage offenders.

Another finding of the current study should be discussed for its policy implications – the experimental manipulation of punishment certainty did not affect perceptions of the certainty of punishment. This finding suggests that efforts to raise the chances of apprehension may help catch people when they offend, but are not expected to dissuade individuals from offending in the first place. The real difference in risk did not change the perceived risk.

One final policy implication develops from the current study’s significant relationship between extralegal sanctions and future offending. Various studies have found considerable support for examining the effect of non-legal considerations of offending decisions (Paternoster, 1989; Nagin, 1998; Nagin & Pogarksy, 2001). In fact, findings from this dissertation suggest greater deterrent effects for non-legal considerations than for legal consequences. Despite the

fact that deterrence generally does not appear to shape human behavior, certain and appropriately severe punishments potentially have value by directing offenders to rehabilitation programs, by incapacitating them, or by triggering other consequences that do influence future offending.

As noted, results from this dissertation suggest the importance of non-legal sanctions on offending decisions. Although the current study was not specifically designed to examine the mediating effects between formal and informal sanctions, several studies suggest that non-legal sanctions can enhance the deterrent effects of legal sanctions (Pate & Hamilton, 1992; Sherman, Smith, Schmidt, & Rogan, 1992; Zimring & Hawkins, 1971). According to Zimring and Hawkins (1971, p. 39), “for the majority of people the most degrading aspect of punishment is the social message it conveys.” Individuals who are caught and punished for their crimes not only experience adverse formal consequences, but also experience informal consequences – such as embarrassment, loss of an important relationship or employment – that may provide more reason for potential offenders to desist from reoffending. Because the extralegal consequences affect behavior and social reinforcers (see Wood, 2006) occur only in the context of interpersonal relationships, potentially effective policies might focus on building people’s connections to communities and other people.

Limitations and Future Directions

Five limitations – including the range of offending behaviors, variations in risks and rewards, attention towards experiences and avoidance experiences with extralegal considerations, the use of hypothetical vignette methodology, and social desirability bias – characterize this study and will be discussed next. First, this dissertation was able to expand the

range of offending behaviors to include several offenses not previously considered in perceptual deterrence research. However, testing Stafford and Warr's (1993) theory among a group of work release inmates limited this study's ability to include more serious crimes. The majority of work release inmates are incarcerated for nonviolent offenses, such as property crimes, drug abuse violations, and motor vehicle violations. In order to produce meaningful survey responses, participants must have enough knowledge and experience with the selected behaviors to answer personal questions about themselves and vicarious questions about other people's behavior. Therefore, this study was not able to examine more serious levels of offending.

Second, although this dissertation introduced variations in risks and rewards to tests of Stafford and Warr's (1993) model, additional variations are recommended for future research. Thus far, tests of Stafford and Warr's (1993) theory have examined two measures of punishment – getting stopped by the police and getting arrested. Piquero and Pogarsky (2002) suggest examination of several other forms of punishment (e.g., court procedure, conviction, and incarceration) when examining Stafford and Warr's (1993) theory.

Third, the results of this study and several others illustrate that extralegal considerations are important to explaining criminal behavior (Paternoster, 1989; Nagin, 1998; Nagin & Pogarsky, 2001). Expanding the deterrence doctrine to include measures of extralegal costs and benefits here was an advance; however, this study did not assess prior experiences with or avoidance of these extralegal costs and benefits.

A fourth limitation is the use of hypothetical vignette methodology. Vignettes have been used in social sciences since the 1950s and in a variety of research settings (Hughes & Huby, 2002; Sleet, Durrheim, Kriel, Solomon, & Baxter, 2002). Strengths of vignette methodology include the ability to gather information from larger groups of individuals, to manipulate

numerous variables simultaneously that would not be feasible in observation studies, and to circumvent ethical dilemmas that are frequently evident during observation (Gould, 1996). It is certainly difficult to generalize results revealed from hypothetical scenarios to real-world applications. However, this type of study was performed because it would be tremendously difficult to design and conduct research involving offenders engaging in criminal behavior that would meet ethical standards, and virtually impossible to gather comprehensive information on prior experiences any other way. Although there are weaknesses for assessing the dependent variable, it is very difficult to conceive of an ethical alternative. Additionally, few other options exist for assessing the key independent variables (personal and vicarious experiences with punishment and punishment avoidance). Despite limitations of vignette methodology for the purposes of this study, the vignette approach constituted an appropriate technique for testing Stafford and Warr's (1993) theory and measuring intentions to offend.

Finally, social desirability bias can be particularly problematic when studying special populations, including offenders (Block, 1990). Efforts to increase the validity in responses were enhanced via anonymity and informing respondents that their survey answers and participation in the study had no effect on their standing with Orange County Corrections. Still, it is important to recognize that the setting in which the study occurred may have influenced the veracity of the respondents' answers.

As noted, this study was the first of its kind to test Stafford and Warr's (1993) reconceptualization among a non-conventional population. In addition, this study expanded the deterrence model to include extralegal considerations. The principal components of the theory – personal and vicarious experiences with punishment and punishment avoidance – have not always related to individual's perceptions of the risk of apprehension and future offending in

ways that deterrence theory would predict. Future research will need to address the inconsistencies between theoretical predictions and empirical reality if deterrence theory is to continue. Other studies are also needed to expand the scrutiny of Stafford and Warr's reconceptualization of general and specific deterrence. To assess the generalizability of deterrence theory, future research needs to consider other crimes beyond those involving alcohol abuse, drug use, and theft. Research should test the theory with different groups of known offenders, and vary the risks and rewards examined. Additionally, future research should consider the deterrent effects of an individual's personal and vicarious experiences and avoidance experiences of extralegal consequences. A research agenda addressing the limitations in the current literature would contribute to a deeper understanding of offender decision-making and would help clarify what features of deterrence theory remain viable and what features should be re-evaluated.

APPENDIX A: OPERATIONALIZATION OF VARIABLES

Concept	Operationalization	Label
<u>Realism of the hypothetical scenario</u>	How realistic is it (on a scale from 0 to 100) that you would be in the situation described above?	Realism of the hypothetical scenario
<u>Likelihood of offending</u>	What is the likelihood (on a scale from 0 to 100) that you would drive home under the circumstances presented in the scenario?	Likelihood of driving drunk
	What is the likelihood (on a scale from 0 to 100) that you would buy drugs under the circumstances presented in the scenario?	Likelihood of purchasing illegal drugs
	What is the likelihood (on a scale from 0 to 100) that you would take the cold medicine under the circumstances presented in the scenario?	Likelihood of shoplifting

<u>Personal punishment experience</u>	In the past five years, how many times have you been arrested for driving when your blood alcohol level was above the legal limit?	Personal punishment (drunk driving)
	In the past five years, how many times have you been arrested for buying drugs illegally?	Personal punishment (drug purchase)
	In the past five years, how many times have you been arrested for taking something from a store without paying for it?	Personal punishment (shoplift)
	In the past five years, how many times have you been arrested for driving a car without the owner's permission?	Personal punishment (car theft)
	In the past five years, how many times have you been arrested for vandalizing someone's property?	Personal punishment (vandalism)
	In the past five years, how many times have you been arrested for breaking into a house or building?	Personal punishment (burglary)
	In the past five years, how many times have you been arrested for acting loud, rowdy, or unruly in a public place?	Personal punishment (public disturbance)
	In the past five years, how many times have you been arrested for hurting or threatening to hurt someone with a weapon?	Personal punishment (assault)
	In the past five years, how many times have you been arrested for driving without a license?	Personal punishment (driving without a license)
	In the past five years, how many times have you been arrested for starting a fistfight?	Personal punishment (fistfight)

<u>Personal punishment avoidance</u>	In the past five years, how many times have you previously driven when you have suspected that your blood alcohol level was above the legal limit [minus Personal punishment drunk driving]	Personal punishment avoidance (drunk driving)
	In the past five years, how many times have you previously bought illegal drugs [minus Personal punishment drug purchase]	Personal punishment avoidance (drug purchase)
	In the past five years, how many times have you previously taken something from a store without paying for it [minus Personal punishment shoplift]	Personal punishment avoidance (shoplift)
	In the past five years, how many times have you previously driven a car without the owner's permission [minus Personal punishment car theft]	Personal punishment avoidance (car theft)
	In the past five years, how many times have you previously vandalized someone's property [minus Personal punishment vandalism]	Personal punishment avoidance (vandalism)
	In the past five years, how many times have you previously broken into a house or building [minus Personal punishment burglary]	Personal punishment avoidance (burglary)
	In the past five years, how many times have you previously acted loud, rowdy, or unruly in a public place [minus Personal punishment public disturbance]	Personal punishment avoidance (public disturbance)
	In the past five years, how many times have you previously hurt or threatened to hurt someone with a weapon [minus Personal punishment assault]	Personal punishment avoidance (assault)
	In the past five years, how many times have you previously driven without a license [minus Personal punishment driving without a license]	Personal punishment avoidance (driving without a license)
	In the past five years, how many times have you previously started a fistfight [minus Personal punishment fistfight]	Personal punishment avoidance (fistfight)

<u>Vicarious punishment experience</u>	What percentage of the people you know personally have ever been charged with drunk driving?	Vicarious punishment (drunk driving)
	What percentage of the people you know personally have ever been charged with buying illegal drugs?	Vicarious punishment (drug purchase)
	What percentage of the people you know personally have ever been charged with taking something from a store without paying for it?	Vicarious punishment (shoplift)
<u>Vicarious punishment avoidance</u>	What percentage of the people you know personally do you think have driven while intoxicated on at least several occasions [minus Vicarious punishment drunk driving]	Vicarious punishment avoidance (drunk driving)
	What percentage of the people you know personally do you think have bought illegal drugs on at least several occasions [minus Vicarious punishment drug purchase]	Vicarious punishment avoidance (drug purchase)
	What percentage of the people you know personally do you think have taken something from a store without paying for it on at least several occasions [minus Vicarious punishment shoplift]	Vicarious punishment avoidance (shoplift)
<u>Vicarious punishment experience beyond each respondent's immediate social circle</u>	Besides the people you know personally, how often do you think people who drive after having too much to drink actually get caught by the police?	Vicarious punishment beyond social circle (drunk driving)
	Besides the people you know personally, how often do you think people who buy illegal drugs actually get caught by the police?	Vicarious punishment beyond social circle (drug purchase)
	Besides the people you know personally, how often do you think people who take something from a store without paying for it actually get caught?	Vicarious punishment beyond social circle (shoplift)

<u>Vicarious punishment avoidance beyond each respondent's immediate social circle</u>	Besides the people you know personally, how often do you think people drive after having too much to drink [minus Vicarious punishment beyond social circle drunk driving]	Vicarious punishment avoidance beyond social circle (drunk driving)
	Besides the people you know personally, how often do you think people buy illegal drugs [minus Vicarious punishment beyond social circle drug purchase]	Vicarious punishment avoidance beyond social circle (drug purchase)
	Besides the people you know personally, how often do you think people take something from a store without paying for it [minus Vicarious punishment beyond social circle shoplift]	Vicarious punishment avoidance beyond social circle (shoplift)
<u>Weekday media consumption</u>	During a typical single weekday (Monday through Friday) how many hours a day (0 to 24) do you spend watching television?	Weekday television consumption
	During a typical single weekday (Monday through Friday) how many hours a day (0 to 24) do you spend listening to the radio?	Weekday radio consumption
	During a typical single weekday (Monday through Friday) how many hours a day (0 to 24) do you spend reading newspapers?	Weekday newspaper consumption
	During a typical single weekday (Monday through Friday) how many hours a day (0 to 24) do you spend reading magazines?	Weekday magazine consumption
	During a typical single weekday (Monday through Friday) how many hours a day (0 to 24) do you spend surfing the Internet?	Weekday Internet consumption

<u>Weekend media consumption</u>	During a typical single weekend day (Saturday and Sunday) how many hours a day (0 to 24) do you spend watching television?	Weekend day television consumption
	During a typical single weekend day (Saturday and Sunday) how many hours a day (0 to 24) do you spend listening to the radio?	Weekend day radio consumption
	During a typical single weekend day (Saturday and Sunday) how many hours a day (0 to 24) do you spend reading newspapers?	Weekend day newspaper consumption
	During a typical single weekend day (Saturday and Sunday) how many hours a day (0 to 24) do you spend reading magazines?	Weekend day magazine consumption
	During a typical single weekend day (Saturday and Sunday) how many hours a day (0 to 24) do you spend surfing the Internet?	Weekend day Internet consumption
<u>Media credibility</u>	Which one of the following statements comes closest to describing your feelings about television?	Television credibility
	Which one of the following statements comes closest to describing your feelings about the radio?	Radio credibility
	Which one of the following statements comes closest to describing your feelings about newspapers?	Newspaper credibility
	Which one of the following statements comes closest to describing your feelings about magazines?	Magazine credibility
	Which one of the following statements comes closest to describing your feelings about the Internet?	Internet credibility
<u>Media helpfulness</u>	Suppose you were looking for ideas on how to commit a crime. Circle whether you think movies would be very helpful, somewhat helpful, not very helpful, or not at all helpful.	Movies helpfulness
	Suppose you were looking for ideas on how to commit a crime. Circle whether you think music videos would be very helpful, somewhat helpful, not very helpful, or not at all helpful.	Music videos helpfulness

	Suppose you were looking for ideas on how to commit a crime. Circle whether you think magazines and books would be very helpful, somewhat helpful, not very helpful, or not at all helpful.	Magazines and books helpfulness
	Suppose you were looking for ideas on how to commit a crime. Circle whether you think newspaper stories would be very helpful, somewhat helpful, not very helpful, or not at all helpful.	Newspaper stories helpfulness
	Suppose you were looking for ideas on how to commit a crime. Circle whether you think television shows would be very helpful, somewhat helpful, not very helpful, or not at all helpful.	Television shows helpfulness
<u>Certainty of punishment</u>	If you drove home under the circumstances described above, what is the chance (on a scale from 0 to 100) you would be pulled over by the police?	Certainty of punishment (drunk driving)
	If you bought drugs under the circumstances described above, what is the chance (on a scale from 0 to 100) you would be caught by corrections?	Certainty of punishment (drug purchase)
	If you took the cold medicine under the circumstances described above, what is the chance (on a scale from 0 to 100) you would be caught by the clerk?	Certainty of punishment (shoplift)
<u>Punishment severity</u>	If you are convicted for drunk driving, you will not go to jail or receive a fine. However your driver's license will be suspended for 3/12 months (inmates will be randomly assigned to one of two license-suspension periods).	Severity of punishment manipulation (drunk driving)
	If you are convicted for buying illegal drugs, you will be sentenced to 20/200 hours of community service (inmates will be randomly assigned to one of two punishments).	Severity of punishment manipulation (drug purchase)
	If you are convicted for shoplifting the cold medicine you will not go to jail. However you will receive \$100/\$500 fine (inmates will be randomly assigned to one of two punishments).	Severity of punishment manipulation (shoplift)

<u>Extralegal benefits</u>	How much would you enjoy (on a scale from 0 to 100, where 0 means no enjoyment and 100 means lots of enjoyment) driving home from the bar?	Extralegal benefits (drunk driving)
	How much would you enjoy (on a scale from 0 to 100, where 0 means no enjoyment and 100 means lots of enjoyment) buying drugs in the given situation?	Extralegal benefits (drug purchase)
	How much would you enjoy (on a scale from 0 to 100, where 0 means no enjoyment and 100 means lots of enjoyment) taking the cold medicine without paying for it?	Extralegal benefits (shoplift)
<u>Shame (extralegal costs)</u>	How ashamed would you be of yourself if you drove home from the bar even if no one else found out (on a scale from 0 to 100, where 0 means not at all ashamed and 100 means very ashamed)?	Shame (drunk driving)
	How ashamed would you be of yourself if you bought drugs even if no one else found out (on a scale from 0 to 100, where 0 means not at all ashamed and 100 means very ashamed)?	Shame (drug purchase)
	How ashamed would you be of yourself if you took the cold medicine without paying for it even if no one else found out (on a scale from 0 to 100, where 0 means not at all ashamed and 100 means very ashamed)?	Shame (shoplift)
<u>Morally wrong (extralegal costs)</u>	How morally wrong (on a scale from 0 to 100, where 0 means not at all morally wrong and 100 means very morally wrong) would it be to drive home from the bar?	Morally wrong (drunk driving)
	How morally wrong (on a scale from 0 to 100, where 0 means not at all morally wrong and 100 means very morally wrong) would it be to buy drugs?	Morally wrong (drug purchase)
	How morally wrong (on a scale from 0 to 100, where 0 means not at all morally wrong and 100 means very morally wrong) would it be to take the cold medicine without paying for it?	Morally wrong (shoplift)

<u>Impulsivity</u>	I act on impulse. I often do things on the spur of the moment. I always consider the consequences before I take action. I rarely make hasty decisions. Sometimes I do things on impulse that I later regret. Occasionally I act first and think later.	Impulsivity index
<u>Religious salience</u>	Religion is a very important part of my life. Following God's commandments is important to me. In times of personal trouble, I turn to religion for guidance.	Religious salience index
Gender	What is your gender?	Gender
Race	What is your race?	Race
Age	What is your age (as of your last birthday)?	Age
Marital status	What is your marital status?	Marital status
Income	What is your weekly income?	Income
Education level	What is the highest level of education that you have completed?	Education
Incarceration length	What date did you begin work release?	Incarceration length

APPENDIX B: SURVEY

Consent Form

Hello,

My name is Alicia Sitren and I am a graduate student at the University of Central Florida. I am working under the supervision of faculty member, Dr. Brandon Applegate. As part of my coursework, I am conducting a survey, the purpose of which is to learn about your opinions and past experiences. We would appreciate it if you would take a few minutes to answer questions on the survey. We believe the survey asks important, useful questions, the answers to which will help us understand people's views better.

Your participation is anonymous. I will not ask for your name or identifying information. No one will know your answers to the questions. Your participation in this project is also voluntary. You will not have to answer any question you do not wish to answer. Only I will have access to your surveys. No one at Work Release or Orange County Corrections will have access to your survey. Completed surveys will be stored in a locked file cabinet until the end of the study.

You must be 18 years of age or older to participate. There are no anticipated risks, compensation, or other direct benefits to you as a participant in this survey. Participation will not decrease the time you have to spend in the release program or your sentence. Please be advised that you may choose not to participate in this research, and you may withdraw from the survey at any time without consequence. Non-participation will not affect your status at work release.

We realize this survey will take twenty or thirty minutes of your valuable time, but your participation is the only way for us to better understand individuals like you. You are very important to the success of this project, and we thank you for your consideration.

If you have any questions or comments about this research, please contact me or my faculty supervisor, Dr. Brandon Applegate, College of Health and Public Affairs, Orlando, FL; (407) 823-3739. Questions or concerns about research participants' rights may be directed to the Institutional Review Board Office, IRB Coordinator, University of Central Florida, Office of Research and Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246. The telephone number is (407) 823-2901. The office is open from 8:00 am to 5:00 pm Monday through Friday except on UCF official holidays.

Sincerely,

Alicia Sitren
U. of Central Florida
Dept. of Criminal Justice/Legal Studies
P.O. Box 161600
Orlando, FL 32816-1600
407-823-3739
407-823-5360 (Fax)

If you have read the procedure described above, and voluntarily agree to participate in the procedure, please continue to the next page.

What Do You Think?

A 2006 Survey of Work Release Inmates

being conducted by
The University of Central Florida

All responses to this survey are completely anonymous;
no one will know how you answer any questions.

Please contact Alicia Sitren or Dr. Applegate (407-823-3739)
if you have any questions or concerns.

I. Directions: Below are some questions about your views on the media. All of your responses will be anonymous and no one will know how you answer each question.

1. During a typical single weekday (Monday through Friday) how many hours a day (0 to 24) do you spend...

- a. Watching television _____ hours
- b. Listening to the radio _____ hours
- c. Reading newspapers _____ hours
- d. Reading magazines _____ hours
- e. Surfing the Internet _____ hours

2. During a typical single weekend day (Saturday and Sunday) how many hours a day (0 to 24) do you spend...

- a. Watching television _____ hours
- b. Listening to the radio _____ hours
- c. Reading newspapers _____ hours
- d. Reading magazines _____ hours
- e. Surfing the Internet _____ hours

3. Suppose you were looking for ideas on how to commit a crime. Circle whether you think the following sources would be *very helpful*, *somewhat helpful*, *not very helpful*, or *not at all helpful*.

	VERY HELPFUL	SOMEWHAT HELPFUL	NOT VERY HELPFUL	NOT AT ALL HELPFUL
a. Your own ideas	1	2	3	4
b. Movies	1	2	3	4
c. Friends	1	2	3	4
d. Music videos	1	2	3	4
e. Other jail inmates	1	2	3	4
f. Magazines and books	1	2	3	4
g. Adults in your neighborhood	1	2	3	4
h. Newspaper stories	1	2	3	4
i. Family members.....	1	2	3	4
j. Television shows.....	1	2	3	4

4. Which one of the following statements comes closest to describing your feelings about...

	Always represents life the way it really is.	Usually represents life the way it really is.	Sometimes represents life the way it really is.	Never represents life the way it really is.
a. Television	1	2	3	4
b. The Radio.....	1	2	3	4
c. Newspapers	1	2	3	4
d. Magazines.....	1	2	3	4
e. The Internet.....	1	2	3	4

II. Directions: We would like to ask you a few questions about yourself. This will help us interpret differences in the way people respond.

5. What is your gender? (circle one)

MALE FEMALE

6. Do you drive? (circle one)

YES NO

7. What is your race? (circle one)

AFRICAN AMERICAN/BLACK CAUCASIAN/WHITE HISPANIC MIXED RACE OTHER

8. What is your marital status? (circle one)

SINGLE MARRIED DIVORCED WIDOWED

9. What is the highest level of education that you have completed? (circle one)

MIDDLE SCHOOL HIGH SCHOOL SOME COLLEGE COLLEGE GRADUATE

10. What is your age (as of your last birthday)? years

11. What is your weekly income?\$ per week

12. What date did you begin work release?, 20

13. Since you have been on work release, do you watch more, less, or about the same amount of television than before you were incarcerated? (circle one)

MORE LESS ABOUT THE SAME

14. Please indicate your level of agreement or disagreement with the following statements by circling your answer below.

	DISAGREE STRONGLY	DISAGREE	NEUTRAL	AGREE	AGREE STRONGLY
a. I act on impulse.....	1	2	3	4	5
b. I often do things on the spur of the moment.....	1	2	3	4	5
c. I always consider the consequences before I take action.....	1	2	3	4	5
d. I rarely make hasty decisions.....	1	2	3	4	5
e. Sometimes I do things on impulse that I later regret.....	1	2	3	4	5
f. Occasionally I act first and think later.....	1	2	3	4	5
g. Religion is a very important part of my life.....	1	2	3	4	5
h. Following God's commandments is important to me.....	1	2	3	4	5
i. In times of personal trouble, I turn to religion for guidance.....	1	2	3	4	5

III. Directions: Please visualize yourself in the situations described below. There are no correct answers and all of your responses will be anonymous.

Situation 1

Suppose you drove by yourself one evening to meet some friends in a local bar. [Since it is a holiday, the police have increased the number of drinking and driving patrols, and may even conduct random sobriety checks.] By the end of the evening, you've had enough drinks so that you're pretty sure your blood alcohol level is above the legal limit. Suppose that you live about 10 miles away and you have to be at work early the next morning. You can either drive home or find some other way home, but if you leave your car at the bar, you will have to return early the next morning to pick it up.

Please mark your answer on each line
(on a scale from 0 to 100)

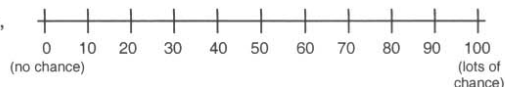
15. If you drove home under the circumstances described above, what is the chance you would be pulled over by the police?
- 0 10 20 30 40 50 60 70 80 90 100
(no chance) (lots of chance)
16. If you are convicted for drunk driving, you will not go to jail or receive a fine. However, your driver's license will be suspended for [3/12] months. What is the likelihood that you will drive home under the circumstances presented in the scenario?
- 0 10 20 30 40 50 60 70 80 90 100
(not at all likely) (very likely)
17. How ashamed would you be of yourself if you drove home from the bar even if no one else found out?
- 0 10 20 30 40 50 60 70 80 90 100
(not at all ashamed) (very ashamed)
18. How much would you enjoy driving home from the bar?
- 0 10 20 30 40 50 60 70 80 90 100
(no enjoyment) (lots of enjoyment)
19. How morally wrong would it be to drive home from the bar?
- 0 10 20 30 40 50 60 70 80 90 100
(not at all morally wrong) (very morally wrong)
20. How realistic is it that you would be in the situation described above?
- 0 10 20 30 40 50 60 70 80 90 100
(not at all realistic) (very realistic)

Situation 2

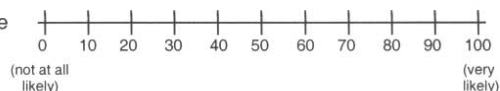
Suppose you know another work release inmate who has drugs for sale, including marijuana, crack, heroin, and some prescription medications. You know that drugs are not allowed in work release, but they could make your time go by with fewer worries. You have the money to buy whatever you want [but you have heard that Corrections is cracking down on illegal drug purchase and is increasing random searches of work release inmates].

Please mark your answer on each line
(on a scale from 0 to 100)

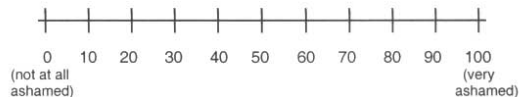
21. If you bought drugs under the circumstances described above, what is the chance you would be caught by corrections?



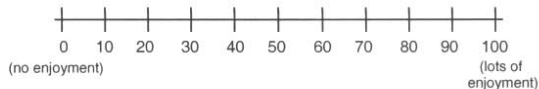
22. If you are convicted for buying drugs illegally, you will be sentenced to [20/200] hours of community service. What is the likelihood that you will buy drugs under the circumstances presented in the scenario?



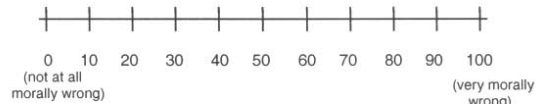
23. How ashamed would you be of yourself if you bought drugs even if no one else found out?



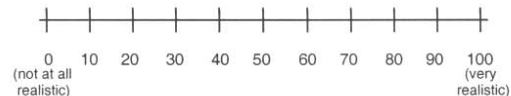
24. How much would you enjoy buying drugs in this situation?



25. How morally wrong would it be to buy drugs?



26. How realistic is it that you would be in the situation described above?

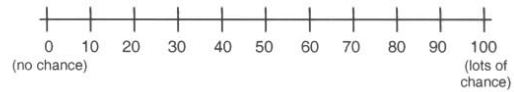


Situation 3

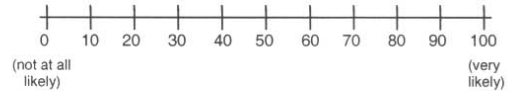
Suppose it is Sunday evening, and you have gone to a small, privately owned convenience store to buy some cold medicine. The past few days, you have been feeling sick and have not been sleeping well. You think the cold medicine will help you get some sleep before a big meeting the next morning. The store is about to close when you realize that you do not have enough money to buy the cold medicine. The medicine is small enough to hide on you without anyone noticing. You do have enough money to buy a soda so that no one will be suspicious of you not buying anything. You notice that you are out of sight from the only clerk, who is reading the newspaper behind the counter, and there seem to be no video cameras or other types of security devices in the store. [You notice that the clerk might be able to see you in a mirror and there is a video security camera at the front of the store.]

Please mark your answer on each line
(on a scale from 0 to 100)

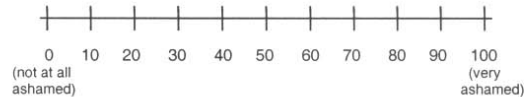
27. If you took the cold medicine under the circumstances described above, what is the chance you would be caught by the clerk?



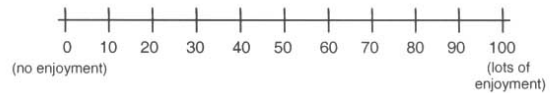
28. If you are convicted for shoplifting, you will not go to jail. However, you will receive a [\$100/\$500] fine. What is the likelihood that you will take the cold medicine under the circumstances presented in the scenario?



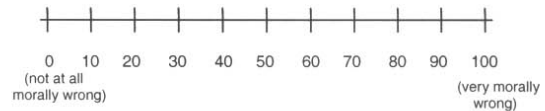
29. How ashamed would you be of yourself if you took the cold medicine even if no one else found out?



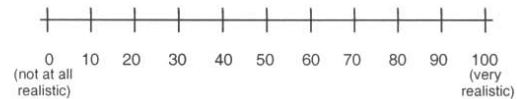
30. How much would you enjoy taking the cold medicine without paying for it?



31. How morally wrong would it be to take the cold medicine without paying for it?



32. How realistic is it that you would be in the situation described above?



IV. Directions: And now we would like to ask you about some things that you may or may not have done. Again, this survey is anonymous and no one will know your answers to the questions.

33. In the past five years, how many times have you...

- a. driven when you have suspected that your blood alcohol level was above the legal limit? times
- b. hurt or threatened to hurt someone with a weapon? times
- c. taken something from a store without paying for it? times
- d. acted loud, rowdy, or unruly in a public place? times
- e. driven a car without the owner's permission? times
- f. broken into a house or building? times
- g. vandalized someone's property? times
- h. driven without a license? times
- i. bought illegal drugs? times
- j. started a fistfight? times

34. Overall, how many total times have you been arrested in the past five years? times

35. In the past five years, how many times have you been arrested for...

- a. driving when your blood alcohol level was above the legal limit? times
- b. hurting or threatening to hurt someone with a weapon? times
- c. taking something from a store without paying for it? times
- d. acting loud, rowdy, or unruly in a public place? times
- e. driving a car without the owner's permission? times
- f. breaking into a house or building? times
- g. vandalizing someone's property? times
- h. driving without a license? times
- i. buying drugs illegally? times
- j. starting a fistfight? times

V. Directions: And now we would like to ask you some things about the people you know. Again, this survey is anonymous and no one will know your answers to the questions.

36. What percentage (from 0% to 100%) of the people you know personally do you think have...

- a. driven while intoxicated on at least several occasions? %
- b. bought illegal drugs on at least several occasions? %
- c. taken something from a store without paying for it on at least several occasions? %

37. What percentage (from 0% to 100%) of the people you know personally have ever been charged with...

- a. drunk driving?..... %
- b. buying drugs illegally?..... %
- c. taking something from a store without paying for it? %

38. Besides people you know personally, how often do you think people...

- | | NEVER | RARELY | SOMETIMES | OFTEN | ALWAYS |
|--|-------|--------|-----------|-------|--------|
| a. drive after having too much to drink? (circle one) | 1 | 2 | 3 | 4 | 5 |
| b. buy drugs illegally? (circle one)..... | 1 | 2 | 3 | 4 | 5 |
| c. take something from a store without paying for it? (circle one) | 1 | 2 | 3 | 4 | 5 |

39. Besides the people you know personally, how often do you think people who...

- | | NEVER | RARELY | SOMETIMES | OFTEN | ALWAYS |
|--|-------|--------|-----------|-------|--------|
| a. drive after having too much to drink actually get pulled over by the police? (circle one) ... | 1 | 2 | 3 | 4 | 5 |
| b. buy illegal drugs actually get caught by the police? (circle one)..... | 1 | 2 | 3 | 4 | 5 |
| c. take something from a store without paying for it actually get caught? (circle one) | 1 | 2 | 3 | 4 | 5 |

– THANK YOU FOR COMPLETING THIS SURVEY –

APPENDIX C: IRB APPROVAL LETTER



Office of Research & Commercialization

March 28, 2006

Alicia Sitren, Research Assistant
and Brandon Applegate, Ph.D.
University of Central Florida
Criminal Justice and Legal Studies
HPA 311
Orlando, FL 32816-1600

Dear Ms. Sitren and Dr. Applegate:

With reference to your protocol #06-3329 entitled, "**What Do You Think?**" I am enclosing for your records the approved, expedited document of the UCF IRB Protocol Submission Form you had submitted to our office. **This study was approved on 3/22/06. The expiration date will be 3/21/07.** Should there be a need to extend this study, a Continuing Review form must be submitted to the IRB Office for review by the Chairman or full IRB at least one month prior to the expiration date. This is the responsibility of the investigator. **Please notify the IRB office when you have completed this research study.**

Please be advised that this approval is given for one year. Should there be any addendums or administrative changes to the already approved protocol, they must also be submitted to the Board through use of the Addendum/Modification Request form. Changes should not be initiated until written IRB approval is received. Adverse events and unanticipated problems should be reported to the IRB as they occur.

Should you have any questions, please do not hesitate to call me at 407-823-2901.

Please accept our best wishes for the success of your endeavors.

Cordially,

Barbara Ward

Barbara Ward, CIM
UCF IRB Coordinator
(FWA00000351 Exp. 5/13/07, IRB00001138)

Copies: IRB File

BW:bw

APPENDIX D: COUNTY APPROVAL LETTER



Timothy P. Ryan
Chief
Tel. (407) 836-3564
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Corrections Department

3723 Vision Boulevard
Reply To: Post Office Box 4970
Orlando, Florida 32802-4970

April 17, 2006

Alicia H. Sitren, Research Assistant
University of Central Florida
Criminal Justice and Legal Studies
HPA 311
Orlando, FL 32816-1600

Subject: Request To Administer Survey (re: Work Release Center)

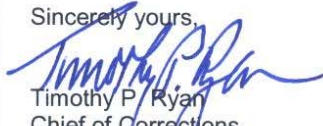
Dear Ms. Sitren,

I am in receipt of your letter requesting permission to conduct a survey on "How Past Experiences Affect Future Decisions". As you mentioned on your letter, this survey has been approved by UCF's Institutional Review Board (IRB) and you would like to administer the same to the inmates at the Orange County Work Release Center.

After reviewing and considering your proposal, I am pleased to inform you that we have approved your request. To that, I will ask that you contact Sgt. Doug Ratliff of the Work Release Center who will assist you in determining the best way to administer your survey with the least impact on facility operations. Sgt. Ratliff can be reached at 407-836-4455. Should you need further help, please feel free to contact Community Corrections' Manager Jill Hobbs, at 407- 836-3005.

I thank you for your interest in our facility and would appreciate if you provide me with a copy of the final outcome at your convenience.

Sincerely yours,



Timothy P. Ryan
Chief of Corrections
Orange County Corrections Department

TR/JH/bc/isi

cc: Cornita Riley, Deputy Chief Community Corrections & Administrative Services
Jill Hobbs, Manager, Community Corrections
Captain Janice Bradstreet, Community Corrections/Work Release Center
Sgt. Doug Ratliff, Work Release Center
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