DECIPHERING DECISION-MAKING: EXPLORING THE DIFFERENCES OF CRIMINAL

DECISION-MAKING BETWEEN OFFENDERS AND COLLEGE STUDENTS

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by

Nicole E Niebuhr

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ABSTRACT

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Previous research has used rational choice to look at criminal decision-making, with the majority of the research using college student samples. The current study uses a sample of college students and offenders to extend upon a previous research comparing the decision-making of the two samples and examining three different types of crime; drive while intoxicated, commit robbery and get into a fight. Comparing the two samples on their decision-making to provided support for rational choice in that individual's do consider costs and benefits. The current study found that the students and offenders decision-making was comparable for one type of crime, but not for the other two. The findings, implications and future research are discussed.

KEY WORDS: Decision-making, Rational choice, Offenders, College students.

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CHAPTER I

Introduction

According to rational choice theory, individuals weigh the costs and benefits of committing a crime before they engage in a criminal act (Cornish & Clarke, 1986). Many studies have relied on this theoretical framework to examine the criminal decision-making process across a variety of offenses including burglary, sexual assault, corporate crime, and driving while intoxicated. In this dissertation, I will employ a hypothetical vignette methodology to evaluate the decision-making process of college students on three separate offenses: driving while intoxicated, theft, and assault. In doing so, I will add to the literature on criminal decision-making by comparing the results of the student sample to a sample of incarcerated offenders.

Analyzing how rational choice theory has changed over time is important in understanding the evolution of research on the criminal decision-making process. Explanations of human behavior based on rational choice originate from the post-Enlightenment work of Beccaria, Bentham, and Hobbes. Within these works, the fundamental philosophical elements of free will and choice were proposed, including suppositions of how decisions are made (Cornish & Clarke, 1986). Following this, the concept of deterrence as an instrumental mechanism was developed, along with discussions of how laws and corresponding sanctions can dissuade unwanted behavior. Choice then became a critical consideration in the link between sanctions and decision-making.

More recently, studies regarding choice, or criminal decision-making, and the influence of deterrence have focused on "perceptual deterrence." Perceptual deterrence is

a term used to describe deterrence that is achieved through an individual's perception of sanctions (Paternoster, 1987). Research on perceptual deterrence examines how the perception of sanctions ultimately impacts behavior, specifically criminal behavior (Pratt, Cullen, Blevins, Daigle & Madensen, 2006). The concept of perceptual deterrence is useful for understanding criminal decision-making and how sanctions impact criminal involvement. More importantly, the primary reason for focusing on perceptual deterrence, as opposed to alternative conceptualizations, is that perceptual deterrence is widely regarded as an empirically testable concept (Felson, 2011; Paternoster, 1987).

Perceptual deterrence is typically studied using hypothetical vignettes (see Bouffard, 2002b; Bouffard, 2007; Nagin & Paternoster, 1993; Nagin & Pogarsky, 2001; Rebellion, Piquero, Piquero, & Tibbetts, 2010). Using this method, participants are presented with a scenario and then are asked to offer their perceptions of sanctions based on the scenario (Pogarsky, 2010). Measures of these perceptions have been constructed using both self-reported ordinal categories (likely, unlikely) and continuous items (see Paternoster et al., 1982). Early research in this arena demonstrated a link between the perceived certainty of being apprehended and a decreased likelihood of criminal activity (Bachamn, Paternoster & Ward, 1992; Cerkovich & Giordano, 1992; Decker, Wright & Logie, 1993; Paternoster & Piquero, 1995). Additional research revealed a relationship between low levels of perceived certainty (of apprehension) and an increase in the probability of engaging in criminal behavior (Paternoster, 1987). All told, rational choice theory, and specifically the attention on the influence of sanctions (deterrence), has been the foundation of research surrounding the criminal decision-making process.

While the majority of studies on decision-making have used student samples, questions have been raised as to the validity of the conclusions as they apply to offenders. Only a few studies have examined decision-making of known offenders. The current study continues this work and extends it by comparing a sample of male college students to a sample of male offenders' decision-making for three types of hypothetical crimes. Within this dissertation, I will use a rational choice framework to examine how the decision to engage in driving while intoxicated, committing robbery and getting into a fight is made. More specifically, I will analyze the perceptions of both students and known offenders regarding their perceived costs and benefits of criminal behavior.

Studying Decision-making

As rational choice theory has evolved from the foundational study of deterrence, the methodologies for examining decision-making have varied. Methodologies that have been used to study decision-making include ethnographic studies, panel studies, and hypothetical vignettes. Ethnographic studies are notable because they allow the researcher(s) to become immersed in what they are studying. The work of Wright and Decker (1994) on the decision-making process of burglars is an important example of this type of qualitative ethnographic approach. Qualitative studies provide a detailed look into small groups of offenders and their decision-making. Panel studies and other longitudinal studies have also been used to study rational choice, as they allow for 'time order' to be examined (Loughran et al., 2016). Time order is important as experiences can shape one's perceptions, so being able to account for perceived costs and benefits before potentially engaging in criminal activity increases reliability.

Various methodologies have been used to address issues concerning time ordering and to increase reliability. Hypothetical vignettes have been used to specifying the conditions in which the hypothetical criminal activity scenario can occur. After reading the hypothetical scenarios, respondents are able to consider how details included in the scenario may impact their decision. Additionally, some authors have suggested that the methodology should move away from providing participants with predetermined costs and benefits, and towards allowing participants to formulate their own costs and benefits. Doing so can provide a more accurate picture of the participants' perceived costs and benefits (Bouffard et al., 2010).

By 2010, there were more than 30 studies which used hypothetical vignettes to study decision-making (see Exum & Bouffard, 2010 for a review) and much of this previous decision-making research has used student samples (e.g., Bachman et al., 1992; Nagin & Pogarsky, 2001, 2002; Paternoster & Simpson, 1996; Piquero & Tibbetts, 1996; Pogarsky & Piquero, 2004; Tibbetts & Herz, 1996). In some cases, researchers have relied on offender samples (e.g., Copes, Hochstetler & Cherbonneau, 2012; Bennett & Wright, 1984; Wright & Decker, 1997), although even fewer studies have directly compared the decision-making processes of students to that of offenders. Those that have made this comparison have found that students and offenders are "rational" when considering the costs and benefits of engaging in crime (Bouffard, 2007; Horney & Marshall, 1992; Nagin & Paternoster, 1993 Wright & Decker, 1997). Additionally, while there is some evidence that student samples are comparable to offenders, this has only been examined with vignettes in regard to driving while intoxicated (e.g., Bouffard & Exum, 2013). As such, there is no evidence that addresses the potential similarity (or

differences) between students' and offenders' perceived costs and benefits of crime, nor the impact of these perceptions on different crime types.

I will use a rational choice framework and hypothetical vignettes to compare the decision-making of a sample of college students to a sample of incarcerated offenders. The purpose of this dissertation is to attempt to replicate Bouffard and Exum's (2013) decision-making work (on driving while intoxicated), while also adding to the literature by examining how students and offenders compare the decision-making of students and offenders in relation to a hypothetical robbery scenario and a violent assault scenario. This study will add to the literature by providing evidence in support or not of students being an adequate measure for examining criminal decision-making.

Student vs. Offender Samples: Are they comparable?

While researchers have utilized samples of both college students and offenders to study criminal decision-making, few studies have examined whether the decision-making processes exhibited by these two samples are comparable. Because student samples are more accessible and are frequently used, it is important to find out whether the results from student samples are similar to those observed among offenders. To accomplish this, identifying the similarities and significant differences between the two groups should be regarded as equally important.

One study that compared the decision-making of students and offenders in regard to hypothetical driving while intoxicated found that both samples reported similar costs and benefits, and also showed a similar level of perceived certainty surrounding the potential consequences (Bouffard & Exum, 2013). While this study provided support that student and offender samples are generalizable to one another, it is important to examine

this further because driving while intoxicated is a much different crime in comparison to more personal or violent crimes, such as robbery and assault. Because crimes vary with regard to severity and contact with others, there is a need to discover whether these two samples are similar when other types of crimes are considered. Meanwhile, since the goals of different offenses also show variance, this 'goal' factor should also be taken into account. For example, the goal of driving while intoxicated is to get somewhere, whereas the goal for robbery will be to obtain items of monetary value. The findings of this dissertation could help guide future research on decision-making in regard to sampling for future studies.

Research Questions

Each of the research questions below will aide in the examination of costs and benefits that the students and offenders consider when thinking about engaging in criminal activities. Moreover, these research questions will dig into differences that may exist between students and offenders related to these costs and benefits. Specifically, the study will examine whether male offenders and male college students differ when it comes to the level of certainty and severity of consequence they perceive related to each of three crime types. These research questions are intended to explore the differences between the college students and offenders. This process will allow for further examination of similarities and differences of the two samples self-reported perceived costs and benefits, as well as an analysis of rational choice theory. In the course of exploring differences between groups I will examine how the self-reported costs, benefits, and levels of certainty and severity are related to the self-reported likelihood of students and offenders to engage crime.

1. Do male offenders differ from male college students with regard to their perceptions of the costs and benefits of engaging in (1) driving while intoxicated, (2) committing robbery, and (3) getting into a fight?

2. Do male offenders differ from male college students with regard to the level of perceived certainty and severity of the consequences they report for each crime type?

3. How do the male offenders' and male college students' level of perceived certainty and severity of costs and benefits impact their self-reported likelihood of engaging in these types of crime?

Dissertation Plan

In the following chapters, I will first provide an overview of how theory and methodologies used to study decision-making have evolved over time. In Chapter Two, I will discuss the classical 'rational choice' scholars, the twentieth century revival of rational choice, and the current state of rational choice research. I will then present the methodological difficulties that have been identified in previous studies. Following that, a summary of the current state of college student vs. offender decision-making will be presented. These sections will provide support for and rationalize the study that is being replicated while also addressing the importance of doing so.

Chapter Three will include a detailed discussion of the methodology used to complete this work including a detailed overview of the survey that was used here. This discussion will explain the hypothetical scenarios used, how the open-ended responses for costs and benefits were coded, as well as how the levels certainty and severity were measured. Chapter Three will also present, in detail, the statistical procedures that will be used to analyze the survey data. Chapter Four will provide the reader the results of the

analysis which include both bivariate and multivariate analyses. Finally, Chapter 5 will discuss the results as it relates to theory and methodology. This chapter will also discuss the limitations and conclusions of the current study.

CHAPTER II

Literature Review: Rational Choice and Offender Decision-making

Rational Choice: Classical Scholars

To many, the classical school of thought surrounding the relationship between crime and punishment is, at its core, a series of thoughts on how the free will is guided by social forces and an awareness of consequences (e.g. Beccaria, 1764; Bentham, 1789; Hobbes, 1681). Thus, the roots of contemporary deterrence and rational choice theories can be traced back to the works of classical scholars: Caesar Beccaria, Jeremy Bentham, and Thomas Hobbes. In his classic work, *On Crimes and Punishments* (1764), Beccaria argued that punishment should fit the crime and not be cruel, and that punishment should outweigh the pleasures of crime, therefore making punishment a deterrent for committing crime. If punishment was to be used for the purpose of preventing crime, Beccaria reasoned the punishment needed to carry with it: certainty, severity, and celerity (swiftness). Where, importantly, certainty refers to the certainty that the punishment will occur. Together with severity, swiftness of punishment became fundamental elements of how consequences should weigh on the offender when deciding whether to engage in a crime.

Nearly 100 years, prior to Beccaria, it was Thomas Hobbes who had posited that people have 'self-interest,' which can result in conflict if the government does not work to maintain societal safety. Hobbes began by suggesting that all humans are equal, and all have the right to claim things and seek power. He thusly concluded that, in order to maintain peace, people must follow a social contract. Hobbes argues that, although there is already an underlying social contract in which members of a society participate, there

is a need for the government to hold society together, as individuals are selfish. Hobbes

(1651) made the claim that humans are rational and self-interested, and this could lead to

crime, also known as a breach of social contract. Therefore, when someone breaches the

social contract, there must be a punishment for the crime, and the punishment should be

greater than the benefit(s) of the crime.

English scholar and humanist, Jeremy Bentham (1789) suggested that the human

goal is to achieve pleasure while avoiding pain, and that the purpose of the law was to

prevent criminal acts; not to deliver retribution. Thus, when it comes to criminal

behavior, Bentham suggested that if the pain of punishment is greater than the pleasure of

committing the act, the individual will not commit the act. He also suggested that, beyond

legal sanctions, there are other, more informal, sources of pain that occur when an illegal

act is committed, such as gaining a bad reputation. Bentham suggested that individuals

apply a felicific calculus to predict the amount of pleasure that will be produced, while

approximating the moral standing of such action. Scholars of the post-Enlightenment era

such as Becker continued developing theories to explain how costs and benefits influence

an individual's decision to engage in criminal behavior. The work of Beccaria (1764),

Bentham (1789), and Hobbes (1681) influenced the way scholars think about crime and

punishment, and how they study decision-making.

Twentieth Century: Expanding on 'Costs of Crime'

Becker (1968), writing from an economist's perspective, developed an economic

theory of crime, which explained 'offending' as a choice, due to the fact that individuals

would consider the risks and gains (i.e., costs and benefits) of committing a crime. And

when the crime provides the greatest benefit one is more likely to engage in that

behavior. Becker's economic theory takes into account the monetary costs of crime (e.g. cost of arrest, loss of income), as penalties for committing crime, and how the policies surrounding this are used to prevent criminal behavior. This perspective fits well with the deterrence hypothesis, which argues that preventing crime is a matter of perceived costs being higher than potential benefits (Becker, 1967, see also Carroll & Weaver, 2014). For example, if engaging in the criminal activity has higher monetary value than not committing it, the individual will engage in the criminal act. However, if the punishment of being caught increases, this should reduce crime. While monetary costs are one type of punishment of engaging in criminal behavior, it is also important to consider whether potential-offenders and current-offenders understand the certainty and severity of other sanctions.

Rational choice theory is useful for identifying the formal and informal costs and benefits associated with criminal activity and how offender may be deterred from engaging in certain types of behavior (see Cornish & Clarke, 1986; Grasmick & Green, 1989; Nagin & Paternoster, 1993). Perceptual deterrence theory has also been used to examine the decision to commit a crime. This theory focuses on the costs and benefits of committing a crime, but mainly focuses on legal consequences (Paternoster et al., 1987). Perceptual deterrence concentrates on individuals' perceptions of costs and benefits and is empirically testable. Perceptual deterrence research has found support that perceptions of punishment are important to law-abiding behavior (Apel & Nagin, 2017).

While criminologists have focused on formal legal punishment as a deterrent considering how informal sanctions affect a decision to engage in criminal behavior has also been found to be important (Nagin & Pogarsky, 2001; Rebellion, Piquero, Piquero &

Tibbetts, 2010; Wright, Caspi, Moffit & Paternoster, 2004). Researchers have posited that an individual's *perception* of the levels of certainty and severity of consequence influence that individual's decision-making process, perhaps even more than the *actual* levels of certainty and severity of consequence (Paternoster, 1987). By 1987, there were 25 published studies on perceptual deterrence. These studies show evidence of a relationship between a low level of perceived certainty and an increase in criminal behavior. Because many of the studies were cross-sectional, Paternoster (1987) discussed the issue of 'temporal ordering' within the research, meaning that perceptions regarding the certainty of punishment were measured after engaging in criminal behavior, which may affect the perceived levels of certainty. Paternoster (1987) found that the experiential effect of having engaged in criminal behavior does effect perceptual deterrence. In a review of these studies, Paternoster (1987) concluded that the findings related to certainty were strongest in the cross-sectional studies, while these were also the studies with the weakest methodology.

After Paternoster's (1987) review of the literature, the theory of perceptual deterrence went through multiple developments; beginning with the primary recognition that non-legal costs should be also be considered influential (Braithwaite, 1989; Sherman, 1993; Tittle, 1977). Then, Clarke and Cornish (2001) developed an alternative (less economically-derived) version of rational choice theory, which postulated only that people seek the greatest benefits with the lowest cost, rather than engaging in complex deliberative calculations, as suggest by Becker (1968). Other researchers expanded the list of potentially relevant costs to include considering things such as loss of respect (Braithwaite, 1989) and internal feelings of shame (Grasmick & Bursik, 1990). After

these changes surrounding deterrence and rational choice, Pratt and colleagues (2006) examined the existing literature on deterrence. Pratt, Cullen, Blevins, Daigle and Madensen's (2006) well-known meta-analysis on perceptual deterrence found that perceptual deterrence is important in terms of understanding crime, specifically because including the measure of deterrence (e.g. levels of certainty and severity) can show how individual differences are related to costs and benefits.

While a lot of studies on deterrence and perceptual deterrence focus on legal costs William and Hawkins (1986) advocated that in addition to legal costs, there were other consequences individuals consider when making the decision to offend. These non-legal costs include social costs, such as social stigma and the loss of employment (William & Hawkins, 1986). Research concerning perceptual deterrence has focused more on the costs of engaging in crime and has overlooked the potential benefits (Felson, 2011). Therefore, more research was needed to see how individual differences, such as one's level of self-control, and how they impact these perceptions. It is also important, however, to consider how the actual experience of punishment impacts the perceived certainty of punishment (Pogarsky & Piquero, 2003).

Stafford and War (1993) discuss punishment avoidance, which is when someone has committed crime in the past and avoided being punished. Experiencing this lack of punishment could then influence and individual's perception regarding the certainty and severity of punishment, which in turn can influence their overall likelihood of committing crime again. Stafford & Warr (1993) acknowledge that punishment avoidance can be difficult to measure, as it is unobservable, and it is the inverse of punishment. This can also become muddled when people engage in more than one type of crime and have

experienced punishment for one type but not the other(s). Subsequently, Stafford and Warr (1993) reconceptualized deterrence, into two types; general and specific deterrence. General deterrence is the overall threat of legal punishment with no punishment experience, while specific deterrence is when someone has had direct experience of punishment (Stafford & Warr, 1993). This reconceptualization allows there to be a distinction between 'experience with punishment' and 'no experience with punishment,' which allows deterrence to be applied to all individuals.

While deterrence theory is commonly used as a theory of crime control, it is important to understand the decision to engage in criminal behavior. The decision to engage in criminal behavior cannot be explained without understanding how the perception of sanctions (costs) and benefits impact the individual's decision to commit the criminal act. While deterrence presents the importance of certainty and severity of punishment, rational choice theory is important to understanding criminal behavior, more specifically the decision to engage in criminal behavior.

Rational Choice and Criminal Decision Making

Contemporary rational choice theory, or the refocusing on decision making, was largely developed to further understand the details of the processes by which individuals engage in crime. Rational choice in the modern era is rooted in the foundational work of Cornish and Clarke (1986). In *The Reasoning Criminal*, they posited that individuals consider the risks, rewards, and opportunity structure of engaging in a criminal act. Still at the core of deterrence, is an assumption of free will and that human behavior is governed by choice. When it come the decision to engage in criminal behavior, Becker (1968) had tackled the issue from the economistic perspective focusing on monetary costs

and benefits, Cornish and Clarke (1986) address a wider range of perceived costs and benefits. The main principle of the theory remains similar, but allows for more dimensions of perceived benefits, and perceived costs. Meaning, if potential offenders think that the benefits of crime are greater than the certainty of formal or informal costs they would be more likely to engage in the behavior (Cornish & Clarke, 1986; Piquero & Hickman, 2002). Rational choice assumes that offenders are rational and consider which behaviors can provide them with immediate pleasure while simultaneously feature a low risk of getting caught. This consideration of not wanting to be caught may also be related to the idea of perceptual deterrence, as the actions of individuals are affected by their perception of how likely punishment would be.

Rational choice theory also assumes that offenders are goal-oriented, which leads them to rely on a level of rationality to compare costs and benefits before they act (Cornish & Clarke, 1986). Cornish and Clarke (1985) state that not all individuals are completely rational. This is the core concept of 'bounded rationality,' which occurs when someone is considering costs and benefits but does not have the full or correct information to make that comparison (Cornish & Clarke, 1987). More specifically the bounded rationality hypothesis states "behavior is reasoned within constraints, but not necessarily rational in the strict expected utility maximization sense" (Johnson & Payne, 2014. pg. 172). Reynolds (1996) put forth that criminal acts are not irrational; rather, individuals compare the costs and benefits, such as getting caught and being punished. Reynolds believed that benefits made crime more attractive for some, but he did not believe that any other social factors influence criminal behavior.

Cornish and Clarke (1987) furthered the application of rational choice by discussing how rational choice extends beyond choosing one criminal behavior over another and includes noncriminal alternatives. For instance, there is the criminal activity of driving while intoxicated that does not have other illegal alternatives -- this alludes that criminal behavior may only be considered once all legitimate methods are discarded (Cornish & Clarke, 1987). As the environment and situation can vary based upon the type of crime, there will be varying costs and benefits (Cornish & Clarke, 2001). Cornish and Clarke (2014) posit that rational choice can weigh in on how previous decisions can be related to decision-making, and that rational choice can provide a framework for other theories. It is important to consider the situational and environmental factors that can influence decision-making.

Cornish and Clarke (2006) discuss the six core concepts of rational choice. The first is that criminal behavior is purposive, meaning that individuals have needs and desires and their beliefs influence how they go about satisfying these needs. Therefore, actions such as criminal acts are deliberate, and the purpose is for the offender to satisfy their needs and desires. Another concept is that criminal behavior is rational, as it is assumed that people use some form of rationality when making decisions. Rationality is different from perfect rationality, as there are circumstances that surround decision-making that is less than ideal, which in turn leads to "bounded rationality."

They also discuss the concept that criminal decision-making is crime-specific, stating "crime is often treated as though it were one unitary phenomenon, rather than a set of diverse behaviors" (Cornish & Clarke, 2006, p.26). Different crimes come along with different motives and benefits, which indicates that there are different factors offenders

consider depending on the circumstance. For example, there would be different things to consider when deciding to commit robbery compared to joyriding, such as the likelihood of being caught and the different potential sanctions.

The concept of criminal choices falls into two groups; involvement and event decisions. Event decisions are the decisions of preparing, carry out and conducting the crime, while crime involvement is concerned with the initial decision to commit a crime, to continue in crime, and to desist. These two types of decisions are also crime-specific. The initial decision to commit a crime, to continue to engage in crime, and to desist are the three stages of development that are examined within the concept that criminal events unfold in a sequence of stages (Cornish & Clarke, 2006). Cornish and Clarke (2006) conclude that the concepts of rational choice are all working assumptions, with the purpose of examining the circumstances surrounding the decision to engage in criminal behavior.

The Study of Deterrence, Rational Choice, & Offending

Studies focusing on deterrence were conducted throughout the 1970s, before scholarly interest in deterrence began to fade. In the later 1980s and early 1990s, rational choice and offender decision-making research gained popularity and reignited interest in deterrence (Tibbetts & Gibbson, 2002). One new element of these studies was the movement away from asking about the certainty of "someone" being caught committing a crime, to one that is closer to the utilitarian paradigm, by asking the likelihood "you" would be arrested if "you committed the crime."(Grasmick & Green, 1980). Asking individuals about themselves was a more direct measure and was identified to be a more accurate predictor of involvement in criminal activity (Grasmick & Green, 1980). This is

important as individuals differ on how severe they view different punishments. For instance, one person may feel that having to pay a fine is more severe than spending a few days in jail. A study supporting these differences is Sherman's (1993) study on arrest as a deterrent for domestic violence. This study provides support for the indication that those who have more to lose see the sanction of being arrested as more severe. For example, those who were employed saw arrest as a deterrent. Sherman's study indicates that experiencing a punishment such as arrest, can have effects on future behavior. Other research has found that when individuals have a stake in conformity, such an employment or that are married will be more deterred by sanctions (Sherman, Smith, Schmidt & Rogan, 1992). These stakes in conformity function as informal social control and also give individuals more to lose.

Grasmick and Green (1980) argued that previous research on deterrence had major measurement issues regarding predicting sanctions. It was put forth that a person's perception of their own likelihood of being caught and punished was better at predicting behavior than an individual's views on the likelihood of someone else being caught and punished (Grasmick & Green, 1980). Additionally, Grasmick and Green (1980) also state that if one views the severity of punishment as severe this will not impact their decision to engage in criminal behavior unless the individual believes there is a substantial certainty of being caught. A methodological advancement in deterrence research occurred in the 1990s, as Grasmick and Bursik (1990) introduced self-reporting projected criminal involvement.

In the mid-1990s, there was an increase in the number of studies that examined the effects of rational choice. By the late 1990s, however, the amount of research on

rational choice had declined. Studies began to argue that rational choice should be incorporated into criminological theories, as rational choice was significant in addition to a time-stable individual propensity measure such as self-control (Birkbeck & LaFree, 1993; Nagin & Paternoster, 1993). Nagin and Paternoster (1993) found that perceived costs and benefits were significant, even when controlling for self-control, amongst a sample of college students. The results indicated that perceived benefits were positively related to the intention to offend, while sanctions were negatively related to the intention to offend. Building upon this study Piquero and Tibbetts (1996) used a specified model of rational offending that incorporated third-person scenarios. The study found that low self-control was related to shame and perceived pleasures (benefits) but was not related to perceived sanctions (costs). Piquero and Tibbetts (1996) suggested that this needed to be further explored with different offenses and situational characteristics.

Rational choice studies have spanned a wide range of offense types, such as burglary, sexual assault, corporate crime[1], and crime committed while intoxicated. Bachman, Paternoster, and Ward (1992) examined deterrence and rational choice related to sexual assault on a sample of males, relying on self-reported probability that they would commit sexual assault based on five scenarios. The likelihood of being sanctioned was related to their probability, as well as their moral beliefs. This study provides further support that along with individual level differences rational choice is significant.

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[1] Studies on rational choice and corporate crime focus on the subjective expected utility model (Becker, 1969). Individuals have their own perception of how likely it will be that they will get caught, which may differ based upon their socioeconomic status (Mehlkop & Graeff, 2010). Paternoster and Simpson (1996) found a relationship between moral inhibitions and cost/benefits calculations for white-collar crime. More specifically, threats of informal and formal sanctions, as well as moral evaluations and organizational factors were all related to the intentions to commit crime. Studies have also focused on organizational deterrence for committing corporate crime (Simpson & Koper, 1992; Vaughn, 1999).

Two popular criminal acts that have used rational choice to examine the decision-making are robbery and burglary (e.g., Feeney, 1986; Rengert & Wasilchick, 1989; Wright & Decker, 1994). Similarly-worded scenarios have often been used in a number of the studies that examine decision-making (e.g., Bouffard, 2002; Exum, 2002; Nagin & Pogarsky; Piquero & Tibbetts 1996; Pogarsky, 2002). Support for rational choice can be seen in Rengert and Wasilchick's (1989) analysis of burglars. Their sample reported the probability that they would burglarize a home given various probabilities of risks (costs) and rewards (benefits). Rengert and Wasilchick (1989) found that burglars used bounded rationality, as they are not able to precisely compare all the costs and benefits. This is just one of the numerous studies that examine the decision-making of offenders.

Feeney (1986) found that those who committed robbery made their decision to commit the crime in a rational way based upon their needs and wants. In Wright and Decker's (1994) examination of burglars' decision-making process, they used a sample of actively offending burglars. The burglars discussed their motivations for making the decision to offend based on selecting a target, searching a residence and determining what they will do with the stolen goods. It was found that these decisions were influenced by substance use and that these individuals do not often consider potential sanctions.

Even in 2016, scholars were still debating the generality of rational choice, focusing disproportionally on the costs and less on the benefits (Loughran, Paternoster, Chalfin & Wilson, 2016). While it was evident that costs are a vital part of the theory, benefits have been shown to be important in decision-making, usually while considering benefits as monetary in type. For instance, Piliavin and colleagues (1986) found that rewards were related to criminal involvement and Uggen and Thompson (2003) found

support for the notion that higher monetary rewards for engaging in crime are more likely to result in continued engagement in criminal activity. Loughran and colleagues (2016) conducted an inclusive test of rational choice, using individual-level panel data, including both social and personal costs, while also relying on self-reported criminal behavior. The results supported the theory of rational choice, as well as the idea that, for these juveniles, the costs and benefits were significant for offenses related to drugs, violence and property.

Rational choice has evolved from a narrow model, which aligns with the economic model, in that, individuals would behave in the way expected based upon the risks and reward engaging in a specific behavior (Brezina, 2002). This narrow model is limited as it is not always realistic due to situations of uncertainty. The wide model of rational choice considers that the situation in which offenders decide to engage in illegal behavior is not without uncertainty therefore, offenders have "bounded rationality." This model highlights the significance of perceived risks and rewards (Brezina, 2002).

Rational choice and deterrence have guided the research on criminal decision-making. Researchers have found that costs and benefits impact the way people make decisions but there are formal and informal costs and benefits that are significant predictors (Feeney, 1986; Loughran et al., 206; Piliavin et al1986; Uggen & Thompson, 2003). Additionally, it has also been established that certainty and severity of costs and benefits are also important (Grasmick & Green, 1980; Nagin & Paternoster, 1993). Understanding that these theories are important to offender decision to engage in criminal activity, researchers have incorporated the elements of these theories into decision-making research using a variety of methods. Additionally, within the decision-making

literature there has been studies that use both samples of college students and offenders, but there is limited evidence to suggest that students' decision-making is an adequate representation of offenders' decision-making.

Criminal decision-making

Methodologies.

Scholars of rational choice theory have studied offender decision-making using a variety of methods while examining different criminal activities among different populations. One population that are frequently employed are college students (e.g. Bouffard, 2002; Exum, 2002; Nagin & Pogarsky; Piquero & Tibbetts 1996; Pogarsky, 2002). While other samples have also used offenders (for example, see Bouffard & Exum, 2013). These two samples are particularly important as they are the most widely and readily available. In addition to the variation that exists across samples, there are primarily three different research methods that have been commonly used: ethnographic studies, panel studies, and hypothetical vignettes. Each of these methods has their own strengths and weaknesses which present researchers with specific advantages and opportunities. For example, criticisms of ethnographic and panel studies led to the popular method of hypothetical scenarios being used to study decision-making. The various methodologies for studying the offender decision-making process is presented here (See Appendix A for study classifications).

Qualitative Studies

Ethnographic and qualitative studies are used to study offender decision-making in order to acquire a detailed understanding of the offenders' accounts (e.g., Tunnell, 1992; Shover, 1970; Wright & Decker, 1994). Ethnographic studies are time consuming,

and the researchers immerse themselves into the culture of the individuals in which they are studying. Shover (2010) explains that autobiographies and life histories are significant methods used in ethnographic research. There are limitations to this, as it is not always easy to obtain self-narratives from offenders. Logically, the exploration of the offenders thought process before, during, and after the commission of their crime is an avenue toward understanding the decision-making process as a whole. Interviews that are used to study offender decision-making allow the participants to answer both open and close ended questions, which can also allow the researcher to ask for clarification and more detail. These types of studies are useful for find out how people think and act in certain situations (Bachman & Paternoster, 2017).

Shover used interviews in a number of his studies (1983; 1996) examining known offenders' involvement in property crimes. Shover conducted ethnographic studies, and used in depth interviews, autobiographies and life histories. Shover (1983) used interviews, arrest records and autobiographies to examine what led to changes in criminal behavior, which included their aspiration/goals that influenced their criminal behavior previously. In his 1996 book, Shover provided readers with how the property offender he interviewed made choices. In this study the offenders' life experiences were presented and showed how their experiences influenced the way these property offenders weighted consequences.

An additional example of using interviews can be found in the work of Tunnell (1992) who conducted interviews with offenders who were incarcerated in jail or prison. This work began by asking the offenders what they were thinking at the time they engaged in crime. Tunnell (1992) reported the offenders' responses verbatim and found

that offenders do not think about punishment when they are engaging in crimes in which they feel they will have little chance of being caught. Overall, he found that offenders make decisions informally, based more upon what they believe, rather than actual facts (Tunnell, 1992). One critique of this study is that the offenders may have embellished their responses. A way to improve upon this is to get closer to the actual criminal activity. An additional critique is that the findings may not be generalizable to larger samples, as these studies have small specifically selected samples.

Similarly, in *Burglars on the Job,* Wright and Decker (1994) interviewed a sample of burglars who were not incarcerated. They were able to actually see places the burglars may burglarize and observe how the location makes for a good or bad target, and how they would search the residence. They found that the offender frequently made their decision to engage in burglary based upon their need for alcohol and drugs and that the threat of sanctions was not often considered.

Another study that interviewed active offenders was Topalli (2005), who interviewed drug dealers, street robbers, and carjackers. Another benefit to interviewing those who are not incarcerated is that the respondents are not inhibited by an institution, which can allow for responses that are more honest. These ethnographic studies are valuable for studying offender decision-making, in that the researchers are able to gain valuable details on the offenders' decision-making process. While this method is valuable for obtaining detailed information, the limitation is that the process is very time consuming and limited in sample size.

Cross-sectional & Longitudinal Studies

Cross-sectional and longitudinal studies have also been used to study rational choice and decision-making (e.g. Grasmick & Green, 1980; Loughran et al., 2016; Matsueda, Ross, Kreager, Derek & Huizinga, 2006; Piliavin, Gartner, Thornton & Matsueda, 1986). Cross-sectional studies provide a "snap shot" of individuals' attitudes or perceptions at a single point in time. Longitudinal studies can include surveys or panel studies. Panel studies are able to measure changes in attitudes or perceptions, as these studies measure the same thing on the same set of subjects at different times.

Panel studies account for limitations associated with cross-sectional studies by allowing causal analysis regarding perceptions of risks, rewards, and behavior (Paternoster, Saltzman, Waldo, & Chiricos, 1982). Cross-sectional designs often use current perceptions of risks and rewards to predict prior criminal behavior; this is problematic as experiences with prior punishment or getting away with a crime can influences perceptions (Paternoster, 1987). Grasmick and Green's (1980) study measured intentions to offend as a dichotomous yes/no plan to offend in the future, as well as their participants' perceived certainty and severity of legal arrest if they were to engage in criminal behavior.

One study that used the panel design to capture correct causal ordering on sanctions and crime engagement was Piliavin, Gartner, Thornton, and Matsueda (1986). Their sample consisted of offenders who had all experienced the sanction of incarceration and who were enrolled in a work program in the community. These adult and youth offenders were asked what they expected as returns from engaging in various illegal and legal behaviors. They were also asked about the amount of money they expected to make

from illegal versus legal activities and the opportunity of each, as well as the respect they

would gain from engaging in each type of activity. Lastly, they were asked what they

thought was the likelihood they would be punished for engaging in a $1,000 crime. In the

second wave of the survey, the offenders were asked if they had engaged in any illegal

activities or if they were arrested. It was found that rewards were significant, but risk

(sanctions) was not (Piliavan et al., 1986).

Similar to Piliavan and colleagues (1986), Loughran and colleagues (2016)

conducted a longitudinal study of adolescent offenders that had multiple follow up

periods. Their study examined social and personal costs of crime, the probability of

getting caught, and self-reports of criminal behavior. More specifically, the participants

were asked about how likely it would be for them to get caught for fighting, robbery,

stabbing, breaking into a dwelling, stealing, vandalism, and auto theft (0 = no chance; 10

= certainly be caught). Additionally, they were asked how thrilling they thought it would

be, how likely it is they would lose respect, how likely it would be that they would

benefit socially, and how much money they think they would earn. The results found

support for rational choice, even for those who had engaged in serious criminal activity

(Loughran et al., 2016). One limitation of longitudinal studies is that they assume the

stability of costs, and thus may use perceptions from a year before the criminal behavior

occurs, rather than at the time they are making the decision to offend (Bouffard &

Niebuhr, 2017; Exum & Bouffard, 2010).

Hypothetical Vignettes

Hypothetical vignettes address some of the limitations of the previous methods,

such as accounting for time order, and providing details about scenario in which the

criminal behavior would take place. This method provides participants with a

hypothetical scenario about engaging in criminal offenses, which increases the reliability

of participant responses (Exum & Bouffard, 2010). After reading the vignette,

participants are asked their perceptions regarding the certainty and severity of risks and

benefits that could occur if they engaged in the criminal offense. This is used to predict

the participants' likelihood of engaging in that behavior. Another benefit to using

hypothetical vignettes is that they allow for causal order to be modeled (Bouffard &

Niebuhr, 2017). By 2010 there were over 30 studies published that used hypothetical

scenarios to examine decision-making (Exum & Bouffard, 2010). These studies have

examined a wide range of behaviors from academic cheating, sexual assault, physical

assault and driving while intoxicated (e.g. Bachman et al., 1992; Bouffard, 2002b;

Bouffard, 2007; Nagin & Paternoster, 1993; Nagin & Pogarsky, 2001; Rebellion,

Piquero, Piquero, & Tibbetts, 2010).

One criticism of using hypothetical vignettes is that these studies do not measure

actual engagement in criminal behavior, but a self-reported *intention to engage* in the

behavior. However, support for using these types of self-reported measures can be found

in the theory of reasoned action, and the theory of planned behavior (e.g., Ajzen, 1990;

Ajzen & Fishbein, 1980). These two theories both postulate that the results of

hypothetical decisions would be similar to that made in the real-world if circumstances

are comparable (Ajzen, 1991; Exum & Bouffard, 2010). One study on marijuana use,

found support for these theories, as they identified a relationship between the

respondents' intentions and their behaviors (Armitage et al., 1999). Overall, asking an

individual to report their likelihood of engaging in a behavior is an effective way to

predict future behavior (Exum & Bouffard, 2010). Other methodological issues that are considered when studying decision-making are: the question types.

Another important aspect of studies to consider is how the questions are formed. One example, particular to decision-making, would be allowing the participants to report their own consequences versus providing them with a list of consequences to select from. Studies such as those conducted by Paternoster and Simpson (1996), and Pograsky and Piquero (2004) provided the participants with a list of consequences created by the researchers. Research has examined the use of closed-ended versus open-ended questions and has found that open-ended questions capture ideas in the current thought of the participant (Schwarz & Oysterman, 2001). Furthermore, providing participants with a list of consequences compared to letting them develop their own may bias the results, as it does not measure the full scope of the consequences one would use in the decision-making process (Bouffard, 2002a). Bouffard (2002a) found evidence that the method of allowing participants to generate their own consequences should be used, as many participants generate consequences that may not be offered as options in the studies when the consequences are provided to the participants. There are some limitations to open-ended questions such as it takes more time and effort, and answers may not be relevant, and some may leave it blank.

Upon examining the two different methods, Bouffard and colleagues (2010) found that allowing participants to generate their own consequences was useful for capturing a wide range of anticipated consequences. While the two methods had similarly reported levels of certainty and severity of costs, those who generated their own benefits of engaging in the behavior reported lower levels of certainty and severity of the benefits

(Bouffard et al., 2010). Other studies have also found that allowing participants to report their own costs and benefits results in answers that are not commonly included in predetermined lists created by researchers (e.g., Bouffard, 2002a, 2007). As there are notable differences between the researcher-generated costs and benefits and the participant-generated costs and benefits, there is an advantage to having the participants generate their own. These benefits include avoiding biases, as well as acquiring a more accurate picture of what the participant would actually consider when making a decision (Bouffard & Niebuhr, 2017).

Offenders vs. Non-offenders Decision-making Research

Student Samples

As previously noted, college student samples are frequently used in decision-making studies (Bachman et al., 1992; Bouffard, 2002; Carmichael & Piquero, 2004; Exum, 2002; Loewenstein et al., 1997; Nagin & Paternoster,1993; Paternoster & Simpson, 1996; Paternoster & Simpson, 1996; Piquero and Tibbetts, 1996; Pogarsky, 2002; Tibbetts & Herz, 1996; Wright, Caspi, Moffit, & Paternoster, 2004). These studies have examined decision-making with respect to a variety of offense types, including sexual assault, physical assault, shoplifting, and driving while intoxicated.

One methodological refinement that has occurred is that studies originally provided participants with the costs and benefits to consider as well as the level of risk (or certainty), and then researcher began to allow the participants to generate their own perceived certainty and severity. Bachman and colleagues (1992) used a sample of male students and gave them hypothetical scenarios and questions about researcher generated formal sanctions of getting kicked out of school and being arrested, the informal

sanctions of moral beliefs and self-respect, and asked for their self-reported likelihood of engaging in the behavior described in the scenario. The scenarios in this study did not specify the probability of receiving a sanction but allowed the participants to come up with their own perceptions of risk. The participants' perceived risk of experiencing a formal sanction reduced their reported likelihood that they would engage in sexual assault. The informal sanction of self-respect was not significant, although moral beliefs were significant.

Nagin and Paternoster (1993) conducted another study that provided the participants with predetermined consequences. In this work, they provided their participants with a scenario describing a hypothetical character engaging in theft, sexual assault, and drunk driving. The researchers provided the participants with five different potential consequences; arrest, kicked out of university, lose respect from friends, lose the respect of family, and lose job prospects. Of the sample of about 700 college students, 63% said there was no possibility of them committing theft, 33% reported no possibility of driving drunk, and 85% reported no chance of engaging in sexual assault. The findings were in line with rational choice as the consequences were negatively related to the intentions to offend. Nagin and Paternoster (1993) also examined the impact of self-control and found that controlling for this individual difference, costs and benefits were still significant in the decision to offend. This study was the first to considerer that individual differences and situational factors were important to decision-.

Later, Clarke and Felson (1993) suggested that there were individual variations in costs and benefits, as researchers began examining how various individual-level factors such as self-control might relate to the perception of consequences. For instance, Piquero

and Tibbetts (1996) examined the effect of low self-control on the level of perceived certainty and severity. Their results did not indicate an indirect effect of self-control on offending likelihood, through altered perceptions of certainty and severity.

Wright, Caspi, Moffit, and Paternoster (2004) also explored how self-control might affect perceived sanctions, by examining the relationship between the perceived risk and costs of sanctions, criminal propensity, and criminal behavior. This study was longitudinal and measured the participants at ages 18-21 and then again at age 26. At each wave, the following measurements were taken; criminal propensity, self-perceived criminality, perceived likelihood of being caught, and the perceived likelihood of social sanctions. The threat of being punished was most relevant for those who were more prone to crime, while the threat of sanctions was small for those with low criminal propensity (Wright et al., 2004).

Many studies focused on the legal consequences of being caught engaging in criminal behavior but do not look at non-legal consequences such as social costs (embarrassment, family would be angry) or losing a job. Nagin and Pogarsky (2001) integrated extralegal consequences into a model of deterrence for college students who were given a survey about drinking and driving. The participants were given a hypothetical scenario and were asked to measure the dollar value (extralegal cost) of being caught. It was found that extralegal factors were as much of a deterrent as legal consequences, and that the certainty of the consequence was more important than the severity. As will be seen in research proceeding this study, extralegal factors became more prominent in examining costs and benefits.

Rebellion, Piquero, Piquero, and Tibbetts (2010) examined the impact of shaming on offending intentions. After reading a hypothetical scenario about a person engaging in a criminal behavior, participants were asked how likely they would be to engage in similar behavior, to report the perceived certainty that they would be caught, and about the level of shame and embarrassment they would feel if their family and friends found out they stole $100. The researchers found that the expectation of shaming had a strong impact on the intention to engage in criminal activity. This study provided support that students consider non-legal consequences when making the decision to engage in criminal behavior, leaving room for further research to identify what other types of non-legal costs individuals may consider (Rebellion et al., 2010).

Another study that examined drinking and driving, using a hypothetical scenario focused on the student's regard for others. Paternoster and colleagues (2017) found that students' who were self -interested were deterred by the threat of sanctions, and those who had higher regard for others the severity of sanctions influenced their intentions to drink and drive. The researchers (2017) also suggest that those individuals who care more about others would be more likely to find social cost more severe (Paternoster, Jaynes & Wilson, 2017).

Up until 2002, the research that examined decision-making provided participants with predetermined consequences. Bouffard (2002b) wanted to improve upon the limitation of providing the respondents with predetermined consequences, as these may not align with what the participant would consider on their own (thereby creating a bias in the results). Bouffard (2002b) allowed the participants to come up with their own costs and benefits after reading a hypothetical scenario about date-rape and drunk driving. In

comparison of the consequences reported by the participants, it was found that participants came up with consequences which had not been used in previous studies. For example, in the date rape scenario, moral consequence was commonly given to participants in other studies, yet only about 5% of participants in this study reported a moral consequence. For driving while intoxicated, the participants reported few social stigma-related costs. Regarding the reported benefits, the respondents reported a few of the same benefits that had been used in previous research.

This study found support for rational choice theory, as costs and benefits impacted offending intentions. It also found that allowing participants to come up with their own costs and benefits shows that there a number of costs and benefits that individuals consider that have not been included in studies where the researcher provided the costs and benefits. Thus meaning, that studies that provide participants with consequences are not getting a complete picture of all the costs and benefits that individuals consider when making decisions. Additionally, even some of the less commonly reported costs and benefits were significantly predictive of offending likelihood, showing the value of allowing participants to self-report costs and benefits (Bouffard, 200b).

While knowing that individuals consider a wide range of costs and benefits, Pogarsky's (2002) study predicted and identified how individual differences affect one's responsiveness to the certainty and severity of sanctions. This study supported that it is possible to categorize individuals based upon their responsiveness to sanctions. Pogarsky (2002) suggested that the next step is to identify individual differences in the perceptions

of the costs and benefits, as well as examine differences in the predictors of the costs and benefits.

After Pogarsky's (2002) suggestion to analyze individual differences related to the types of costs and benefits an individual would report, Bouffard (2007) examined predictors of reporting specific costs and benefits. Bouffard (2007) recognized the value of allowing the participants to identify their own perceived consequences and benefits. In addition to reporting their own consequences and benefits, the participants were asked to generate the level of certainty that the consequence would occur. The college students were provided three hypothetical scenarios on shoplifting, drunk driving, and getting into a fight at a party. Upon examining the cost and benefits reported by the participants, they were found to be different from the costs and benefits that previous studies have provided their participants.

For scenarios involving shoplifting and driving while intoxicated, legal costs were the most commonly reported, while getting hurt was the most commonly reported cost for getting into a fight. The results indicated there were significant relationships between demographic variables and the costs and benefits reported. In one example, males were less likely to report damaging their car as a cost for driving drunk, while older participants were more likely to report hurting someone as a potential cost. Bouffard (2007) put forth the suggestion that future research needed to examine the relationship between individual differences and the costs and benefits for other samples, such as offenders.

Research focusing on the difference between the perceptions of consequences in cases where participants are provided a list of consequences, versus being asked to

generate their own, examined the difference in the participants' perceived levels of certainty and severity (Bouffard, Exum, & Collins, 2010). The participants were randomly assigned either to get predetermined consequences or to generate their own. Participants generated costs such as legal costs, emotional costs, and social problems. Additionally, those who reported their own costs and benefits reported important consequences that have not been included in studies that have provided predetermined consequences. The levels of certainty and severity of costs did not vary between the groups, while the levels of certainty of benefits were lower for those provided by the researcher (Bouffard, Exum, & Collins, 2010). This study provided further support that allowing participants to generate their own costs and benefits gives a more accurate picture as to what individuals think of when making decisions.

Student Results.

The research that has focused on decision-making using student samples has found support for the idea that legal and social factors are significant in the decision to offend. The threat of receiving a legal sanction was found to reduce the likelihood one would engage in criminal behavior (Bachman et al., 1992; Nagin & Pogarsky, 2001, 2002; Paternoster & Simpson, 1996). Informal sanctions such as feelings of guilt and the negative way friends and family may react were also significant deterrents to offending (Bachman et al., 1992; Carmichael & Piquero, 2004; Loewenstein et al., 1997; Nagin & Paternoster, 1993; Paternoster & Simpson, 1996; Piquero & Tibbetts, 1996; Pogarsky & Piquero, 2004; Tibbetts & Herz, 1996). Consistent with rational choice, increases in student intentions to offend were influenced by the offense being perceived as fun, or a

thrill (Carmichael & Piquero, 2004; Exum, 2002; Loewenstein et al., 1997; Nagin & Paternoster, 1993; Paternoster & Simpson, 1996; Piquero & Tibbetts, 1996).

When researchers began to let the students report their own costs and benefits, researchers found that students considered more potential costs and benefits than past research had been providing. Bouffard (2002b) allowed the participants to come up with their own costs and benefits for engaging in date-rape and driving while intoxicated. Legal costs were the most common costs reported for both scenarios. For the date-rape scenario, fear of getting a sexually transmitted disease and/or unwanted pregnancy were the second-most commonly reported costs. For drunk driving, over 50% of the participants reported crashing the car, injuring/killing others, and injuring/killing self. The most commonly reported benefit for the date-rape scenario was sexual pleasure. For driving while intoxicated, getting home safely and having their car were the two most common benefits.

When allowed to self-report costs and benefits the students commonly reported legal costs for all types of scenarios -- e.g. shoplifting, drunk driving, and fighting (Bouffard, 2007). Bouffard (2007) found that, in all but the fighting scenario, legal costs were the most common while getting hurt was the most common in the fight scenario. Social costs were reported by less than 20% of the respondents for all the scenarios. Across the different scenarios, the top two most commonly reported benefits were: having the batteries and saving money in the shoplifting scenario; getting home okay and having their car in the drunk driving scenario; and for fighting, the top two most commonly reported benefits were to deter the other person and gain an emotional benefit.

Overall, respondents still commonly report legal costs, despite there being other costs that play a role in their decision-making, as well as other benefits (Bouffard, 2007).

The results of the studies on college students' decision-making found that allowing participants to self-report costs and benefits gives a complete picture of what individuals consider when making decisions. Additionally, legal costs were found to be commonly reported in the studies. Overall, the studies found support for rational choice in the students' decision-making process, knowing the students do consider costs and benefits when making the decision to engage in criminal behaviors.

Known offender samples

While students are frequently used in decision-making research, there are a number of studies that have used samples of known offenders to examine decision-making. Studies of known offenders have examined decision-making for burglary, carjacking, and drug dealing. Bennett and Wright (1984) interviewed 300 male convicted burglars about their decisions to commit burglaries. From the interviews, it was identified that the majority of the participants decided to offend based upon a need for money. Overall, this study was not able to say to what extent the participants' decision-making was rational.

Wright and Decker's (1997) study on residential burglars was different from Bennet and Wright's study, as they had a sample of active burglars. They also found that the individuals were motivated to offend by their need for money to purchase items like drugs and alcohol. Wright and Decker (1997) were able to find support for the notion that the decision to offend is guided by potential sanctions. Another ethnographic study of burglary found that the offenders would consider the minimum potential gain and assess

risk factors. Yet they classified burglars as being more opportunistic rather than rational (Cromwell, Olson, & Avary, 1991).

Another study examined the relationship between perceived risk of experiencing sanctions and engaging in a number of different crime types (Horney & Marshall, 1992). Using a sample of incarcerated offenders, a total of 1,046 males were interviewed. In this case, the participants were asked about the certainty that they would be arrested, the certainty they would engage in nine different crime types, and their offense history over 36 months for nine different crime types. It was expected that active offenders would have higher perceived certainty of sanctions. However, it was discovered that active offenders had lower perceptions of sanctions if they had not been caught for that type of offense, which is related to Pogarsky's (1987) findings regarding the experiential effect. The perceptions regarding certainty of being caught were rational and were based around how many times they had committed the crime and not been caught (Horney & Marshall, 1992). Horney and Marshall (1992) suggest that this inverse relationship between engaging in criminal behavior and perceived risk is generalizable to studies that have used student samples.

Using predetermined risks and benefits, Hochstetler, DeLisi, and Puhrmann (2007) found that perceptions of risk were not significantly related to criminal offending. Using data from RAND, a survey of inmates, this study indicated that the rewards of offending had greater influence than did the risk factors. Perceptions that crime would be rewarding (e.g., monetary gains) increased the frequency of offending. The more attractive the crime, the more frequent the individuals reported engaging in offending. Also finding support for rational choice and that offenders consider risks and rewards,

Copes, Hochstetler, and Cherbonneau (2012) conducted semi-structured interviews with a sample of 30 known-carjackers who were incarcerated. The carjackers reported that they considered risk, such as the victim's reaction (e.g. fighting back). This allowed them to strategically plan out their crime and contributes support for rational choice, as it demonstrates how offenders consider the risk and benefits of engaging in criminal activity before committing the crime.

Offender Results.

Overall, the studies have found that offenders do consider the risks and benefits of criminal activity (Bennett & Wright, 1984; Wright & Decker, 1997). Although, there is evidence to suggest that benefits play a stronger role in whether the offenders engage in the behavior or not (Hochstetler et al., 2007). The research on offenders indicates that offender perceptions are rational when considering the costs and benefits of committing a crime (Copes et al., 2012; Wright & Decker, 1997). While both college students and offenders have been used in studying decision-making, some researchers argue that the decision-making processes of offenders are unique in comparison with students (Wright, Decker, Redfern, & Smith, 1992; Wright et al., 1995).

Student vs. Offender Decision-making

Few studies have compared the decision-making of known offenders to non-offenders. Decker and colleagues (1995) compared residential burglars to non-offenders. Specifically, they provided their participants with a hypothetical scenario that manipulated the potential risks and rewards of engaging in a burglary. The non-offenders had no intention to offend regardless of the potential risk or reward. For offenders, the risk only had an impact on the likelihood of committing the crime when the rewards were

great and the sanctions were less severe. Under these circumstances, the intentions to offend were higher (Decker et al., 1995). As this study found that there were differences between offenders and non-offenders, studies focusing on rational choice and the costs and benefits have begun to examine whether there are significant differences between the offender and student samples. Decker and colleagues (1995) also suggested that studies using a college student sample may not be an accurate depiction of rational choice and decision-making of offenders.

Bouffard and colleagues (2008) realized there was a gap in the research regarding rational choice and the decision-making process using actual offender samples in order to see if samples of offenders are generalizable to samples of college students and filled this gap. Their study examined shoplifting among a sample of college students and institutionalized juvenile offenders. Additionally, the male participants were asked about engaging in sexual coercion. The reported probability of engaging in the hypothetical offenses was significantly different between the juvenile offenders and college students, with the offenders reporting significantly higher probabilities.

The two samples were asked to develop their own list of costs and benefits for the offending scenarios, as well as the report on the levels of certainty and severity of each cost and benefit. Regarding the shoplifting scenario, both groups most frequently reported legal costs. While students were more likely to report that they would feel guilty (48%) than the juveniles (16%), the offenders (7%) were more likely than students (0%) to report they would be embarrassed. Both samples most commonly reported having the batteries as a benefit, though the juvenile offenders were more likely to report getting away with it as a benefit (30%) than the college students (17%). However, there were no

significant differences between the average number of costs and benefits reported (Bouffard et al., 2008).

The sexual coercion scenario was only given to the males in each sample. Both samples reported sexual pleasure as the most common benefit. While both samples reported legal costs as the most common cost, there was still a difference between the number of students (75%) and offenders (58%) that reported legal costs. Overall, the results indicate that college students and juvenile offenders are significantly different. In this case, age could have played a significant role in why the two groups were so different (Bouffard et al., 2008).

Comparing the costs and benefits from more of a rational choice perspective, was done by examining how the certainty and severity of the costs and benefits impact the perceived likelihood of engaging in the activity described in the scenarios. For the shoplifting scenario, the average certainty and average severity of costs were negatively related to the likelihood of shoplifting for the college students. However, for the benefits, the average certainty and average severity were related to a higher likelihood of shoplifting for both samples. For sexual coercion, the average severity of the costs was negatively related to the likelihood of engaging in sexual coercion among the college students (Bouffard et al., 2008).

All of the costs and benefits, controlling for individual factors increased the offending likelihood for both samples. More specifically, for the sexual coercion scenario, the severity of costs decreased the likelihood of offending for the students, making all cost severity a significant deterrent for the student sample but not the juvenile offender sample. Overall, the two groups reported different types of costs and benefits.

For this study, one thing to acknowledge that may have played a role was the age difference between the juvenile offenders and college students. Evidence shows that rational choice worked differently for the two groups; all the costs reported were significantly related to the college students' likelihood of engaging in criminal behavior. While these two groups differed, Bouffard and colleagues (2008) called for more research to be done to examine the generalizability for college students to other groups.

Bouffard and Exum (2013) conducted a study that compared the costs and benefits (as well as responsiveness to these consequences) of a hypothetical scenario involving driving while intoxicated. In doing so, they compared a sample of incarcerated adult offenders to a sample of college students. After reading the hypothetical scenario about drunk driving, participants were asked to self-report the costs and benefits of engaging in drunk driving. The participants were asked to report the certainty and severity of each cost and benefit they reported.

Bouffard and Exum (2013) categorized costs and benefits. For example, the category of legal costs encompassed things such has going to jail. There were significant differences between the offenders and college student samples, including on age, education and criminal history. In particular, the offenders were older, had completed less school, and had more prior arrests. The offenders were also 80% male, while the student sample was comprised of only about 38% males.

Regarding the self-reported costs, six out of nine costs and benefits were significantly different (6-7%) between the two groups. The benefits of "will have the car" had the largest difference (12%) in the number who reported that benefit, with a larger number of offenders reporting it as a benefit. There was a significant difference between

the two groups regarding the perceived certainty of social costs, and the certainty of the benefit of not having to bother a friend for a ride. In addition, there was a significant negative correlation between the certainty of the costs and intentions to drive drunk for both samples.

The results suggest that decision-making related to driving while intoxicated is similar for college students and offenders. For instance, both samples reported similar costs and benefits, as well as similar values for perceived cost certainty. The correlations between the reported costs and benefits and the likelihood to drive drunk were similar between the students and offenders. This study provides support for using student samples in decision-making research (Bouffard & Exum, 2013). Overall, results suggest that student and offender samples are comparable.

Purpose of Current Study

While most of the research on criminal decision-making has used samples of college students, Bouffard and Exum (2013) provided support that even though there were some differences between offenders and college students, using student samples is useful in understanding the criminal decision-making process, yet no other studies to-date have retested this finding. As much of the research has used students it is important to know if the results of student samples are providing results to those of actual offenders. This is important as students are easily available to researchers as opposed to offender samples, so knowing how the two samples compare can inform the sampling for future research.

The current study will replicate Bouffard and Exum's (2013) study comparing the decision-making processes using samples of college students and incarcerated, felony-

level offenders, examining the self-generated costs and benefits from a hypothetical drunk driving scenario. Using the same methodology of hypothetical vignettes and self-generated costs and benefits the current study will also expand on previous research by examining a hypothetical robbery and fighting (violent assault) scenario. This will add to the literature by showing if students and offenders are similar in regard to decision-making for other types of offenses. The study will test whether decision-making between student and offender samples are similar for all three crime types. The study will examine three questions about college students' and the offenders' decision-making processes.

Research Questions

1. Do male offenders differ from male college students with regard to their perceptions of the costs and benefits of engaging in (1) driving while intoxicated, (2) committing robbery, and (3) getting into a fight?

2. Do male offenders differ from male college students with regard to the level of perceived certainty and severity of the consequences they report for each crime type?

3. How do the male offenders' and male college students' level of perceived certainty and severity of costs and benefits impact their self-reported likelihood of engaging in these types of crime?

CHAPTER III

Methods

This research has three primary purposes. First, the current research will analyze whether male college students and offenders differ on their reported costs and benefits of driving while intoxicated, committing robbery and getting into a fight (assault). Second, an examination will be conducted to determine whether these samples differ regarding the perceived certainty and severity of the costs and benefits. Lastly, the study will examine whether the reported costs and benefits impact the participants' reported likelihood of engaging in the three types of crime and how the results compare across the two samples. This is done using data from an original data collection project which was a survey that contained that hypothetical vignettes.

Procedure

Sample

This study is the product of an original data collection of a convenience sample of 428 incarcerated male offenders and 112 male undergraduate students. The Institutional Review Board approved the self-report survey on decision-making to be distributed to a sample of both, incarcerated offenders, and college students. The sample of incarcerated males was collected at a prison intake facility in a large southern state where the offenders are screened before being sent to another designated facility (wherein they serve their sentence). The research team went to the intake facility on a number of occasions in the summer of 2014, when the new group of offenders were at an orientation session. The offenders were informed that participation was voluntary and there would be no compensation for participating. The surveys were read aloud to the offenders to help

with any reading difficulties any participants may have. This was an ideal prison facility to obtain a sample, as it makes up a portion of the broader prison sample across the state.

The convenience sample of undergraduate students was collected in introductory level criminal justice courses in a large southern university during the fall semester of 2014 and spring semester of 2015. The same survey provided to the offender sample was given to both male and female students (n=312). The surveys were handed out during class time, and students were made aware they were voluntary; however, students were offered extra credit from their instructors for participating. For the purpose of this study, we only used the male undergraduate students (n=112), as the sample of offenders is entirely male.

The survey contained three hypothetical scenarios (vignettes) for the participants to relate to. Hypothetical scenarios have been used frequently throughout the last few decades within the literature examining rational choice and perceptual deterrence theories (Bouffard & Niebuhr, 2017; see also Bachman et al., 1992; Bouffard & Exum, 2013; Rebellion et al., 2010). There are advantages of using hypothetical scenarios, including the ability to have all the participants imagine a similar situation in which they consider engaging in the offending behavior (Exum & Bouffard, 2013). Additionally, the use of hypothetical scenarios avoid temporal ordering issues by presenting the scenario and then asking about perceptions of costs and benefits, and offending likelihood. This method also allows for the measurement of perceptions regarding engagement or non-engagement in the behavior (Exum & Bouffard, 2013).

In this survey, the hypothetical vignette scenarios included driving while intoxicated, robbing a store, and getting into a fight in a parking lot. For the purpose of

replication, the driving while intoxicated scenario was the same vignette that was used by

Bouffard and Exum (2013). The scenario read:

> Suppose you drove by yourself one evening to meet some friends at a bar that is about 10 miles from your house. You have been drinking throughout the evening, and by the time you're ready to leave, you suspect your blood alcohol level might exceed the legal limit. Suppose 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, you will have to return early the next morning to pick it up.

This second vignette, focusing on the decision to engage in robbery, featured an

experimental manipulation in which the surveys varied the number of clerks in the store

and whether or not there was a security camera present. Participants in the sample were

randomly assigned different versions of the survey to ensure unbiased exposure to the

manipulations. The data collected regarding these manipulations were examined, and the

experimental condition did not have any significant effect on the number or types of

costs/benefits reported or the reported likelihood, so the results were collapsed across the

experimental conditions.

The second vignette in the survey was the robbery scenario, which read as

follows:

> You loaned your car to a friend, who parked illegally and got your car towed. Now you need $300 dollars to get it back, but you don't have that much in hand and payday is still ten days away. As you think about where to get the money you need, you consider holding-up a convenience store in the area. You walk into a nearby store one night to check it out. The place is practically empty and there (*is one clerk/are two clerks*) working at the register. There (*does/does not*) appear to be a security camera in the store. There are a lot of signs in the windows, making it hard for people outside to see in.

The third vignette presents the reader with a situation that may lead to a fight after

leaving the grocery store and read as follows:

Suppose you just walk out of the grocery store and are heading to your car in the lot. A guy is backing his car out of a parking space and his side mirror hits you in the side. You call out "Hey!" and slap the side of the car to get the man's attention letting him know that he just hit you with his mirror. He stops behind you blocking you in and then gets out, comes up to you and yells in your face "What's your fucking problem?"

After reading each of the hypothetical scenarios, the participants were asked to report any potential costs that may occur if they committed the crime. They were given 6 blank lines in which to write their own perceived consequences. Participants were also asked to address how likely each cost was to occur (certainty), and how bad it would be for them if that cost was to occur (severity). The participants were asked to report their perception of the probability (as percent chance) of certainty and severity using a scale ranging from 0% (not at all) to 100% (very). Additionally, respondents were asked how influential these costs would be to their decision to engage in the crime, with responses ranging again from 0-100%.

The participants were provided additional blank lines to list potential benefits that of committing the crime, as well as how likely each benefit could be achieved (certainty), how good it would be if the benefit was achieved (value), and how important these factors would be to their decision using a scale ranging from 0% (not at all) and 100% (very). Similarly, the participants were asked how likely it is they would engage in each type of crime, with responses allowed to range from 0% (not at all likely) to 100% (very likely). In addition to the hypothetical scenarios, the survey also had questions about demographic information, including age, race/ethnicity, marital status, level of education, and criminal history (see Table 1).

Table 1

Demographic and Sample Characteristics

Variables	Offenders N=428	Students N=112
Age		
Mean (s.d.)	33.2 (10.9)	20.8 (2.7)
Race & Ethnicity		
% White	33.9	34.7
% African American	29.2	17.9
% Hispanic	28.3	37.5
Marital Status		
% Married	26.9	4.5
% In a relationship	8.6	31.3
% Single	25.5	60.7
Education		
% some college education	15%	100%
Criminal past		
# of adult arrests	8.3	0.5

The sample included 428 incarcerated males and 112 male undergraduate students. The participants were asked to fill out basic demographic questions (age, race/ethnicity). The average age of the incarcerated males is 30.22 years (s.d.=10.9), and the average age of the college males is 20.8 years (s.d.=2.7). The race and ethnicity of the incarcerated sample is 33.9% White, 29.3% African American, and 28.3% Hispanic. The student sample is 34.7% White, 17.9% African American, and 37.5% Hispanic. The participants were also asked about their current relationship status. Of this sample of offenders 25.5% where single, while 8.6% were in a relationship, and 26.9% were married. The majority of the student sample is single (60.7%), while 31.3% are in a relationship and 4.5% are married. Not surprisingly, the offenders (8.3) have more adult arrests than the students (0.5). There is also a large difference between the education levels of the two samples, with only 15% of the offenders having some college education.

Measures

Key Variables

Perceived Costs. For each of the three scenarios, the participants were asked to list potential "bad things," or costs, that could occur if they engaged in that specific crime. This strategy has been used by Bouffard (2002), Exum and Bouffard (2010), Pogarsky and Piquero (2004), and wherein participants are provided blank lines in which to generate their own perceived costs. In the current study the participants were given blanks lines in which to generate their own perceived costs that could occur if they engaged in the criminal activity described in the hypothetical scenarios.

The first scenario presented was the driving while intoxicated scenario. The cost responses given by the respondents were each coded into one of several categories; legal,

wreck the car, social consequences, family consequences, hurt/kill self, hurt/kill others, and miss work. The responses were coded into several categories as there were identifiable themes seen in the responses. This allows for the examination of the "types" of responses to be compared between the two groups. Responses coded as "legal" consequences included those such as "getting arrested", "going to jail", and "paying a fine." Responses coded as "social" consequences included items such as "friends thinking poorly of you;" while family consequences included items indicating that family or significant others would be mad or disappointed. For more information on how the responses were coded refer to Appendix B. Some of these categories are similar to those found in studies that used researcher-generated costs (e.g., legal, social). The method used to code the participants' response was the same as that used by Bouffard and colleagues (2010), which was based upon common themes found within the participant-generated answers.

The average number of costs reported by the offenders is 3.18 (s.d. = 1.52). Students on average reported 2.99 (s.d. =1.47) costs. The three most commonly reported costs for driving while intoxicated were legal, wreck the car and hurt/kill others. For the offenders, 68% reported a legal consequence, 79.7% reported getting into a wreck, and 47.0% reported that they could hurt/kill someone. Amongst the sample of students, 58.0% reported a legal cost, 71.4% reported getting into a wreck, and 45.5% reported they could hurt/kill someone. Social costs were the least commonly reported costs by both the offenders and the students.
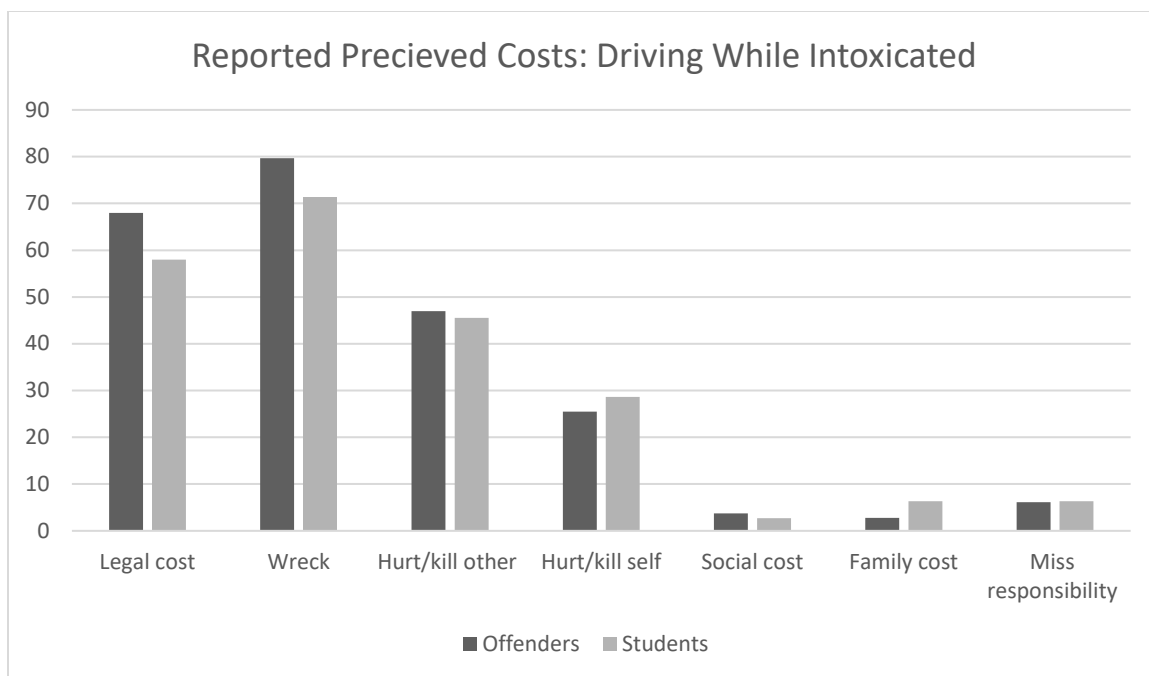
Figure 1. Reported Perceived Costs of Driving While Intoxicated.

The robbery scenario's negative consequences were coded into six categories, including legal, getting shot/hurt/killed, shoot/hurt/kill someone else, social consequences, family consequences, and academic/professional consequences. The academic/professional consequence category included responses such as "getting kicked out of school", and "losing a job." (Refer to Appendix C for more details) The average number of costs reported by offenders is 2.50 (s.d. =1.12), and the students are 2.46 (s.d. =1.35). Legal costs were the most common reported by both the offenders (79.5%) and students (72.7%). Getting shot/hurt/killed was reported by 36.6% of the offenders and 61.2% of the students (Figure 2). More students reported hurt/kill others (40.7%), in comparison to the offenders (12.5%). Professional costs were reported by more students (6.3%) than offenders (0.9%), while family costs were reported by more offenders (4.2%) than students (1.8%).
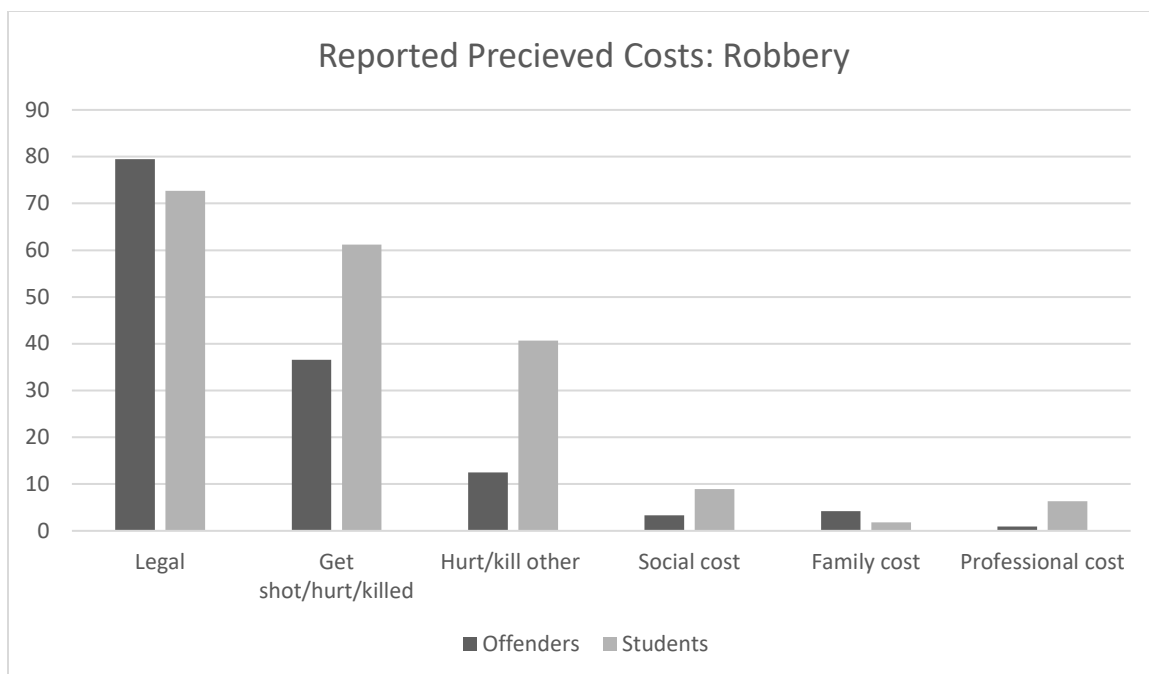
Figure 2. Reported Perceived Costs of Robbery.

The third hypothetical scenario was getting into a fight. The costs reported for this were coded into five categories; legal consequence, lose fight/get hurt, hurt the other person, shame/embarrassment (social cost) and family cost (see Appendix D). The offenders reported an average of 2.08 consequences, whereas the students reported 2.24 costs. The most common costs for offenders was legal (56.6%), whereas 63.4% of students reported a legal cost (Figure 3.). However, the most common cost for students was lose fight/get hurt (72.3%) in comparison to 51.6% of offenders. The cost of hurting the other person was reported by 39.3% of offenders and 25.9% of students. Social costs and family costs were the two least reported cost types by both the offenders and the students.
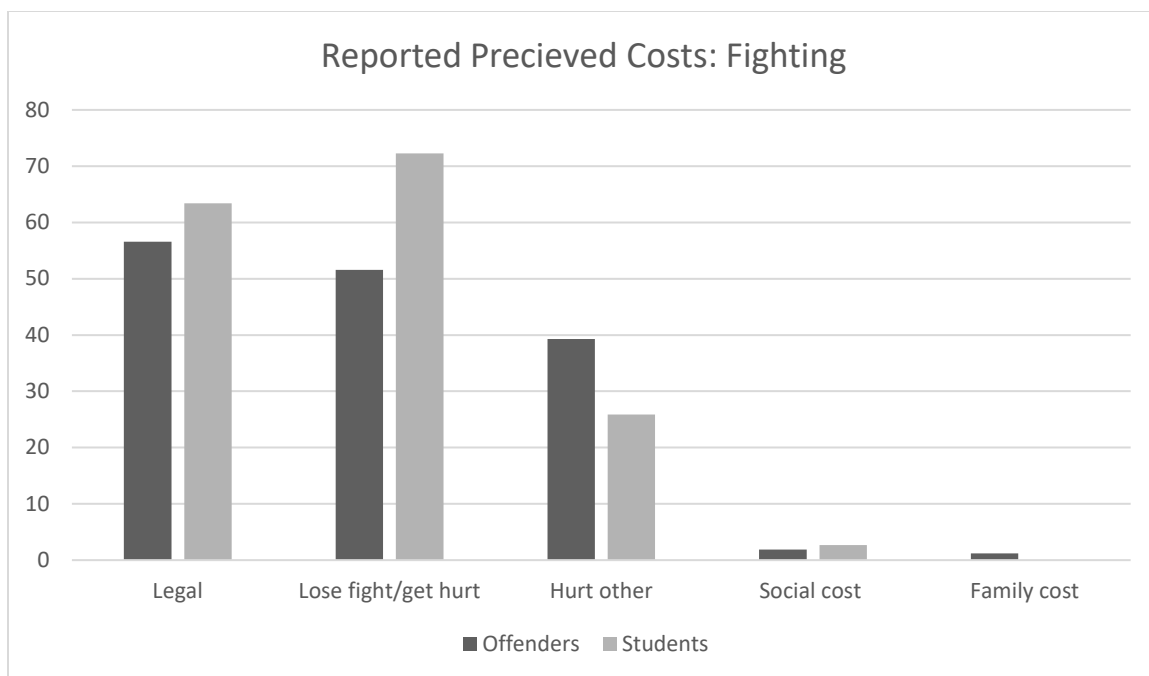
Figure 3. Reported Perceived Costs of Fighting.

Perceived Benefits. After reading each of the three scenarios, the participants

were asked to list the "good things" or benefits that could occur if they engage in that

specific crime. In the same way that the costs were reported, the participants were given

lines in which to list their perceived benefits. The first scenario the participant read was

driving while intoxicated. The answers were coded into nine categories; no legal cost,

getting safely home, social, have car, no one gets hurt, sleep at home, make it to work,

and no family consequences. For more information on how the benefits were coded refer

to Appendix B. The average number of costs reported by offenders is 1.61, and the

average number reported by the students is 1.70 (Figure 4). As with the standards

required for the reported costs, the two most reported benefits will be analyzed. The three

benefits most reported were getting home safe, having a car, and making it to work the

next day. Getting home safe was reported by 31.8% of the offenders and 44.6% percent

of the students. More students also reported getting to work on time (18.8%) compared to the offenders (12.2%). Both the offenders (9.6%) and students (7.1%) also reported that a benefit would be that they would not encounter a legal cost. Being able to sleep at home was reported by 5.4% of offenders and 6.2% of students. The least commonly reported benefit reported by both samples was that no one would get hurt.
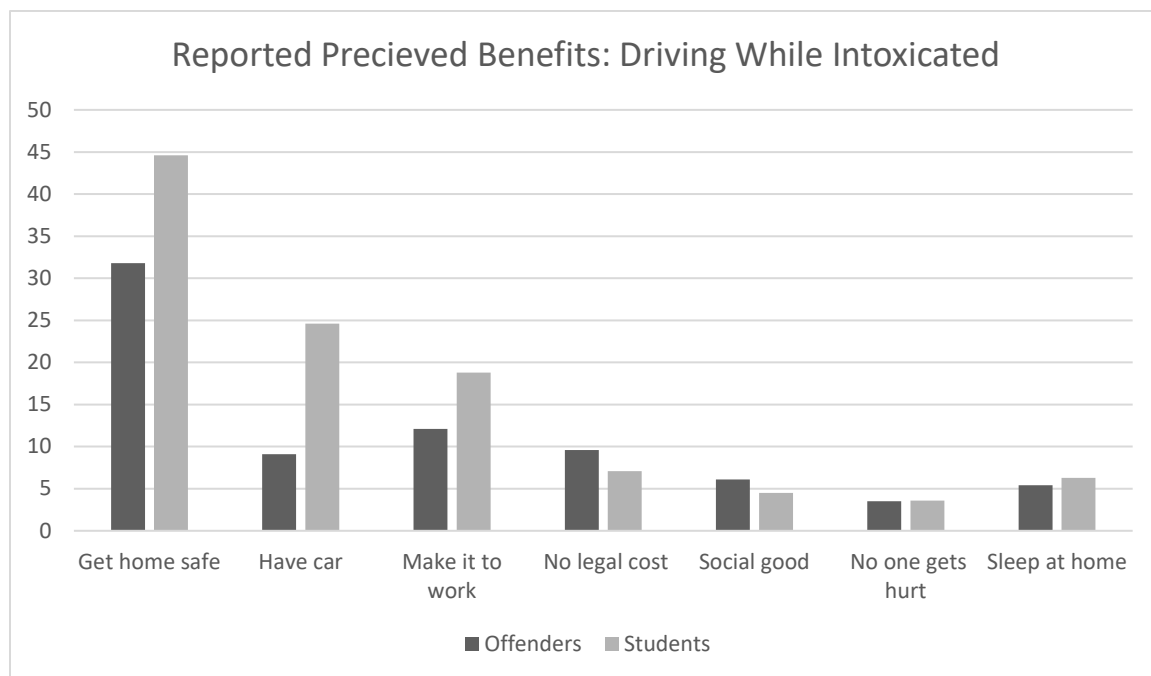
Figure 4. Reported Perceived Benefits of Driving While Intoxicated.

The benefits that were reported for the robbery scenario were coded into 5 categories; getting money, getting away with it and people would think well of you (social good), feeling good about yourself and it would be fun/thrilling. The most commonly reported benefit was getting money (Figure 5). Over half of the students reported getting money (67.0%), while 43.7% of the offenders reported it as a benefit. Getting away with it was reported by 10.5% of the offenders and 11.6% of the students. The other three categories of benefits were reported by very few offenders and students.
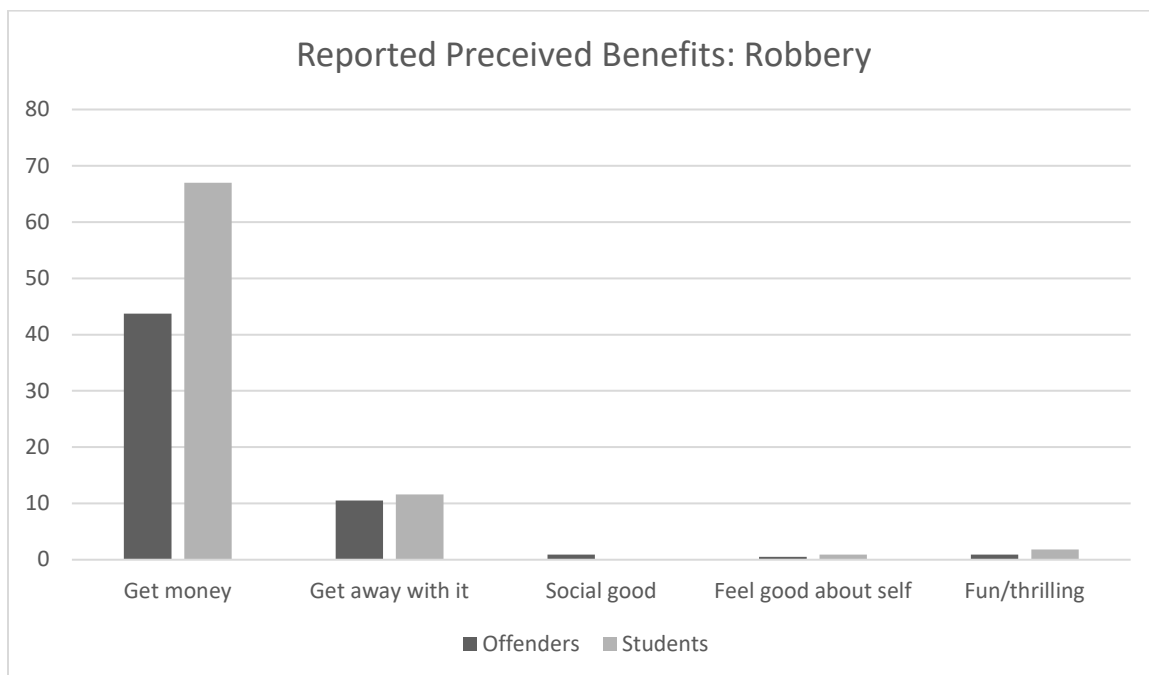
Figure 5. Reported Received Benefits of Robbery.

With respect to the fighting scenario, responses were coded into six categories; winning the fight, feeling good (pride/respect), teaching the guy a lesson, financial benefit and defending yourself. This scenario had the fewest average number of benefits reported. This could possibly have been caused by fatigue from completing all the previous scenarios. The offenders reported an average of .80 benefits, and the students reported 1.28. The three most commonly reported benefits were winning the fight, teach the guy a lesson and feeling good about yourself/get respect. Winning the fight was reported more by the students (21.4%) than the offenders (11.0%). Teaching the guy a lesson was reported by 8.6% of the offenders and 16.1% of the students and feeling good about your self was reported by 9.6% offenders and 11.6% of the students. The least common benefits were experiencing no legal cost and defending one's self.
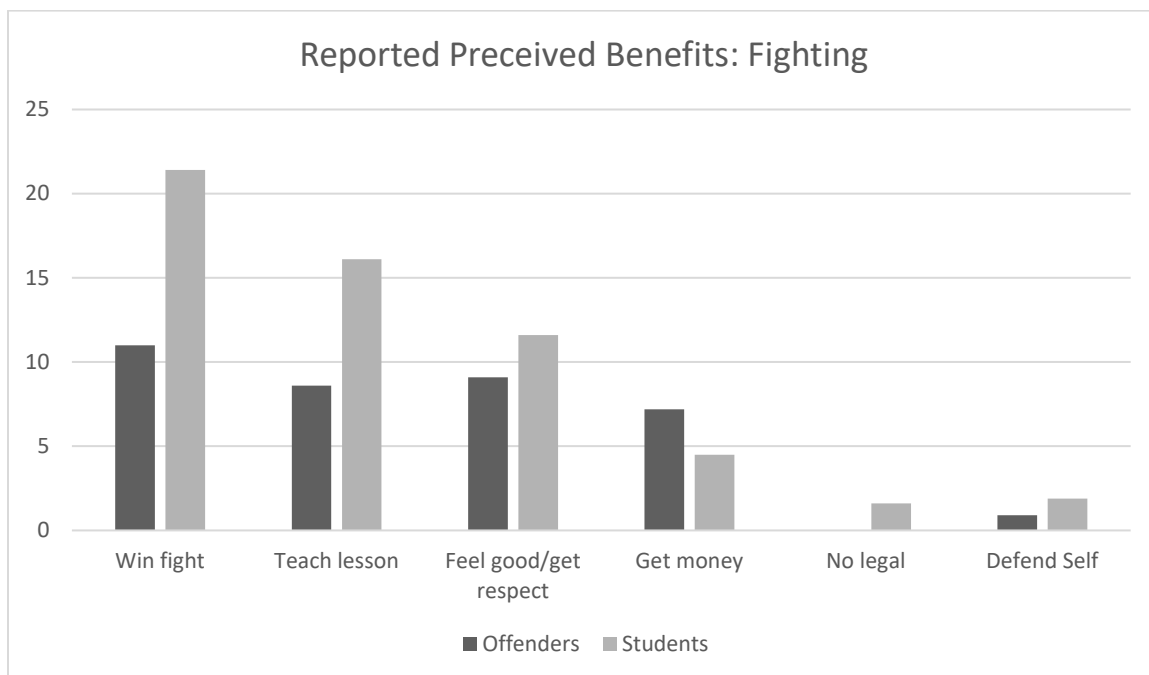
Figure 6. Reported Perceived Benefits of Fighting.

Certainty and Severity of Perceived Costs. For each perceived cost listed, the participants were asked to report how likely it was for the cost to occur (certainty) and how bad it would be if it did occur (severity) by using percentages from 0 -100%. For the driving while intoxicated scenario, the certainty of the legal cost was higher for offenders than students (65.9% vs. 56.7%) (Table 2). The offenders reported a slightly lower severity than the students (86.5% vs. 87.4%). The average certainty of getting into a wreck was slightly higher at 52.2% for the offenders and 53.8% for the students. The average severity of getting into a wreck was 84.8% for the offender and 88.8% for the students. The offenders (50.9%) and students (50.6%) reported similar certainty for the perceived cost of hurting/killing other although the students did report higher severity (99.9%) in comparison to the offenders (92.2%).

Regarding the reported perceived costs for the robbery scenario, the offenders' average certainty for legal cost was 65.6%, and the students' average was 70.0%. There average severity for legal costs was similar for the offenders (93.6%) and students (93.9%). Getting shot/hurt/kill had an average perceived certainty for the offenders (59.2%) was greater than that of the students (52.2%). Yet, the students (96.7%) reported a higher severity than the offenders (91.7%). The average certainty of the cost of hurting/killing someone else was 57.8% for the offenders and 65.3% for the students. The students reported a higher severity (97.5%) compared to the offenders (92.9%).

The fight scenario legal cost average certainty was higher for the students (92.6%) in comparison to the offenders (63.4%). Yet the students and offenders had very similar average severity of legal costs (89.7% vs. 89.5%). The cost of losing the fight/getting hurt average certainty is 54.6% for the offenders and 47.2% for the students. The average severity of losing the fight/getting hurt is slightly higher for the offenders and for the students (84.0% vs. 82.3%). The cost of hurting someone else in this scenario had an average of 88.7% for the offender sample and 85.5% average for the students. The average severity is 63.8% for the offenders and 50.1% for the students.

Table 2

Certainty & Severity of Perceived Costs

	Offenders		Students	
	Average Certainty (s.d.)	Average Severity (s.d.)	Average Certainty (s.d.)	Average Severity (s.d.)
Driving While Intoxicated				
Legal cost	65.9 (26.0)	86.5 (25.8)	56.7 (31.1)	87.4 (22.1)
Wreck	52.2 (25.7)	84.8 (23.4)	53.8 (23.2)	88.8 (20.0)
Hunt/kill other	50.9 (27.5)	92.2 (20.5)	50.6 (23.3)	99.9 (.70)
Hurt/kill self	56.7 (26.4)	91.3 (19.0)	51.3 (28.5)	92.6 (15.6)
Social cost	65.8 (30.1)	67.5 (35.0)	53.2 (38.1)	-
Family cost	66.3 (32.2)	89.5 (32.2)	35.8 (32.1)	86.1 (28.2)
Miss responsibility	84.71 (26.4)	84.7 (26.5)	44.6 (27.7)	82.1 (30.1)
Robbery				
Legal	65.6 (28.7)	93.6 (17.3)	70.0 (24.9)	93.9 (18.7)
Get shot/hurt/killed	59.2 (25.2)	91.7 (20.6)	52.2 (21.3)	96.7 (9.5)
Hurt/kill other	57.8 (26.4)	92.9 (18.0)	65.3 (32.7)	97.5 (8.0)

(continued)

Social cost	75.0 (28.8)	90.0 (31.6)	82.8 (25.0)	88.5 (10.5)
Family cost	75.0 (28.8)	96.2 (19.4)	82.8 (17.7)	82.9 (25.0)
Professional cost	75.9 (28.8)	96.2 (19.2)	82.5 (17.7)	85.9 (23.1)
Fight				
Legal cost	63.4 (26.2)	89.7 (19.4)	92.6 (24.7)	89.5 (20.7)
Lose fight/Get hurt	50.4 (25.7)	84.0 (24.2)	47.2 (26.1)	82.3 (24.7)
Hurt other	88.7 (21.6)	63.8 (26.7)	85.5 (24.1)	50.1 (28.7)
Social cost	75.2 (32.2)	92.5 (17.8)	35.0 (43.3)	90.0 (20.0)
Family cost	74.0 (23.0)	100 (0.0)	-	-
Professional cost	66.6 (31.7)	84.4 (26.6)	36.2 (35.4)	41.2 (37.5)

- Indicates no responses[2]

Certainty and Severity of Perceived Benefits. For each perceived benefit that they listed, the participants were asked to report how likely to happen (certainty) and how good if it did (severity) using percentages from 0 -100%. For the driving while intoxicated the two most common benefits were getting home safe and having your car. The average perceived certainty (67.1% vs. 50.1%) and severity was higher for the offenders (92.6% vs. 88.7%), then the students. The average certainty of having the car is 70.1% for offenders and 66.9% for students. The severity of having the car was 83.0%

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[2] - Indicates that there were no responses in the category.

for the offenders and 77.2% for the students. In regard to not experiencing a legal cost the offenders reported a higher certainty (62.3% vs. 36.9%), with the students placing a higher severity on the benefit (90.2% vs. 85.2%).

In regard to the benefits reported for the robbery scenario, the perceived certainty of getting money was slightly greater for students (59.5% vs. 56.1%) than offenders. The perceived severity of how good it would be to get money was similar between the offenders (82.2%) and the students (83.1%). The offenders reported not getting caught with an average certainty of 51.1% and 93.0% severity. The students reported the certainty of getting away with it at 38.5% but with 98.8% severity.

In the fighting scenario, the average perceived certainty of winning the fight was 71.1% for the offenders and 64.4% for the students. The perceived severity of how good it would be to win the fight was very similar for the offenders (82.6%) and the students (82.2%). The perceived certainty of the benefit of teaching the guy a lesson was 71.7% for the offenders and 64.4% for the students. The severity of how good it would be to teach the guy a lesson was higher for the offenders (89.1% vs 79.0%) than the students. The certainty and severity of feeling good about self/ getting respect were both greater for offenders than students.

Table 3

Certainty & Severity of Perceived Benefits

	Offenders		Students	
	Average Certainty (s.d.)	Average Severity (s.d.)	Average Certainty (s.d.)	Average Severity (s.d.)
Driving While Intoxicated				
Get home safe	67.1 (25.4)	92.6 (22.1)	50.1 (27.9)	88.7 (23.4)
Have car	70.1 (31.2)	83.0 (27.2)	66.9 (35.0)	77.2 (30.3)
Make it to work	89.0 (20.1)	74.2 (23.1)	89.0 (15.0)	69.5 (21.5)
No legal cost	62.3 (24.7)	85.2 (29.4)	36.9 (31.1)	90.2 (16.8)
Social good	68.4 (29.5)	73.3 (38.2)	64.5 (35.0)	64.5 (35.0)
No one gets hurt	68.4 (29.5)	86.8 (28.2)	64.5 (35.0)	91.91 (16.3)
Sleep at home	68.6 (29.6)	88.6 (26.1)	63.3 (33.4)	86.2 (20.8)
Robbery				
Get money	56.1 (32.1)	82.2 (30.0)	59.5 (29.6)	83.1 (27.7)
Get away with it	51.1 (22.7)	93.0 (16.2)	38.5 (24.2)	98.8 (2.9)
Social good	72.5 (40.2)	72.5 (40.2)	-	-

(continued)

Feel good about self	80.0 (44.7)	85.0 (28.2)	76.6 (25.1)	44.0 (39.3)
Fun/thrilling	100 (0.0)	85.0 (28.2)	65.0 (21.2)	44.0 (39.3)
Fight				
Win Fight	71.1 (28.0)	82.6 (28.2)	64.4 (27.2)	82.2 (31.4)
Teach guy a lesson	69.7 (28.2)	89.1 (21.3)	68.3 (22.3)	79.0 (35.0)
Get respect	68.0 (24.8)	89.9 (22.4)	91.4 (11.8)	72.0 (28.1)
Feel good about self	85.4 (21.0)	88.4 (23.0)	69.2 (21.8)	72.7 (25.9)
Get money	75.5 (27.6)	87.8 (21.9)	66.8 (22.8)	73.5 (22.5)
Defend self	-	-	71.4 (35.3)	91.4 (18.6)
No legal	-	-	65.0 (26.7)	62.1 (41.0)

All Cost and Benefit Certainty and Severity. An average of all the cost certainty, all the cost severity, all benefit certainty and all benefit severity were calculated. As can be seen above some the costs and benefits had very small frequencies, so analyzing each cost and benefit separately in multivariate models was not possible. Thus, in order to be able to examine all costs and all benefits a variable of the average certainty and severity of all costs and all benefits for each scenario was created (Table 4).

The certainty of all the costs of the driving while intoxicated scenario was 54.0% for the offenders and 51.3% for the students. For the cost severity the students reported an overall higher severity than the offenders (93.1% vs. 86.3%). For the robbery scenario

the all cost certainty was similar for the offenders and students (64.0% vs. 65.5%). The

all cost severity was also very similar for the offenders and students (92.6% vs. 93.0%).

There was a small difference in all cost certainty for between the offenders and students

in the fighting scenario (54.0% vs. 51.3%). Lastly, the all cost severity for fighting was

very similar for offender and students, with offender all cost severity at 85.6% and 86.3%

for students.

Table 4

Certainty & Severity of All Costs

	Offenders	Students
Driving While Intoxicated		
All cost certainty	54.0	51.3
All cost severity	86.3	93.1
Robbery		
All costs certainty	64.0	65.5
All cost severity	92.6	93.0
Fighting		
All costs certainty	54.0	51.3
All cost severity	86.5	86.3

The average certainty and severity were also calculated for each benefit for each

of the scenarios (Table 5). For the driving while intoxicated scenario the all benefit

certainty was 64.9% for offenders and 54.1% for students. The all benefits severity was

slightly higher for offenders than students (83.4% vs. 79.5%). For robbery the all cost

certainty was 54.2% for offenders and 56.9% for students. The students all benefit

severity was slightly higher than that of the offenders (80.4% vs. 78.4%). For the

fighting scenario offenders all benefit certainty was 72.7% while for students was 64.8%.

All benefit severity was greater for the offenders than the students (86.1% vs. 78.3%).

Table 5

Certainty & Severity of All Benefits

	Offenders	Students
Driving While Intoxicated		
All benefit certainty	64.9	54.1
All benefits severity	83.4	79.5
Robbery		
All benefit certainty	54.2	56.9
All benefit severity	78.4	80.4
Fighting		
All benefit certainty	72.7	64.8
All benefit severity	86.1	78.3

Likelihood of Engaging in Criminal Behavior. Right after reading the scenario,

the participants were asked what the chance is (0-100%) that they would engage in the

type of behavior proposed in the scenario. The average likelihood of driving while

intoxicated was higher for the offenders (48.8%) than the students (26.5%) The sample of

offenders also reported a higher likelihood of robbery (9.8%) than the students (3.6%).

For the fighting scenario, the participants were asked the likelihood of getting into a

physical fight, the offenders reported a higher average likelihood of getting into a

physical fight (55.1%) than the students (49.9%) likelihood.

Table 6

Average Likelihood of Engaging in Criminal Behavior

	Offenders	Students
Average Likelihood (s.d.)		
Driving While Intoxicated	48.8 (35.9)	26.5 (29.7)
Robbery	9.8 (24.7)	3.6 (12.0)
Fight (physical)	55.1 (35.9)	49.9 (31.0)

Control Variables

Self-control. Self-control has shown to be a significant predictor of offending (Pratt & Cullen, 2000). The participants were asked to complete the 24-item attitudinal Self-Control Scale (Grasmick, Tittle, Bursik & Arneklev, 1993). The participants responded to each item on the self-control scale using a Likert scale that ranged from 0-4. The 24 items were then averaged, and this mean score was used to represent the individual's level of self-control, with a higher number indicating higher levels of self-control (α=.89. The two samples had a relatively similar average score on the self-control scale. As the offenders' mean score was 1.6 (s.d. =.7) and the students' mean score was 1.5 (s.d. =.6).

Criminal History. The two groups were asked questions regarding their criminal history, specifically how many times they had been arrested since turning 18. The incarcerated sample had an average of 8.3 (s.d. =8.8) arrests after age 18, whereas the students mean is .05 (s.d. =.4). The participants were also asked if they had ever engaged in each of four different offenses; ever driving while intoxicated, ever hit someone, ever

used a weapon against someone, and ever robbed a store. Of the offenders, 81.1% reported having driven while intoxicated, and 55.4% of the students reported having driven while intoxicated. More offenders reported having ever hit someone (67.1%) in comparison to the students (42.9%). With regard to ever having used a weapon against some 27.6% of the offenders reported having done this. While 8.9% of the students reported ever having used a weapon against someone. The offense with the least amount of involvement was robbing a store, in which 12.4% of the offenders had reported doing this previously, and 2.7% of students reported previously doing.

Table 7

Control Variables

	Offenders	Students
Low Self-control		
Mean (s.d.)	1.6 (.7)	1.5 (.6)
Times arrested since 18		
Mean (s.d.)	8.3 (8.8)	.05 (.4)
Past Crime Involvement		
% Ever DWI	81.1	55.4
% Ever Hit someone	67.1	42.9
% Ever robbed store	12.4	2.7

Plan of Analysis

The first part of the analysis will use *Chi-square* tests to examine the differences in the types of costs and benefits that the offenders and college students reported for each of the scenarios. Further bivariate analysis will be used to examine if there are differences in the reported certainty and severity of the costs and benefits between the two samples. The t-tests will allow for the comparison between the certainty and severity of each of the costs and benefits. These analyses will allow me to identify if there are significant differences between the two samples or if they are similar.

The driving while intoxicated and fighting likelihood variables being categorical allowed for an order logistic regression to be used to examine how the overall average cost and benefit certainty and severity are related to the offending likelihood, while controlling for age, race/ethnicity, and prior criminal behavior. However, a dichotomous likelihood variable for robbery was needed due to the skewness of the variable, therefore logistic regressions will be used to analyze the robbery scenario. This will also allow for the comparison of what is significant for each sample to see if the samples are similar as to what variables influence the offending likelihood. To further see how similar or different the two samples are interaction terms were created and put into the regressions.

CHAPTER IV

Results

Analyses will begin with *Chi-square* tests to compare the number of costs and benefits reported by each sample, as well as if there were statistical differences between the two groups on each type of cost and benefit. For each cost and benefit the participants were asked to report the certainty and severity of the cost or benefit occurring. To compare the certainty and severity of each cost and benefit, *t*-tests were conducted.

To examine whether the reported costs and benefits impact the participants' reported likelihood of engaging in the three types of crime correlations were used to see how each independent variable was related on its own. To then see how reported costs and benefits impact the participants' reported likelihood, ordered logit was used for driving while intoxicated and fighting, while a logistic regression was used for robbery. These regressions allow to see how the cost and benefits certainty and severity impact the offending likelihood while controlling for other common predictors of criminal behavior. Lastly, with the goal of identifying if student samples are good samples to use when making conclusions about offender decision-making interactions terms were created and put into a series of regressions.

Bivariate Analysis

The first analysis was conducted to assess differences in the overall number of costs that the two samples generated, and then to also examine if there were differences in the types of costs that the two samples reported. *Chi-square* tests were used to identify any significant statistical differences between the rates of each cost and benefit reported by the two samples. Cohen's method for calculation h was used, to measure the

difference between the two proportions (Cohen, 1988). Cohen (1988) classified as small effect size as h=.20, a medium as h=.50 and a large effect size as h=.80. A small effect size indicates a small difference between the proportion and a large effect size indicates that there is a large difference in the proportions (Cohen, 1988).

The first costs examined were generated by the participants after reading the driving while intoxicated scenario (Table 8). There was no significant difference between the total numbers of costs reported between the two samples. Examining the differences in the number of participants in each sample who reported the different types of costs, there was a significant difference between the samples for legal costs, as significantly more offenders reported legal costs (χ^2=3.9, p<.05). Family costs also showed a marginal significant difference with more students reporting family costs (χ^2=3.1, p<.10). The other reported costs did not show significant differences.

In the robbery scenario there were a number of significant differences between the numbers of participants that reported the various costs. First the difference between the total number of costs reported for the robbery scenario was significant (χ^2=25.8, p<.05) with offenders reporting more costs. The analysis indicated that significantly more students reported the cost of getting shot/hurt/killed (χ^2=21.8, p<.01) as well as hurt/kill other (χ^2=31.6, p<.01) if they were to commit robbery. More students also reported social costs (χ^2=6.6, p<.05) and professional costs (χ^2=12.5, p<.01) more than offenders.

The examination of the fighting vignette indicated that there was a significant difference in the number of costs reported with the student reporting more than the offenders (χ^2=15.4, p<.05). Regarding the specific costs significantly more students

reported losing the fight (χ^2=15.4, p<.01). Whereas significantly more offenders reported hurting the other person as a cost (χ^2=12.5, p<.05).

Overall, the analysis shows few differences in the number of participants in each sample reporting costs for the driving while intoxicated scenarios. The overall number of costs varies significantly between the two samples for both robbery and getting into a fight. And there are also a number of significant differences in the types of costs reported by the two samples in the robbery and fighting scenarios.

Table 8

Reported Perceived Costs

	Offenders	Students	Test Statistic	Effect size
			χ^2	h
Driving While Intoxicated				
Average number of costs	3.18	2.99	11.8	-
% Legal cost	68.0	58.0	3.9*	.20
% Wreck	79.7	71.4	3.5	.19
% Hunt/kill other	47.0	45.5	0.7	.03
% Hurt/kill self	25.5	28.6	0.4	.06
% Social cost	3.7	2.7	0.2	.05
% Family cost	2.8	6.3	3.1†	.17
% Miss responsibility	6.1	6.3	0.0	.00
Robbery				
Average number of costs	2.5	2.46	25.8*	-
% Legal	79.5	72.7	2.1	.15
% Get shot/hurt/killed	36.6	61.2	21.8**	.49
% Hurt/kill other	12.5	40.7	31.6**	.66
% Social cost	3.3	8.9	6.6*	.24
% Family cost	4.2	1.8	1.4	.14
% Professional cost	0.9	6.3	12.5**	.31

(continued)

Fight Costs				
Average number of costs	2.08	2.42	15.4*	-
% Legal	56.6	63.4	1.7	.13
% Lose fight/get hurt	51.6	72.3	15.4**	.43
% Hurt other	39.3	25.9	6.8**	.28
% Social cost (Shame/embarrassment)	1.9	2.7	0.2	.05
% Family cost	1.2	0.0	-	.21

$p^{\dagger} < .10$; $^{*}p < .05$; $^{**}p < .01$. ^{a} indicates a large effect size

The second analysis was conducted in order to see if there were differences in the overall number of benefits that the two samples generated, and then to also examine if there were differences in the types of benefits that the two samples reported (see Table 9). The analysis indicated that there is a significant difference in the number of benefits reported between the two samples, with students reporting significantly more benefits for driving while intoxicated (χ^2=46.4, p<.01). Only one benefit was shown to be significantly different was having a car. Specifically, significantly more students reported the benefit of having a car if they were to drive while intoxicated (χ^2=18.6, p<.01).

Regarding the benefits reported by the samples after reading the robbery scenario the analysis indicated that there is a significant difference in the number of benefits reported between the two samples. It shows that students report significantly more benefits than the offenders (χ^2=46.4, p<.05). Significantly more students also reported getting money as a benefit to robbing the store (χ^2=19.2, p<.01).

Lastly, the analysis on the getting into a fight also indicated that students report significantly more benefits (χ^2=16.2, p<.05). For the benefit of winning the fight (χ^2=8.4, p<.01) and teaching the other guy a lesson (χ^2=5.3, p<.05), significantly more students

reported both of these benefits. The benefit of getting money was marginally significant, with offenders being more likely to report the benefit than students (χ^2=6.3, p<.10). Overall, the analysis shows that students report significantly more benefits in all three of the scenarios. There were less significant differences amongst the samples in regard to the different benefits than there were costs.

Table 9

Reported Perceived Benefits

	Offenders	Students	Test Statistic	Effect size
			χ^2	h
Driving While Intoxicated				
Average number of benefits	1.61	1.70	46.4**	-
% Get home safe	31.8	44.6	1.5	.26
% Have car	9.1	24.6	18.6**	.42
% Make it to work	12.1	18.8	3.3	.18
% No legal cost	9.6	7.1	0.1	.09
% Social good	6.1	4.5	0.4	.07
% No one gets hurt	3.5	3.6	0.0	.01
% Sleep at home	5.4	6.3	0.1	.50
Robbery				
Average number of benefits	1.01	1.30	46.4*	-
% Get money	43.7	67.0	19.2**	.47
% Get away with it	10.5	11.6	0.1	.03
% Social good	0.9	0.0	1.0	.19
% Feel good about self	0.5	0.9	0.2	.04
% Fun/thrilling	0.9	1.8	0.5	.26
Fight				
Average Number of benefits	.80	1.28	16.2*	-
% Win fight	11.0	21.4	8.4**	.28
% Teach lesson	8.6	16.1	5.3*	.25

(continued)

% Feel good/get respect	9.1	11.6	0.6	.08
% Get money	7.2	4.5	6.3†	.11
% No legal	0.0	1.6	0.3	.08
% Defend Self	0.9	1.9	0.5	.08

p † <.10; *p < .05; **p < .01. ª indicates a large effect size

T-tests were used to examine the certainty ratings of the reported costs for each hypothetical scenario (see Table 10). Along with the T-test effect size estimates were calculated, Cohen's d was used to examine if there is a substantial difference between the two samples (Cohen, 1988). For the effect size, Cohen (1988) suggested a small effect size as 0.2, medium effect size as 0.5 and 0.8 as a large effect size. Cohen's interpretation of effect sizes suggests that that a large effect size indicates a substantial difference.

The only significant difference seen for the driving while intoxicated scenario is that offenders reported significantly higher certainty of receiving a legal cost (t=2.1, p<.05). There were no significant differences between the reported certainties of the samples for getting into a wreck, getting hurt/kill, and hurting/killing another person. For the robbery scenario there was only a marginally significant difference in the reported cost certainty of offenders and students for getting/shot/hurt/killed as a cost (t=1.9, p<.10). However, for the fighting hypothetical scenario there were significant differences in the certainty of losing the fight/getting hurt and hurting the other person. Offenders reported significantly higher certainty of losing the fight/getting hurt than did students (t=1.9, p<.05). Additionally, the offenders also reported significantly higher certainty that another person may get hurt as a cost (t=2.4, p<.05).

Table 10

Certainty Ratings of Costs

	Offenders	Students	t-value	Effect size d
Driving While Intoxicated				
Legal	65.9	56.6	2.1*	.32
Wreck	52.2	53.8	-.49	.06
Hurt/kill other	50.9	50.6	.06	.31
Hurt/kill self	56.7	51.3	.97	.19
Robbery				
Legal	71.4	75.0	-1.1	.13
Get shot/hurt/killed	59.2	52.2	1.9†	.32
Hurt/kill other	57.8	65.3	-.99	.27
Fighting				
Legal	63.4	60.5	.81	.37
Lose fight/ get hurt	54.6	47.2	1.9*	.24
Hurt other	63.8	50.1	2.4*	.49

p † <.10; *p < .05; **p < .01. ª indicates a large effect size

T-tests were also used to examine the severity ratings of the reported costs for each hypothetical scenario (see Table 11). The analysis examining the severity of the costs for the driving while intoxicated scenario show there is a significant difference in the severity of hurting/killing other, with student reporting that it would be more severe if it happened (t=-4.9, p<.01). Regarding robbery the severity of getting shot/hurt/killed was significantly different, with students reporting a higher severity (t=2.4, p<.05). There is a marginal significant difference in the severity of hurting/killing other, with students

reporting a marginally higher severity (t=-1.9, p<.10). There were no significant

difference between the samples on the severity of the costs of getting into a fight.

Table 11

Severity Ratings of Costs

	Offenders	Students	t-value	Effect size d
Driving While Intoxicated				
Legal	86.5	87.4	-.30	.03
Wreck	84.8	88.8	-1.5	.18
Hurt/kill other	92.2	99.9	-4.9**	.77
Hurt/kill self	91.3	96.2	-1.4	.28
Robbery				
Legal	93.6	93.9	-.13	.01
Get shot/hurt/killed	91.7	96.7	-2.4*	.40
Hurt/kill other	92.9	97.8	-1.9†	.52
Fighting				
Legal	89.7	89.5	.06	.01
Lose fight/ get hurt	84.0	82.3	.53	.06
Hurt other	88.7	85.5	.69	.14

p† <.10; *p < .05; **p < .01. ª indicates a large effect size

T-tests were used to examine the certainty ratings of the reported benefits for each

hypothetical scenario as well (see Table 12). From the hypothetical driving while

intoxicated scenario the offenders reported a significantly higher certainty that they

would get home safe (t=3.9, p<.01) as well as a significantly higher certainty that they

would make it to work (t=2.3, p<.05). The effect size for making it home from work was

"large" (see Cohen, 1988), indicated a substantial difference in the certainty between the two samples. There was a marginally significant difference in the certainty of the benefit of getting away with it, with the offender reporting the higher certainty (t=1.6, p<.10) for the robbery scenario. Lastly, in regard to the fighting scenario there was a significant difference the reported certainty of feeling good/ getting respect with the offenders' certainty being significantly higher (t-2.6, p<.01).

Table 12

Certainty Ratings of Benefits

	Offenders	Students	t-value	Effect size d
Driving While Intoxicated				
Get home safe	67.1	50.1	3.9**	.64
Have car	70.1	66.9	.37	.09
Make it to work	76.9	60.1	2.3*	.86 [a]
Robbery				
Get money	56.1	59.5	-.77	.10
Get away with it	51.1	38.5	1.68[†]	.54
Fighting				
Win fight	71.1	64.4	.95	.26
Teach guy a lesson	69.7	68.3	.19	.05
Feel good/get respect	85.4	69.2	2.6**	.74

p [†] <.10; [*]p < .05; [**]p < .01. [a] indicates a large effect size

The severity ratings of the self-reported benefits were also analyzed using t-tests (Table 13). There were no significant differences between the students' and offenders' samples reported severity of benefits. Students reported a significantly higher severity

(importance) of getting away with committing robbery as a benefit (t=-2.0, p<.01). For the fighting scenario the severity (importance) of feeling good/getting respect was significantly higher for offenders (t=2.6, p<.01). Overall, there are some significant differences between offenders and students when it comes to the certainty and severity of the reported costs and benefits.

Table 13

Severity Ratings of Benefits

	Offenders	Students	t-value	Effect size d
Driving While Intoxicated				
Get home safe	92.6	88.7	1.0	.16
Have car	83.0	77.2	.78	.20
Make it to work	93.1	84.5	1.5	.56
Robbery				
Get money	82.2	83.1	-.21	.02
Get away with it	93.0	98.8	-2.0*	.64
Fighting				
Win fight	82.6	82.2	.04	.01
Teach guy a lesson	89.1	79.0	1.1	.29
Feel good/get respect	88.4	72.2	2.6**	.74

p† <.10; *p < .05; **p < .01. ^{a} indicates a large effect size

From all of the individual category cost certainty and severity the average of all the costs and were calculated for each scenario. T-tests were used to examine if there were significant differences between all cost certainty and all cost severity for the three scenarios. Amongst the costs for drunk driving, the all cost severity was marginally

significantly different, and was higher for students (t=-2.5, p<.10). There were no

significant differences in all cost certainty or all cost severity for robbery or fighting.

Table 14

Certainty & Severity of All Costs

	Offenders	Students	t-value	Effect size d
Driving While Intoxicated				
All cost certainty	54.0	51.3	1.0	.10
All cost severity	86.3	93.1	-2.5[†]	.27
Robbery				
All costs certainty	64.0	65.5	-0.6	.06
All cost severity	92.6	93.0	-0.3	.03
Fighting				
All costs certainty	54.0	51.3	0.3	.03
All cost severity	86.5	86.3	0.1	.01

p[†] <.10; [*]p < .05; [**]p < .01. [a] indicates a large effect size

From all of the individual categories, benefit certainty and severity the average of all the benefits and were calculated for each scenario as well. Again, T-tests were used to examine if there were significant differences between all benefit certainty and all benefit severity for the three scenarios (Table 15). All benefit certainty was significant for driving while intoxicated was significant, with offenders reporting higher certainty of benefits (t=2.1, p<.01). There were no significant differences in the benefit certainty or severity between the offenders and students in the robbery scenario. There was a significant difference in the benefit certainty in the fighting scenario. The all benefit certainty was higher for offenders than students (t=1.9, p<.05).

Table 15

Certainty & Severity of All Benefits

	Offenders	Students	t-value	Effect size d
Driving While Intoxicated				
All benefit certainty	64.9	54.1	2.9**	.35
All benefits severity	83.4	79.5	1.0	.12
Robbery				
All benefit certainty	54.2	56.9	0.6	.07
All benefit severity	78.4	80.4	-0.4	.05
Fighting				
All benefit certainty	72.7	64.8	1.9*	.29
All benefit severity	86.1	78.3	1.7	.26

p † <.10; *p < .05; **p < .01. ^{a} indicates a large effect size

The above analyses examine if male college students and offenders differ on their reported costs and benefits of driving while intoxicated, committing robbery, and getting into a fight (assault). The analysis did show that there was difference in how many costs the two samples reported for all three scenarios. There were also some differences in the type of costs reported, with the most differences in types of costs in the fighting scenario. There was also a difference in how many benefits the two samples reported for all three scenarios. There were also some differences in the type of benefits reported, with once again the most differences in types of benefits in the fighting scenario.

The analyses above also examine whether these samples differ regarding the perceived certainty and severity of the costs and benefits. Regarding reported costs there were some significant differences between the certainty of the costs, but few significant differences in the reported severity of the costs between the groups. For the reported

benefits there were some significant differences in the certainty and fewer differences in the severity of the benefits.

The analysis of all cost certainty, all cost severity, all benefit certainty, and all cost severity were also run and indicate that there are no major significant in regard to costs. However there a few differences in the certainty of all benefits for two of the scenarios. These similarities and differences will be discussed in detail in the next chapter.

The following set of bivariate analyses were used to begin to examine whether the reported costs and benefits impact the participants' reported likelihood of engaging in the three types of crime and how the results compare across the two samples. A series of correlations were run to see how the certainty and severity of each cost and benefit was related to the respondents' self-reported likelihood they would engage in each type of criminal activity described in each scenario.

The first series of correlations was used to examine the driving while intoxicated likelihood (See Table 16). The certainty of hurting/killing self was negatively correlated to the likelihood to drive while intoxicated for the students (coef. =-.358, p<.05). The certainty of making it home safe was positively correlated to the likelihood to drive while intoxicated for student respondents (coef. =.372, p<.10). The severity (importance) of having their car was significant for offenders (coef.=.381, p<.05).

Table 16

Correlations between Driving While Intoxicated Likelihood and Cost and Benefit, Certainty and Severity

	Offenders	Students
Costs		
Legal		
Certainty	.029	.208
Severity	.003	.020
Wreck		
Certainty	-.053	-.122
Severity	.055	-.098
Hurt/kill other		
Certainty	-.088	-.146
Severity	.062	.094
Hurt/kill self		
Certainty	.065	-.358*
Severity	.066	-.268
Benefits		
Get home safe		
Certainty	.118	.372[†]
Severity	.133	.214
Have car		
Certainty	.266	.376
Severity	.384*	.095

(continued)

Make it to work

Certainty	.118	.372
Severity	.385	.214

$p^{\dagger} < .10$; $^{*}p < .05$; $^{**}p < .01$.

Correlations examining robbery likelihood showed that while a number of cost certainty and severity, and benefits certainty were significant for offenders, there were no significant relationships for the students (Table 17). Legal cost certainty (coef. =-.228, p<.01) and legal cost severity (coef.=-.187, p<.01) were both negatively associated with the robbery likelihood of offenders. The cost certainty (coef. =-.138, p<.05) and severity (coef.=-.159, p<.05) of getting shot/hurt/killed were also negatively related to robbery likelihood. Of the reported benefits, the certainty of getting money was positively correlated to the likelihood of committing robbery for the offenders (coef.=.233, p<.010).

Table 17

Correlations Between Robbery Likelihood and the Cost and Benefit, Certainty and Severity

	Offenders	Students
Costs		
Legal		
Certainty	-.228**	.068
Severity	-.187**	.031
Get shot/hurt/killed		
Certainty	-.138*	-.078

(continued)

Severity	-.159*	-.306
Hurt/kill other		
Certainty	-.085	.085
Severity	-.106	.077
Benefits		
Get money		
Certainty	.233**	-.083
Severity	.120	-.004
Get away with it		
Certainty	.114	.223
Severity	-.172	-.412

$p^{\dagger} <.10; \ {}^{*}p < .05; \ {}^{**}p < .01.$

Within the correlations for fighting likelihood there are a number of significant correlations, and differences between the two samples (Table 18). For the offenders the severity of legal costs was significantly negatively correlated to the self-reported fighting likelihood (coef. =-.146, p<.05). The certainty of losing the fight/getting hurt was significantly negatively correlated to the fighting likelihood for offenders as well (coef. =-.201, p<.01). For the students the certainty that they would hurt other was significantly negatively correlated to their fighting likelihood (coef. =-.388, p<.05).

There were no benefit certainty or severity coefficients that were related to likelihood for the students. However, there were a number that were significant for the offenders. The offenders' severity (coef.=.312, p<.05) of winning the fight was significantly and positively correlated to their likelihood to fight. The certainty of feeling

good/ gaining respect from getting into a fight was significantly and positively correlated to offenders' likelihood to fight (coef.=.498, p<.01).

Table 18

Correlations Between Fighting Likelihood and the Cost and Benefits, Certainty and Severity

	Offenders	Students
Costs		
Legal		
Certainty	-.070	.045
Severity	-.146*	-.157
Lose fight/ get hurt		
Certainty	-.201**	-.128
Severity	-.050	-.118
Hurt other		
Certainty	-.124	-.388*
Severity	.189*	.453
Benefits		
Win fight		
Certainty	.268	.282
Severity	.312*	.179
Teach the guy a lesson		
Certainty	.186	.082
Severity	.186	-.048

(continued)

Feel good/get respect

Certainty	.498**	-
Severity	.015	-

p † <.10; *p < .05; **p < .01.

The correlations above were used to examine whether the reported costs and benefits impact the participants' reported likelihood of engaging in the three types of crime and how the results compare across the two samples. While these tests show how each variable itself is related to the likelihood of engaging in each type of crime. To further understand the similarities and differences between the two samples a series of multivariate analyses were run.

Multivariate Analysis

There were a series of multivariate analyses that were run to examine the elements of decision making on the likelihood of engaging in the offense. Similarities and differences between the two models will aid in determining if student samples are comparable to offender samples when examining criminal decision-making. A regression will be run on each sample, this will allow for the researcher to see which variables are significant for each sample. To then further compare the samples to see if the students' and offenders' results are similar, interaction terms were created to see if the independent variables work the same for the students and offenders. The main purpose of the multivariate models are to aid in determining if the conclusions of student samples are comparable to the conclusions of offenders.

In regard to the driving while intoxicated and fight scenarios an ordered logit was conducted. For these two scenarios the offense likelihood was put into a categorical variable. The variable had 5 categories (0= 0%, 1 =1-49%, 2=50%, 3=51-99%, 4=100%). This was done because of the distribution of the likelihood. Ordered logit was chosen because of the ordered nature of the dependent variable being dichotomous with more than two categories, and the values of the categories are in a meaningful successive order.

Table 19

Likelihood Variables

	Students	Offenders
Driving While Intoxicated		
0%	35.7%	19.4%
1-49%	34.8%	20.1%
50%	8.9%	21.0%
51-99%	18.8%	23.1%
100%	1.8%	16.1%
Fighting		
0%	6.3%	17.0%
1-49%	31.3%	13.1%
50%	26.8%	25.9%
51-99%	20.5%	17.8%
100%	15.2%	24.5%
Robbery		
No likelihood	79.5%	79.4%
Any likelihood	20.5%	19.2%

An ordered logit was run for each scenario and for sample. In order to compare the model of students to the model of offenders, interaction terms were created and put into models. The purpose of the interaction terms was to examine if the variables were working differently for each model. Long's (2009) approach compares predicted probabilities across groups. This method ensures that predicted probabilities are not affected by residual variation (Long, 2009). Long (2009) argues that standard tests can lead to incorrect conclusions for logit models as "they confound the magnitude of the

regression coefficients with the amount of residual variation" (Long, 2009, pg.2). Long's approach using predicted probabilities works well for logit models as it can compare the probabilities across groups while holding the other variables in the model constant (2009).

An interaction term was created for each variable in the driving while intoxicated and fighting scenario. Multiple regressions were run with the interaction terms put in one at a time to test for significance. The interaction terms coefficients and standard error are located in the third column of the ordered logit tables for driving while intoxicated and fighting. If the interactions term was significant it indicates that the variable works differently in each sample. This part of the analysis examines if students and offenders are comparable, to better understand if students are an adequate proxy for offenders.

The first scenario analyzed was the driving while intoxicated (Table 20). First, looking at the ordered logistic regression for the students' minority status and even having driven while intoxicated were significant. Being a minority was positively related to the driving while intoxicated likelihood (coef. =1.362, p<.01). Also ever having driven while intoxicated previously was positively related to the driving while intoxicated likelihood (coef. =2.227, p<.01). For the offender sample, ever driving while intoxicated was positively related to the driving while intoxicated likelihood (coef.=.007, p<.01). From examining the interaction terms of each variable, none of the variable interaction terms were significant. This means that the variables work the same for both the offenders and the students.

Table 20

Driving While Intoxicated Ordered Logistic Regression

	Students	Offenders	Interaction terms
	Coef	Coef	Coef
	(S.E.)	(S.E.)	(S.E.)
Rational Choice Theory Variables			
All Cost Certainty	-.016	-.009	-.003
	(.011)	(.006)	(.011)
All Cost Severity	.005	.000	.004
	(.005)	(.007)	(.008)
All Benefit Certainty	.008	.008	.003
	(.008)	(.005)	(.008)
All Benefit Severity	.001	.004	-.005
	(.009)	(.004)	(.009)
Background and Control Variables			
Age	.103	-.005	.093
	(.097)	(.013)	(.086)
Minority	1.362**	.454	.703
	(.506)	(.296)	(.547)
# Adult arrests	.770	.007	.698
	(.840)	(.015)	(.684)
Ever DD	2.227**	.007**	.679
	(.572)	(.015)	(.670)

p† <.10; *p < .05; **p < .01
Pseudo R2   Students-= 0.185   Offenders= 0.038
              Students N= 77   Offenders N= 188

An ordered logistic regression was also used to examine is related to students' and offenders' likelihood to engage in fighting (Table 21). The ordered logistic regression for the students indicated that none of the independent variables were not significant to the students' self-reported likelihood of getting into a fight. The cuts for the models can be found in Appendix E. The ordered logistic regression examining the sample of offenders indicated that age was marginally significant (coef. =0.037, p<.10). Ever having hit someone before was found to be significantly related to fighting likelihood (coef. =1.44, p<.01). A series of ordered logistic regressions where run to examine the interaction

terms of each independent variable. These regressions did indicate that all cost certainty, all cost severity, all benefit certainty, all benefit severity, age, and minority status were all found to be significant. This meaning that these variables do not work the same for both the offenders and the students.

Table 21

Fight Ordered Logistic Regression

	Students	Offenders	Interaction terms
	Coef (S.E.)	Coef (S.E.)	Coef (S.E.)
Rational Choice Theory Variables			
All Cost Certainty	-.002 (.014)	.002 (.007)	-.012 [†] (.007)
All Cost Severity	-.013 (.014)	-.003 (.010)	-.0100* (.004)
All Benefit Certainty	.003 (.011)	.010 (.007)	-.012* (.005)
All Benefit Severity	.002 (.009)	.008 (.008)	-.019* (.004)
Background and Control Variables			
Age	-.064 (.087)	-.037[†] (.021)	-.039* (.018)
Minority	-.186 (.540)	.388 (.381)	-.957* (.437)
# Adult arrests	-.279 (1.38)	-.000 (.026)	-1.39 (1.132)
Ever hit	.270 (.619)	1.442** (.515)	-.955 (.665)

p[†] <.10; *p < .05; **p < .01.
Pseudo R2   Students 0.016   Offenders 0.054
             Students N=54   Offenders N=103

Due to the skewness of the responses for robbery for the multivariate analysis the likelihoods were coded into dichotomous variables, 0- no reported likelihood and 1- any likelihood. A logistic regression was used to analyze this scenario due to the nature of the dependent variable (Table 22). In addition, interaction terms were also calculated for the

variables in the robbery analysis to examine if the variables work the same for both

students and offenders. For the student's none of the independent variables were

significantly related to if the students reported any likelihood of committing robbery.

While for the offenders all cost severity was significantly negatively related to reporting

any robbery likelihood (coef. =-.032, p<.01). All cost severity was also significantly

negatively related to any robbery likelihood (coef. =-.036, p<.05). Minority status was

also found to be negatively and significantly related to robbery likelihood (coef. =-.974,

p<.05). Ever having committing robbery in the past was also found to be significantly

and positively related to any robbery likelihood (coef. =1.829, p<.01). Interaction terms

were calculated for each of the independent variables. Then a series of logistic

regressions where run to examine the interaction terms of each independent variable. The

regressions did indicate that the interaction term for cost severity was significant,

meaning that cost severity does not act similarly for both samples.

Table 22

Robbery Logistic Regression

	Students B (S.E.)	Offenders B (S.E.)	Interaction terms
Rational Choice Theory Variables			
All Cost Certainty	-0.003 (0.140)	-0.032** (0.012)	0.002 (0.006)
All Cost Severity	-0.005 (0.021)	-0.036** (0.013)	0.000* (0.004)
All Benefit Certainty	0.011 (0.010)	0.012 (0.008)	-0.002 (0.005)
All Benefit Severity	0.000 (0.011)	0.006 (0.008)	-0.000 (0.004)

Control Variables			
Age	-0.248	-0.047	-0.007
	(0.157)	(0.028)	(0.020)
Minority	0.379	-0.974*	-0.605
	(0.632)	(0.485)	(0.401)
Ever Rob	-	1.839**	-
		(0.518)	
# Adult Arrests	-	-0.001	-
		(0.025)	

p † <.10; *p < .05; **p < .01.

Pseudo R2   Students = 0.0696 Offenders = 0.2432
             Students N= 65   Offenders=163
*Ever rob and adult arrested were omitted from analysis due to predicting failure perfectly

Summary of Findings

The findings reveal very few significant differences between offenders and students in reporting costs and benefits. However, there were a number of significant differences in the perceived certainty and severity of costs and benefits. For instance, the offenders reported a significantly higher certainty of legal costs than the students. In the driving while intoxicated, robbery and fighting scenarios, the students displayed regards for others. Students were more likely to report costs related to themselves or others getting hurt for robbery and getting into a fight. Students also reported higher severities for hurting others in the driving while intoxicated scenario and robbery.

When it comes to the self-reported likelihoods of engaging in crime the correlations did show that legal cost certainty and severity was related to robbery likelihood and legal severity for getting into a fight for offenders. Similarities between the two samples included the certainty of getting home safe being related to the likelihood of driving while intoxicated. Overall the correlations for all three scenarios showed more relationships for offenders.

The multivariate analysis did find that previously engaging in driving while intoxicated was significant for both samples. When more broadly comparing the interaction terms included in the model, they suggest that the independent variables work the same in the ordered logit for both samples. More specifically, the review of interaction terms suggests that in multivariate analysis, student and offender samples perform similarly. When it came to fighting however, the presence of statistically significant interaction terms indicated that the two samples functioned differently when modeling assault. When the interaction terms are significant it means that the independent variable is more strongly related to the dependent variables for one of the groups. Lastly, cost certainty and cost severity were significant for offenders. The interaction term of cost severity was significant, meaning it does not work the same for both samples. With respect to robbery, there are additional issues with the model omitting variables, which may be due to data limitations which will be discussed later.

CHAPTER V

Discussion

This dissertation contributes to the literature on criminal decision-making by analyzing whether male college students and offenders differ on their reported costs and benefits of driving while intoxicated, committing robbery, and getting into a fight (assault), and examining if these samples differ regarding the perceived certainty and severity of the costs and benefits. Further, the study examined whether the reported costs and benefits impact the participants' reported likelihood of engaging in the three types of crime and how the results compare across the two samples, with the final goal of being able to address the question as to whether student samples produce similar decision-making models as offenders. And found that offenders and students are comparable in their decision to drive while intoxicated but when more serious offenses such as robbery and getting into a fight were examined more differences between the two samples emerged.

Reported Costs & Benefits

Previous research has found that legal sanctions were the most commonly reported by students (Bachman et al., 1992; Nagin & Pogarsky, 2001, 2002; Paternoster & Simpson, 1996) and offenders (Bouffard et al., 2008) when given the opportunity to generate their own costs. The legal sanctions vary from getting pulled over, getting a ticket, and going to jail. Bouffard and Exum (2013) found that legal costs were reported by significantly more students than offenders. In contrast to Bouffard and Exum (2013), the current study found that legal costs were reported by significantly more offenders (68.0%) than students (58.0%). Bouffard's (2007) study he found that a much larger

percentage (93.9%) of students reported a legal cost of drunk driving in comparison to the current study.

For family costs, the current study found that students reported marginally significantly more family costs than did the offenders. Students reported costs such as their family would be upset, or angry. This was similar to Bouffard and Exum's (2013) findings on family costs, in that students reported more family consequences than offenders. Overall, the students and offenders are quite similar on the costs in which they report. For instance, a similar number of students and offenders reported hurting/killing themselves and hurting/killing other as consequences of driving while intoxicated. There also was no significant difference in the number of students and offenders who reported getting into a wreck.

In contrast to all the similarities found between the two samples in the driving while intoxicated scenario, the robbery scenario exhibited number of statistically significant differences between the two samples. First, there was a significant statistical difference in the amount of costs reported, with students reporting more costs. Prior research has demonstrated that the most common cost reported by students for scenarios like shoplifting and driving while intoxicated are legal costs (e.g. Bouffard, 2007). Consequently, legal costs were the most commonly reported by both the offenders and the students as a consequence of robbery. When it came to the other costs significantly more students reported getting shot/hurt/kill and hurting/killing other as a potential consequence of robbing the store. These were quite large significant differences between the two samples for these two costs, one potential reason for this may be because of the students' lack of experience with this type of crime and students may have a higher

regard for how their actions may hurt others. Paternoster and colleagues (2017) did find that students whom had higher regard for others were deterred from driving while intoxicated, so perhaps this would also hold true for robbery as well.

Significantly more students also reported a social costs and professional cost. Most commonly reported social and professional costs are losing their job and losing friends respectively. Possible reasons for this could be that since the students are currently enrolled in school and around their friends, they may realize that committing robbery is something that could affect their schooling, employment, and how their peers view them. Previous research has indicted that having strong social bonds gives individuals something to lose (Sherman, 1993).

Concerning the fighting scenario, the students reporting significantly more costs than the offenders. Legal costs were the most commonly reported cost for the offenders, while the most common for students was losing/getting hurt. Significantly, more students than offenders reported losing/getting hurt as a potential cost. In contrast, significantly more offenders reported hurting other as a potential cost (see Table 8). In the current study 51.6% reported the cost of losing the fight and getting hurt, this is quite different from the finding of Bouffard (2007) that found 75.5% of students reporting getting injured as a cost of fighting.

There were also some similarities and differences seen between the two samples regarding the number of and type of benefits reported for each scenario. Students did report significantly more benefits to driving while intoxicated than did the offenders. There was no significant difference in the samples reporting getting home safe, whereas Bouffard and Exum (2013) did find in their study that significant more offenders

reporting getting home safe as benefit. The current found that significantly more students reported having their car the next morning as a benefit, which was also the opposite of Bouffard and Exum's (2013) finding.

From the analysis of the benefits reported for the robbery scenario, it was found students did report significantly more benefits to robbery than did the offenders. The only significant difference was the students were more likely to report getting money as a benefit of committing robbery. As with the two prior scenarios, for the fight scenario students did report significantly more benefits to driving than did the offenders. For the fighting scenario, the most common benefits for both samples was winning the fight. Yet significantly more students reported winning the fight than the offenders, as well as teaching the guy a lesson. Bouffard's (2007) study found that winning the fight was reported by 24.1% of the students, whereas in the current study found that 21.4% reported winning the fight. Both studies show a similar percentage of students reporting winning the fight as a benefit.

Perceived Certainty & Severity

While there were some significant differences in the types of the costs and benefits that the students and the offenders, the certainty and the severity are also important. As rational choice theory implies the certainty that one will receive the cost and how severe the cost is important to the decision to engage in criminal behavior (Bachman et al., 1992; Carmichael & Piquero, 2004; Cornish & Clarke, 1986; Loewenstein et al., 1997; Wright & Decker, 1997). The current used t-tests to examine the differences in the self-reported certainty and severity of the reported costs and benefits to examine the differences between the samples.

The certainty of the costs from the driving while intoxicated were not significantly different from getting into a wreck, hit/kill other and hurt/kill self. However, the certainty of legal costs was significantly higher for the offenders (see Table 10). It is possible that the certainty is higher for offenders is that because they currently experiencing a legal sanction they may be more concerned with legal sanctions than the students. The previous research by Bouffard and Exum (2013) did not find legal cost certainty to be different between the two samples. However, their study did find that the certainty of hurting/killing other and hurting/killing self were different between the two samples. For the severity of the costs of the current study, the only significant difference was that students reported a significantly higher severity of hurting/killing other than the offenders. This suggests that students may have more concern for others, as their 99.9% severity rating of hurting/killing over show they feel it would be very bad if someone else got hurt by them driving while intoxicated.

Regarding the robbery scenario, there was a marginally significant difference between the samples certainty of getting shot/hurt killed, with the offenders reporting a higher certainty that this would occur if they robbed the store. Interestingly, the severity of getting shot/hurt/killed was significantly different, with the students reporting a higher severity of this occurring. This shows that the students feel it would be really bad if they were to get hurt, which in turn could lead to deterrence from committing robbery. The students also reported a significantly higher severity of hurting/killing other. These results once again suggest that students show more concern for others.

Regarding the certainty of costs for getting into a fight, there were significant differences between the two samples for losing the fight/getting hurt and hurting other.

The offenders reported the higher certainty that they would lose the fight/get hurt, but the offenders also reported a higher certainty that they would hurt the other person. The offenders' certainty of hurting other was higher than their certainty of losing the fight/getting hurt. This finding that offenders had a high certainty of hurting others, suggests that may have a higher confidence in their ability when fighting even though they know hurting someone else is a bad thing.

Now focusing on the benefits or good things that could happen from driving while intoxicated. The offenders had a statistically higher certainty that they would get home safe in comparison to the students. The offenders are more confident they would make it home safely, this is possibly because offenders see driving themselves home as a legitimate way to get home so they would have their car and be able to get to work. There is also the possibility the certainty is higher as they have driven home safely, without being caught before. The benefit of making it to work was reported with a significantly higher certainty by the offenders. Comparing the current study to Bouffard and Exum (2013) their study found that offenders reported higher certainty for getting home safe and having car. The current study did not find any significant differences of the severity rating of the benefits, which is opposite of Bouffard and Exum (2013) who found that the offenders reported higher severity of all benefits.

The reported benefits of robbery the certainty of getting away with it was marginally significant, with offenders reporting a higher certainty of getting away with robbery. The students however, reported a significantly higher severity (importance) to getting away with it. While the students did not feel as certain they may get away with committing robbery, they expressed that the importance (severity) of getting away with it

was important. This suggests that the students place a high importance on not receiving a punishment, which in turn could be a good deterrent.

For getting into a fight, the offenders reported a significantly higher certainty of feeling good/ getting respect if they were to get into a fight. Likewise, the offenders also reported a significantly higher severity (importance) of feeling good/getting respect. This finding suggests that offenders' place more emphasis on the feelings they would get from getting in fight than students. It is possible this is due to offenders past experience with fighting, or even their current situation in which they may feel they need to gain respect.

Predicting Offending Likelihood

The first test used to examine how the cost and benefit certainty and severity impacted the offending likelihood were correlations. Concerning driving while intoxicated the certainty of hurting/killing self was negatively correlated to the likelihood of driving while intoxicated for students. More specifically when the certainty of getting hurt/dying increases the likelihood of driving while drunk for the students. The severity (importance) of having their car the next morning was positively correlated for offenders. As the severity of having the car increased the offenders' likelihood of driving while intoxicated. This may suggest that offenders do not want to leave their car. One reason for this may be that offenders being older have more responsibilities that they need their car in order to fulfill (e.g. work, kids). Bouffard and Exum (2013) found numerous significant correlations in their study between cost certainty and offense likelihood. For instance, the certainty of legal costs was negatively correlated for both students and offenders, as well as the certainty of getting into a wreck for both samples. They also found the certainty of hurting/killing over and getting hurt/killed was negatively

correlated to the likelihood of driving while intoxicated. Also, the current findings were opposite of Bouffard and Exum (2013) as they found students certainty of having the car to be significant, and the current study found this true for offenders.

The offenders' certainty and severity of legal costs were both negatively correlated to their robbery likelihood. When the offenders reported a higher certainty, they would receive a legal cost the likelihood they would commit robbery decreased. Similarly, when the offenders reported a higher severity of receiving a legal cost, their likelihood of robbery decreased. This shows that legal costs are more influential for offenders than students. This could be due to a number of reasons. Perhaps offenders are actually deterred by legal sanctions when it comes to robbery. But perhaps there is no correlation of legal effect for students, which may be due to the fact that the majority of the students reported a 0% likelihood they would commit robbery. This may also be the reason that there are no significant correlations for the students is because a majority of the students did not report any or high likelihoods they would commit robbery.

Focusing the benefits of robbery, for offenders the certainty of 'getting money' was positively correlated to the likelihood of committing robbery. So, the more certain the offenders were they would obtain money be committing robbery, the higher the likelihood they would commit robbery. These findings for offenders do show support for rational choice, in that the certainty and the severity of legal costs were related to the likelihood, as well as the certainty of the reward of money. The finding that the certainty of getting money suggests that being able to reduce the certainty of getting money when committing robbery could impact policies to reduce an establishment for being an attractive target.

With respect to the scenario about getting into a fight, the severity of legal costs were negatively related to offender likelihood of getting into a fight. The more severe (important) offender felt a legal sanction would be the lower the fighting likelihood. Additionally, the offenders' certainty of losing the fight/getting hurt was negatively correlated to the likelihood to fight. When offenders were more certain they may lose or get hurt, their likelihood to fight decreased. Whereas when students' reported a higher certainty of hurting another, their fighting likelihood decreased. Once again this suggests that student's feelings towards other is related to their offending likelihood, similar to Paternoster's (2017) findings. There were no significant correlations with the benefits of students However, the severity (importance) of winning the fight was positively correlated to offenders' likelihood to fight, as well as the certainty that they would feel good/get respect. This suggests that offenders are more concerned with their appearance, as winning the fight and feeling good/getting respect were important to them.

Ordered logistic regressions were used to examine the driving while intoxicated and fighting scenario (Table 19). For the driving while intoxicated scenario for student sample, minority status was significant, for minority participants the odds of high likelihood of driving while intoxicated are 1.362 times higher than for white participants when other variables are held constant. Ever having driven while intoxicated was also significant meaning that those who have driven drunk in the past the odds of having a high likelihood of driving while intoxicated is 2.227 higher than for those who have never driven drunk. Having ever driven drunk was also significant for the offenders meaning that for those offenders who have driven drunk in the past the odds of having a high likelihood of driving while intoxicated is .007 higher than for those who have never

driven drunk. These findings suggest that engaging in the behavior previously are related to reporting a higher likelihood of driving while intoxicated. This finding is consistent with the findings of Bouffard and Exum (2013).

The interaction terms were created for each of the variables in the ordinal logistic regression, and then each interaction term was put into a regression one at a time to test for significance. For the driving while intoxicated scenario none of the interaction terms were significant. This means that the variables work the same in the model for the students and offenders. This finding as well as those from the bivariate analysis provides support that for the offense of driving while intoxicated student samples are a good proxy for offenders for examining decision-making. In comparison to Bouffard and Exum (2013) the current study found fewer significant differences in the types of costs, however it did find a significant difference in the certainty of legal costs. The current study also found fewer significant differences in the severity of the costs and benefits. Focusing on the big picture both studies did find that students' decision-making is comparable to that of offender decision-making for driving while intoxicated.

The ordered logistic regression about getting into a fight did not show any of the variables significant in the student model (Table 20). For the offenders' ever having hit before was significant. For offenders who have hit someone in the past, the odds of having a high likelihood of getting into a fight is 1.44 higher than for those who have never hit someone. The interaction terms were created for each of the variables in the ordinal logistic regression, and then each interaction term was put into a regression one at a time to test for significance. For this scenario, there were a number of interaction terms that were significant. All cost severity, all benefit certainty, all benefit severity, age, and

minority status were all significant, meaning these variables do not work the same for each sample. This finding indicates that for getting into a fight, students make not make a good proxy to offenders for the decision to engage in this type of offense. When it comes to examining the decision-making of the two samples it is possible that there is a factor that is related to the decision to offend that is not included in the current study.

For the robbery scenario a logistic regression was used, due to a majority of the student sample reporting a zero likelihood of committing robbery, a dichotomous likelihood variable was used. The results indicate that the higher the cost certainty the lower the odds are that an individual would report any likelihood of committing robbery. Same for cost severity, the higher the severity the lower the odds are that an individual would report any likelihood of committing robbery. Ever having committed robbery was also significant, as those offenders who had committed robbery in the past showed a .839 increase in the log odds of reporting any likelihood of committing robbery.

Once again for the robbery scenario interaction terms were created for each of the variables in the logistic regression, and then each interaction term was put into a regression one at a time to test for significance (Table 21). The interaction term for all cost severity was significant, meaning this variable works differently for the two samples. While the interaction terms show that all but one of the rational choice variables works similarly for the two samples, this should be interpreted with caution as the dependent variable was dichotomous. This limits the conclusions that can be made, as any likelihood can range from 0 to 100. With so few students and offenders reporting any likelihood or high likelihoods of committing robbery, this suggests that there may be something about the offense of robbery that makes both offenders and students not want

to engage in it. Decker and colleagues (1995) had found that non-offenders did not have any intention to engage in robbery regardless of the benefits. This further suggests there maybe something about offenders that is not being captured in this research.

Overall, the current study shows that decision-making driving while intoxicated offenders and students is similar. And that students make a good proxy for offenders. This however was not the case for getting into a fight. There were differences between the certainty of costs and the certainty and severity of feeling good/getting respect. The interactions terms for the variables in the fight scenario also indicated that the variables work differently for the two samples. Suggestions for future research regarding this type of offense and what variables be related to decision-making will be discussed. Additionally, as mentioned for robbery there were data limitations with comparing the two samples, this will be further discussed in the limitation section.

As the current study relates to the previous decision-making literature, the current study did find similarities and differences in regard to the number of participants from each sample that reported the different costs and benefits to Bouffard and Exum (2013). For instance, the current found that significantly more students reported having their car the next morning as a benefit, which was also the opposite of Bouffard and Exum (2013). As mentioned earlier legal costs were a very common reported cost in the current study, as well as in previous literature (Bachman et al., 1992; Bouffard, 2007; Nagin & Pogarsky, 2001, 2002; Paternoster & Simpson, 1996). The current study found the same overall conclusion as Bouffard and Exum (2013) that offenders and students are similar in regard to their decision-making to drive while intoxicated.

In a number of the scenarios the students showed that their feeling towards other were important to their decision to offend. For example, significantly more students reported hurting/killing another as a cost for robbery, hurting other as a cost for fighting, a higher severity for hurting/kill other for driving while intoxicated and the certainty of hurting other was negatively correlated to the likelihood to fight. Paternoster and colleagues (2017) found that students that held higher regard for others were less likely to drive while intoxicated, which is similar to the finding of the certainty of hurting other being related to the student's likelihood to fight.

The current study also provided evidence that the certainty and severity of costs and benefits were significant to offending likelihoods in the bivariate models. In the multivariate model cost certainty and severity were significant for offenders for their likelihood of committing robbery. This finding shows support for rational choice for offenders' considering costs when making the decision to engage in robbery. The study conducted by Wright and Decker (1997) about burglars found that the offenders considered the costs and benefits of engaging in burglary. Other decision-making research that focused on offenders also found that the risk (cost) was significant in the offenders' decision to offend (Copes et al., 2012).

Overall, the current study has produced results similar and different from previous research, in addition to expanding knowledge on student and offenders decision-making process to engage in robbery and getting into a fight. The findings on the two new criminal activities suggest the offenders' consideration of costs are related to their likelihood of engaging in robbery. The results also suggest that there are differences between offenders' and students' decision to engage in a fight. There is a need for further

research to better understand the similarities and differences in offenders' and students' decision to engage in fighting behavior.

The Question of Comparability

In regard to the first research question examining the similarities and differences between the students and offender perception of costs and benefits, this dissertation found that in relation to driving while intoxicated, there were few significant differences in the number of students and offenders who reported the categorized costs and benefits. Significantly more offenders did report a legal cost. However, for robbery, there were a number of significant differences in the percentage of offenders and students who reported robbery costs (i.e. Get shot/hurt/killed, hurt/kill other, professional cost). Additionally, significantly more students reporting getting money as a benefit of robbery.

There were two significant differences in the percentage of offenders and study who reported the costs of losing the fight/get hurt, and hurting other, for the getting into a fight. There were also two significant differences in the benefits (i.e. win fight, teach lesson). Overall, driving while intoxicated had a fewest significant differences between the two samples, whilst robbery had the most.

The second research question focused on the self-generated perceived certainty and severity of the costs and benefits between the two samples. The two samples were mostly similar on the certainty and severity of costs for driving while intoxicated, with the exceptions of the offenders reporting higher legal certainty, and students' reporting higher severity of hurting others. The results also indicted offenders have a significantly higher certainty of getting home.

The perceived certainty of the robbery costs did not differ between the samples. Although the severity of getting shot/hurt/killed was higher for students. The reported benefits of robbery did not differ on certainty, but the students reported a higher severity (importance) of getting away with it. There were two differences between the two samples in the certainty of the costs, with offenders reporting the higher certainties of getting into a fight. There were no differences in the severity of the costs. Concerning the benefits of getting into a fight, feeling good/getting respect differed between the two samples on certainty and severity. Overall, there are some differences between the certainty and severity of costs and benefits between the two samples. These findings suggest that the students and offenders are more similar than different.

The last question examined in the study sought to establish how the two samples' level of perceived certainty and severity of costs and benefits impact their self-reported likelihood of engaging in the three types of crime. The likelihood of driving while intoxicated was influenced by past drunk driving for both the students and offenders in the ordinal logistic regression. The non-significance of the interaction terms suggested that the variable work similar for the two samples. These results do suggest that the two samples are similar in what decision-making variables predicting their likelihood to drive while intoxicated.

From the answers to each of the questions this study found support that students are a good proxy for understanding offender decision-making for driving while intoxicated. However, the same conclusion cannot be made for fighting and robbery. Offenders' prior experience of fighting was found to be related to their likelihood of getting into a fight. Once examining the interaction terms, all cost severity, all benefit

certainty, all benefit severity, age, and minority status were all significant. The results indicating that all of these variables do not work the same for each sample, does suggest that student and offender decision-making for getting into a fight is not similar.

Lastly, offenders' cost certainty and cost severity were found to impact their likelihood of committing robbery. The interaction term for all cost severity was significant, meaning this variable works differently for the two samples. Although the other interaction terms show that all but one of the rational choice variables works similarly for the two samples. While the regression and interaction terms do suggest that students' and offenders' decision-making is similar, this should be interpreted cautiously.

When looking at the results for all three of the scenarios it does appear that when the crimes begin to get more serious that offenders' and students' decision-making becomes more different. Support for this is seem as the students' and offenders' are very similar on driving while intoxicated but their decision-making is different when looking at robbery and getting into a fight. This finding does suggest that there is something about offenders that is related to their decisions to engage in serious crime that is not being captured. Overall, the results to the last research question do find that rational choice variables, as they relate to decision-making are similar or different between the two samples depending upon the crime type.

Limitations & Future Research

While the current study adds to the current body of literature on decision-making and comparing student and offender samples, while examining two scenarios that have not been examined for offenders and students previously. There are several limitations to the currents study that permit caution to be used when drawing conclusions from the

results of the study. First, the sample size became small for some the analysis as there was missing data. This was caused by participants not filling in any cost or benefits, or not filling in a certainty or severity for the costs or benefits they reported. The small sample size does limit the conclusions that can be made from the results.

While allowing the participants to generate their own costs and benefits has shown by pervious research to have various advantages (Bouffard, 2002a; Bouffard, 2007; Schwarz & Oysterman, 2001). These advantages include getting a better picture of all the costs and benefits that the participants consider when making decisions. While this is important in the current study it also showed to have a problem with missing data.[3] In the current study a number of participants just did fill in costs, benefits, certainty or severity score. This may have been for a number of reasons, which may include survey fatigue. With so many participants not reporting benefits, this poses the questions as to whether they felt there were no good things that could happen, which would be different than just not choosing to fill it in. This is something that should be taken into consideration in future studies.

Another limitation was with the robbery scenario, and the way the likelihood variable was coded. It had to be coded into a dichotomous variable, predicting no likelihood to 1- 100% likelihood. Unfortunately, that can lead to an underestimation of the variation between the groups. This then limits the conclusions as to the similarities and differences between the students and offenders. A potential reason that there may have been so few students who would report high likelihoods maybe that students just

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[3] Little's Missing Completely at Random test was run for each of the three scenarios. The results indicated that the data was missing at random of the driving while intoxicated scenario. ($p > .05$) However, for the robbery and fighting scenario the missing data was not completely at random ($p < .01$). This could be due to a number of reasons not limited to survey fatigue, and unidentified differences between the two samples.

would not be willing to engage in robbery. This may also indicate that there is something different about the robbery in comparison to driving while intoxicated. Therefore, it would be useful for future to examine robbery with larger samples, to see if the results are consistent. Another limitation that leads the way for future research is that the sample of the current study was all male. Future research would benefit from being able to also compare female offenders and college students to one another.

With the limitations of the current study future studies should replicate the current study to see if their results are similar. Although the current study results are to be interpreted with caution there appears to be more similarities between students and offenders for driving while intoxicated than robbery, future research could benefit from looking at other types of offenses to see if student and offender decision-making is similar for certain offense types. The fight scenario in the current study is about an incident in a parking lot, future research could benefit from exploring other fighting scenarios. For instance, a scenario about getting into a fight at a bar or at a party, where both samples would likely be able to relate to may produce different results. Additionally, future research could benefit from matching the two samples on similar characteristics. Matching could help in controlling for differences related to individual differences, such as age which was seen to be significant in a few of the models. Future research should continue to compare students and offenders in order to better understand the decision-making process.

Conclusion

In conclusion, similarly to previous research this study found support that students are a good proxy for understanding offender decision-making for driving while

intoxicated. The current study added to the literature by examining student and offender's decision-making for two additional offense types, committing robbery, and getting into a fight. While the current study found some support that offenders and students share some similarities for decision-making, but the results also suggest that there may be something about offenders the study is not capturing when looking at more serious offenses like robbery and getting into a fight. There may be something specifically about the offenses of robbery and getting into a fight, such as it involves another person that affects how students and offenders make the decision to engage in those offenses. Scholars should continue to examine decision-making using offenders and students to see how similar and different the samples are. Finally, future research should also consider looking at other types of offenses and how to improve upon the methodological issues the current study faced.

REFERENCES

Assaad, J. M., & Exum, M. L. (2002). Understanding intoxicated violence from a rational choice perspective. *Rational Choice and Criminal Behavior: Recent Research and Future Challenges, London: Routledge*, 65-84.

Ajzen, I. (1990). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I., & Fishbein, M. (1980). U*nderstanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Bachman, R., Paternoster, R., & Ward, S. (1992). The rationality of sexual offending: Testing a deterrence/rational choice conception of sexual assault. *Law & Society Review. 26*, 343.

Becker, G. S. (1967). *Human capital and the personal distribution of income: An analytical approach* (No. 1). Institute of Public Administration.

Becker, G. S. (1968). Crime and punishment: an economic approach. *Journal of Political Economy, 76, 169–217*.

Baker, T., & Piquero, A. R. (2010). Assessing the perceived benefits—criminal offending relationship. *Journal of Criminal Justice*, *38*(5), 981-987.

Beccaria, C. (1764). *On Crimes and Punishments.* Indianapolis, IN: Hackett Publishing Co.

Bennett, T., & Wright, R. (1984*). Burglars on burglary: prevention and the offender*. Aldershot, England: Glower

Bentham, J. (1789) *Introduction to principles of morals and legislation*, Reprinted in: Burns J.H., et. al. Eds. 'The collected works of Jeremy Bentham, Clarendon Press, 1968, Oxford

Birkbeck, C., & LaFree, G. (1993). The situational analysis of crime and deviance. *Annual Review of Sociology*, *19*(1), 113-137.

Blackwell, B. S. (2000). Perceived sanction threats, gender, and crime: A test and elaboration of power-control theory. *Criminology*, *38*(2), 439-488.

Bouffard, J. A. (2002a). The influence of emotion on rational decision making in sexual aggression. *Journal of Criminal Justice*, *30*(2), 121-134.

Bouffard, J. A. (2002b). Methodological and theoretical implications of using subject generated consequences in tests of rational choice theory. *Justice Quarterly*, *19*(4), 747-771

Bouffard, J. A. (2007). Predicting differences in the perceived relevance of crime's costs and benefits in a test of rational choice theory. *International Journal of Offender Therapy and Comparative Criminology, 51*(4), 461-485.

Bouffard, J., Bry, J., Smith, S., & Bry, R. (2008). Beyond the "Science of Sophomores" Does the Rational Choice Explanation of Crime Generalize From University Students to an Actual Offender Sample?. *International Journal of Offender Therapy and Comparative Criminology*, *52*(6), 698-721.

Bouffard, J. A., & Exum, M. L. (2013). Rational choice beyond the classroom: Decision making in offenders versus college students. *Journal of Criminal Justice*, *41*(6), 438-447.

Bouffard, J. A., Exum, M. L., & Collins, P. A. (2010). Methodological artifacts in tests of rational choice theory. *Journal of Criminal Justice*, *38*(4), 400-409.

Bouffard, J.A., & Niebuhr, N. (2017). The Use of Experimental Designs in the Study of Offender Decision Making. Peer-reviewed book chapter, in W. Bernasco, J-L. van Gelder, & H. Elffers. (Eds), *The Handbook of Offender Decision Making*. EdsNew York, NY: Oxford University Press.

Braithwaite, J. (1989). Criminological theory and organizational crime. *Justice Quarterly*, *6*(3), 333-358.

Brezina, T. (2002). Assessing the rationality of criminal and delinquent behavior: a focus on actual utility. In Piquero A. R. & Tibbetts, S.G.(Eds.), *Rational choice and criminal behavior*. New York: Garland.

Carmichael, S., & Piquero, A. R. (2004). Sanctions, perceived anger, and criminal offending. *Journal of Quantitative Criminology*, *20*(4), 371-393.

Weaver, F., & Carroll, J. (2014). Shoplifters' Perceptions of Crime Opportunities: A Process-Tracing Study. In *The Reasoning Criminal* (pp. 19-38). Routledge.

Cernkovich, S. A., & Giordano, P. C. (1992). School bonding, race, and delinquency. *Criminology*, *30*(2), 261-291.

Clarke, R. V., & Cornish, D. B. (2002). Rational Choice. In Paternoster, R. and Bachman, R. (Eds.), *Explaining Crime and Criminals. Essays in Contemporary Criminological Theory*, Roxbury.

Clarke, R. V., & Cornish, D. B. (2013). The rational choice perspective. In *Environmental Criminology and Crime Analysis* (pp. 43-69). Willan.

Clarke, R. V., & Cornish, D. B. (2001). Rational choice. *Explaining Criminals and Crime: Essays in Contemporary Criminological Theory*, 23-42.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences. Hillsdale, NJ: Lawrence Erlbaum Associates.

Cornish, D., & Clarke, R. (1986). Situational prevention, displacement of crime and rational choice theory. In *Situational Crime Prevention: From Theory into Practice*, 1-16.

Cornish, D. B., & Clarke, R. V. (1987). Understanding crime displacement: An application of rational choice theory. *Criminology*, *25*(4), 933-948.

Cornish, D. B., & Clarke, R. V. (2006). "Rational choice." In Henry, S. and Lanier, M. (Eds.), *The Essential Criminology Reader*. Boulder, CO: Westview Press

Copes, H., Hochstetler, A., & Cherbonneau, M. (2012). Getting the upper hand: Scripts for managing victim resistance in carjackings. *Journal of Research in Crime and Delinquency*, *49*(2), 249-268.

Cromwell, P. R., Olson, J. N. and Avary, D. (1991) How residential burglars choose targets: An ethnographic analysis. *Security Journal* 2: 195–9

Decker, S., Wright, R., & Logie, R. (1993). Perceptual deterrence among active residential burglars: A research note. *Criminology*, *31*(1), 135-147.

Exum, M. L. (2002). The application and robustness of the rational choice perspective in the study of intoxicated and angry intentions to aggress. *Criminology*, *40*(4), 933-966.

Exum, M. L., & Bouffard, J. A. (2010). Testing theories of criminal decision making: Some empirical questions about hypothetical scenarios. In *Handbook of quantitative criminology* (pp. 581-594). Springer, New York, NY.

Feeney, F. (1986), 'Robbers as Decision-Makers', in D. Cornish and R. Clarke, (Eds.), The Reasoning Criminal: Rational Choice Perspectives on Offending, 53–71. New York: Springer-Verlag.

Felson, M. (2011). Routine activities and transnational crime. *International Crime and Justice*, 11-18.

Finley, N. J., & Grasmick, H. G. (1985). Gender roles and social control. *Sociological Spectrum*, *5*(4), 317-330.

Grasmick, H. G., & Bursik Jr, R. J. (1990). Conscience, significant others, and rational choice: Extending the deterrence model. *Law and society review*, 837-861.

Grasmick, H. G., & Green, D. E. (1980). Legal punishment, social disapproval and internalization as inhibitors of illegal behavior. *J. Crim. L. & Criminology*, *71*, 325.

Hobbes, T. (1961). *Hobbes: On the citizen*. Cambridge University Press.

Hochstetler, A., DeLisi, M., & Puhrmann, A. M. (2007). Toward an integrated model of offending frequency: A replication study. *Justice Quarterly*, *24*(4), 582-599.

Horney, J., & Marshall, I. H. (1992). Risk perceptions among serious offenders: The role of crime and punishment. *Criminology*, *30*(4), 575-594.

Johnson, E.J. & Payne, J.W. (2014). The decision to commit a crime: An information processing analysis. In Cornish. D. & Clark, R. (Eds.), The Reasoning Criminal: Rational Choice Perspectives of Offending (pp. 170-185). New York: Springer-Verlag.

Loewenstein, G., Nagin, D., & Paternoster, R. (1997). The effect of sexual arousal on expectations of sexual forcefulness. *Journal of Research in Crime and Delinquency*, *34*(4), 443-473.

Long, J. S. (2009). Group comparisons in logit and probit using predicted probabilities. *Department of Sociology, University of Indiana. Unpublished manuscript*.

Loughran, T. A., Paternoster, R., Chalfin, A., & Wilson, T. (2016). Can rational choice be considered a general theory of crime? Evidence from individual-level panel data. *Criminology*, *54*(1), 86-112.

Matsueda, R. L., Kreager, D. A., & Huizinga, D. (2006). Deterring delinquents: A rational choice model of theft and violence. *American sociological review*, *71*(1), 95-122.

Mehlkop, G., & Graeff, P. (2010). Modelling a rational choice theory of criminal action: Subjective expected utilities, norms, and interactions. *Rationality and Society*, *22*(2), 189-222.

Menard, S. (2001). *Applied logistic regression analysis* (Vol. 106). Sage.

Nagin, D. S., & Paternoster, R. (1993). Enduring individual differences and rational choice theories of crime. *Law & Society Review.*, *27*, 467.

Nagin, D. S., & Pogarsky, G. (2001). Integrating celerity, impulsivity, and extralegal sanction threats into a model of general deterrence: Theory and evidence. *Criminology*, *39*(4), 865-892.

Nagin, D. S., & Pogarsky, G. (2002). An experimental investigation of deterrence: Cheating, self-serving bias, and impulsivity. *Criminology*, *41*(1), 167-194.

Pratt, T. C., Cullen, F. T., Blevins, K. R., Daigle, L. E., & Madensen, T. D. (2006). The empirical status of deterrence theory: A meta-analysis. *Taking stock: The Status of Criminological Theory*, *15*, 367-396.

Paternoster, R. (1987). The deterrent effect of the perceived certainty and severity of punishment: A review of the evidence and issues. *Justice Quarterly*, *4*(2), 173-217.

Paternoster, R. (1986). The use of composite scales in perceptual deterrence research: A cautionary note. *Crime & Delinquency*, *23*(2), 128-168.

Paternoster, R., Jaynes, C. M., & Wilson, T. (2017). Rational choice theory and interest in the "Fortune of Others". *Journal of research in crime and delinquency*, *54*(6), 847-868.

Paternoster, R., & Piquero, A. (1995). Reconceptualizing deterrence: An empirical test of personal and vicarious experiences. *Crime & Delinquency*, *32*(3), 251-286.

Paternoster, R., Saltzman, L. E., Waldo, G. P., & Chiricos, T. G. (1982). Causal ordering in deterrence research: An examination of the perceptions-behavior relationship. In *Deterrence reconsidered: Methodological innovations* (pp. 55-70). Sage Beverly Hills.

Paternoster, R., & Simpson, S. (1996). Sanction threats and appeals to morality: Testing a rational choice model of corporate crime. *Law & Society Review.*, *30*, 549.

Piquero, A. R., & Hickman, M. (2002). The rational choice implications of control balance theory. In Piquero, A.R. & Tibbets, S. G. (Eds.), *Rational choice and criminal behavior: Recent research and future challenges*. Routledge.

Piquero, A., & Tibbetts, S. (1996). Specifying the direct and indirect effects of low self-control and situational factors in offenders' decision making: Toward a more complete model of rational offending. *Justice Quarterly*, *13*(3), 481-510.

Piliavin, I., Gartner, R., Thornton, C., & Matsueda, R. L. (1986). Crime, deterrence, and rational choice. *American Sociological Review,* 51, 101-119.

Pogarsky, G. (2009). Deterrence and decision-making: Research questions and theoretical refinements. In M.D. Krohn, A.J. Lizotte, G.P. Hall (Eds.) *Handbook on crime and deviance*. New York:Springer

Pogarsky, G. (2002). Identifying "deterrable" offenders: Implications for research on deterrence. *Justice Quarterly*, *19*(3), 431-452.

Pogarsky, G., & Piquero, A. R. (2003). Can punishment encourage offending? Investigating the "resetting" effect. *Journal of Research in Crime and Delinquency*, *40*(1), 95-120.

Pogarsky, G., & Piquero, A. R. (2004). Studying the reach of deterrence: Can deterrence theory help explain police misconduct?. *Journal of Criminal Justice*, *32*(4), 371-386.

Rebellion, C., Piquero, N., Piquero, A., & Tibbetts, S. (2010). Anticipated shaming and criminal offending. *Journal of Criminal Justice*, 38, 988–997.

Rengert, G., & Wasilchick, J. (1989). Space, time, and crime: Ethnographic insights into residential burglary. *Final Report to the National Institute of Justice, US Department of Justice.*

Reynolds, M. O. (1996). *Crime and punishment in Texas: Update*. National Center for Policy Analysis.

Richards, P., & Tittle, C. R. (1981). Gender and perceived chances of arrest. *Social Forces*, *59*(4), 1182-1199.

Schwarz, N., & Oyserman, D. (2001). Asking questions about behavior: Cognition, communication, and questionnaire construction. *American Journal of Evaluation*, *22*(2), 127-160.

Sherman, L. W. (1993). The influence of criminology on criminal law: Evaluating arrests for misdemeanor domestic violence. *The Journal of Criminal Law and Criminology (1973)*, *83*(1), 1-45.

Sherman, L. W., Smith, D. A., Schmidt, J. D., & Rogan, D. P. (1992). Crime, punishment, and stake in conformity: Legal and informal control of domestic violence. *American Sociological Review*, 680-690.

Shover, N. (2012). *Life histories and autobiographies as ethnographic data* (pp. 11-22). London: SAGE Publications.

Simpson, S. S., & Koper, C. S. (1992). Deterring corporate crime. *Criminology*, *30*(3), 347-376.

Simpson, S. S. (1996) in Pearce, F., & Snider, L. (Eds.). *Corporate crime: Contemporary debates*. University of Toronto Press.

Stafford, M. C., & Warr, M. (1993). A reconceptualization of general and specific deterrence. *Journal of research in crime and delinquency*, *30*(2), 123-135.

Tibbetts, S. G., & Gibson, C. L. (2002). Individual propensities and rational decision-making: Recent findings and promising approaches. In Piquero, A.R. & Tibbets, S. G. (Eds.), *Rational choice and criminal behavior: Recent research and future challenges*. Routledge.

Tibbetts, S. G., & Herz, D. C. (1996). Gender differences in factors of social control and rational choice. *Deviant Behavior*, 17, 183–208.

Tittle, C. R. (1977). Sanction fear and the maintenance of social order. *Social Forces*, *55*(3), 579-596.

Tunnell, K. D. (1992). *Choosing crime: The criminal calculus of property offenders.* Chicago: Nelson-Hall.

Vaughn, D. (1999). Rational choice, situated action, and the social control of organizations*. Law & Society Review,* 32(1), 23-61.

Williams, K. R., & Hawkins, R. (1986). Perceptual research on general deterrence: A critical review. *Law &Society Review, 20*, 545.

Wright, B. R., Caspi, A., Moffitt, T. E., & Paternoster, R. (2004). Does the perceived risk of punishment deter criminally prone individuals? Rational choice, self-control, and crime. *Crime & Delinquency*, *41*(2), 180-213.

Wright, R. T., & Decker, S. H. (1994). *Burglars on the job: Streetlife and residential break-ins.* Boston: Northeastern University Press.

Wright, R. T., & Decker, S. H. (1997). *Armed Robbers in Action*. Boston, MA: Northeastern University Press

Wright, R., Decker, S. H., Redfern, A. K., & Smith, D. L. (1992). A snowball's chance in hell: Doing fieldwork with active residential burglars. *Crime & Delinquency*, *29*(2), 148-161.

Wright, R. T., Logie, R., & Decker, S. H. (1995). Criminal expertise and offender decision-making: An experimental study of the target selection process in residential burglary.
Crime & Delinquency, 32, 39–53.

APPENDIX A

Appendix A. Study Methodologies

Qualitative	Bennett & Wright, 1984; Shover, 1983, 1996; Topalli, 2005; Tunnell, 1992; Wright & Decker, 1994
Longitudinal	Loughran, Paternoster, Chalfin, & Wilson, 2016; Paternoster, 1989; Piliavin, Gartner, Thornton, & Matsueda, 1986; Wright, Caspi, Moffit, & Paternoster, 2004
Cross-sectional	Hochstetler, DeLisi, & Puhrmann, 2007; Horney & Marshall, 1992; Grasmick & Green, 1980
Hypothetical Vignettes with predetermined costs/benefits	Bachman, Paternoster, & Ward, 1992; Carmichael & Piquero, 2004; Decker, Wright, & Logie, 1993; Exum, 2002; Loewenstein, Nagin, & Paternoster,1997; Nagin & Paternoster, 1993; Nagin & Pogarsky, 2001; Paternoster & Simpson, 1996; Piquero & Tibbetts, 1996; Pogarsky, 2002; Pogarsky & Piquero, 2004; Rebellion, Piquero, Piquero, & Tibbetts, 2010; Tibbetts, 1997; Tibbetts & Herz, 1996
Hypothetical Scenarios with participant generated costs/benefits	Bouffard, 2002a; Bouffard, 2002b; Bouffard 2007; Bouffard, Bry, Smith, & Bry, 2008; Bouffard & Exum, 2013; Bouffard, Exum, & Collins, 2010

APPENDIX B

Appendix B. Participant Generated Costs and Benefits and their Corresponding Thematic Grouping for Driving While Intoxicated

Participant Generated Consequences	Thematic Grouping
Arrested; Pulled over by police; Get DUI; Go to jail; Spend night in jail; Go to TDC	Legal cost
Crash; Wreck; Have an accident; Run off road	Wreck
Kill someone; Hit someone; Hit another car and kill someone; Could hurt someone	Hurt/kill other
Death; Die; Kill self	Hurt/kills self
Set a bad example; Rude to friends	Social cost
Hurt family; Wife gets mad; Get into trouble with family; Family will be upset	Family cost
Lose job; Lost employment	Miss responsibility

Participant Generated Benefits	Thematic Grouping
Make it home; Get home safe	Get home safe
Get car home; Don't have to go get car; Wouldn't leave car at bar;	Have car
Make it to work; Get to work on time; Wont be late for work	Make it to work
No DWI; Avoid jail time; Didn't get caught; No ticket; Don't bother friend	No legal cost
Relax with friends; Go home to girlfriend; No mad girl friend	Social good
Didn't hit anybody; Wouldn't kill anybody;	No one gets hurt
Get to bed sooner; Sleep in own bed; Don't have to wake up early; Catch a little rest	Sleep at home

APPENDIX C

Appendix C. Participant Generated Costs and Benefits and their Corresponding Thematic Grouping for Robbery

Participant Generated Consequences	*Thematic Grouping*
Go to jail; Go to prison; Arrested; Get caught go to jail; Jammed up; Get caught by police	Legal cost
Get shot; Clerk has weapon; End up getting killed; Get shot and killed; Get killed; Shot by clerk	Get shot/hut/killed
Kill clerk; Someone could get killed; Fight with clerk; Kill someone; Shoot someone	Hurt/kill other
Be despised by friends; Friends turn their back on you	Social cost
Lose family; Lose wife; Lose contact with loved ones; Lose family respect; Bring disgrace to family	Family cost
Lose job; Never get a job	Professional cost

Participant Generated Benefits	*Thematic Grouping*
Have money; You get money; Make money; Money for car	Get money
Stay out of jail; Get away with it; Don't get caught	Get away with it
Get a reputation	Social good
Feel like a PIMP; Feel good	Feel good about self
Get a rush	Fun/thrilling

APPENDIX D

Appendix D. Participant Generated Costs and Benefits and their Corresponding Thematic Grouping for Fighting

Participant Generated Consequences	Thematic Grouping
Go to jail; Get arrested; Police get involved; Assault case; Get new charges	Legal cost
Get beat up; Kills me; Shot; Get whooped; Lose fight; Get knocked out; Get hurt; Death	Lose fight/get hurt
Kill the guy; Hurt the guy; Beat him up; Guy goes to hospital; Seriously hurt him	Hurt other
Sued for harassment; Children looking; Be ashamed	Social cost
Make family sad	Family cost

Participant Generated Benefits	Thematic Grouping
I beat him up; Whoop him	Win fight
Teach him a lesson	Teach the guy a lesson
Relieve stress; Get pay back; Release anger; Establish dominance; Get respect; Get point across; Put guy in his place	Feel good about self/get respect
Get money; Get money to fix car; Get money for damages; Insurance money	Get money
Defend self, Self-defense, Hits me first	Defended self
Avoid trouble, Do not go to jail; No police	No legal

APPENDIX E

Appendix E. Cuts for Ordered Logistic Models

	Coefficient	Standard Error	Confidence Interval
Driving while Intoxicated			
Students			
Cut 1	3.85	2.39	0.83 - 8.54
Cut 2	5.68	2.44	0.90 - 10.47
Cut 3	6.38	2.46	1.55 - 11.22
Cut 4	9.46	2.59	4.37 - 14.56
Offenders			
Cut 1	-0.10	0.93	-1.92 - 1.72
Cut 2	1.18	0.93	-0.64 - 3.01
Cut 3	2.07	0.94	0.23 - 3.92
Cut 4	3.70	0.96	1.81 - 5.58
Getting Into a Fight			
Students			
Cut 1	-4.47	2.26	-9.62 - 0.67
Cut 2	-2.16	2.55	-7.16 - 2.83
Cut 3	-0.59	2.53	-5.56 - 4.37
Cut 4	0.74	2.53	-4.23 - 5.71
Offenders			
Cut 1	-1.83	1.12	-4.03 – 0.37
Cut 2	-.066	1.10	-2.83 - 1.51
Cut 3	0.41	1.10	-1.74 - 2.58
Cut 4	1.78	1.11	-0.40 - 3.96

VITA

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EDUCATION

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Niebuhr, N., & Orrick, E. A. (2018). Impact of employment satisfaction and stress on time to recidivism. *Corrections Policy, Practice & Research,* 1-18.

Bouffard, J. A., **Niebuhr, N.,** & Exum, M. L. (2017). Examining specific deterrence effects on DWI among serious offenders. *Crime & Delinquency, 63(14), 1923-1945.*

In Preparation

Bouffard, J.A**, & Niebuhr, N**. Individual-Level Predictors of Conformity and Desistance among Known Offenders

Bouffard, L.A., Muftic, L.R., Boffard, J.A**., Niebuhr, N**. Gendered predictors of motivations for aggression

Niebuhr, N., Miller, H.A., & Bouffard, J.A., The relationship between sexual victimization and women's sexual coercion

BOOK CHAPTERS

Published

Bouffard, J.A., & **Niebuhr, N**. (2017). The Use of Experimental Designs in the Study of Offender Decision Making. Chapter to appear in *The Handbook on Offender Decision Making,* edited by W. Bernasco, H. Elffers, & J-L. van Gelder. Oxford University Press.

GOVERNMENT/TECHNICAL REPORTS

Bouffard, J.A., & **Niebuhr, N.** (2015). Montgomery County, Texas P.O.W.E.R. Recovery Court Program: Process and Outcome Evaluation Final Report. Sam Houston State University, Huntsville TX.

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Niebuhr, N., Miller, H.A. & Bouffard, J.A (2017) Examining the Relationship between Protective Factors and Female Sexually Coercive Behaviors at Annual meeting of Academy of Criminal Justice Sciences in Philadelphia, PA.

Niebuhr, N., Muftic, L.R. & Bouffard, J.A. (2017) Pimps, Prostitutes & Specialists: An Analysis of Criminal Diversity Among those Involved with Prostitution. Presented at annual meeting of Academy of Criminal Justice Sciences in Kansas City, MO.

Critic: **Niebuhr, N**. (2017) Author Meets Critic: Mexico's Illicit Drug Networks and the State Reaction, Georgetown University Press. Author: Jones, N. Moderator: Roth, M.P. Annual meeting of Academy of Criminal Justice Sciences in Kansas City, MO.

Niebuhr, N., & Bouffard, J.A. (2016). Love and Work: Attachment and Commitment to Romantic Partners and Legitimate Employment as Constraints against Two forms of Violent Crime. Presented at annual meeting of The American Society of Criminology, New Orleans LA.

Niebuhr, N., & Orrick, E. A. (2016). Impact of Employment Satisfaction and Stress on Recidivism. Presented at annual meeting of Academy of Criminal Justice Sciences. Denver, CO.

Niebuhr, N., Bouffard, L.A., Muftic, L.R., & Bouffard, J.A. (2015). Janie's Got a Gun: Gendered Predictors of Motivations for Aggression. Presented at annual meeting of The American Society of Criminology, Washington D.C.

Niebuhr, N. & Bouffard, J.A. (2015). An Evaluation of a Texas Juvenile Drug Court. Presented at annual meeting of Academy of Criminal Justice Sciences, Orlando, FL.

Niebuhr, N. & Bouffard, J.A. (2014). Preliminary Evaluation of a Texas Mental Health Court. Presented at annual meeting of Academy of Criminal Justice Sciences, Philadelphia, PA.

Niebuhr, N. & Bakken, N. W. (2013). Desistence among Reentering Offenders. Presented at National Conference on Undergraduate Research, La Crosse, WI.

SERVICE

Professional Service

2016   Panel Chair. Examining Theoretical Propositions for Offending Career Dimensions. The American Society of Criminology Annual Conference, New Orleans, LA.

University

2015 - 2018   Walk a Mile in Her Shoes Committee Member

Department

2013-present   Graduate Student Organization Member

2014-present   Peer Mentorship Program- Mentor

Manuscript Reviewer

Crime & Delinquency

Corrections: Policy, Practice and Research

Journal of Criminal Justice Education

PROFESSIONAL DEVELOPMENT

2015   Sam Houston State University: Blaise-CAPI (Summer)

2015   Sam Houston State University: Interviewing Techniques of Special Populations (Summer)

2016   Teaching Online with Blackboard Course

2017   TACS Workshop "Effective Strategies for Evaluating Student Writing"

2017   Sam Houston State University Teaching & Learning Conference

TEACHING AND RELATED EXPERIENCE

Undergraduate Courses

Department of Criminology and Criminal Justice, Sam Houston State University
    Introduction to Methods of Research (Writing Enhanced). Fall, 2018.

Department of Criminology and Criminal Justice, Sam Houston State University
    Victimology. Planned for Spring, 2019.

AWARDS

Rolando V. del Carmen Student Endowed Criminal Justice Scholarship, College of Criminal Justice, Sam Houston State University (2018)

O.B. Ellis-J. Philip Gibbs Memorial Scholarship (2017)

Kelly Cheeseman Student Paper Travel Award. Paper Title: Impact of Employment Satisfaction and Stress on Recidivism. Academy of Criminal Justice Sciences (2016)

Graduate Research Summer Fellowship, College of Criminal Justice, Sam Houston State University (2016, 2017)

PROFESSIONAL MEMBERSHIPS

American Society of Criminology

> Division: Developmental and Life-Course Criminology, and Corrections & Sentencing

Academy of Criminal Justice Sciences

> Corrections Section

INTERNSHIPS

Spring 2013 — **Intern, ATTIC Correctional Services**, La Crosse, WI

Summer 2012 — **Legal Intern, Wisconsin State Public Defenders Office**, La Crosse, WI