

---


Electronic Theses and Dissertations, 2004-2019

---

2014

## Threat Communication As it Relates to Perception of Victimization: A Study of Awareness of Concealed Weapon Permit Issuance

James Lickteig  
*University of Central Florida*

 Part of the [Criminology and Criminal Justice Commons](#), and the [Public Affairs, Public Policy and Public Administration Commons](#)

Find similar works at: <https://stars.library.ucf.edu/etd>  
University of Central Florida Libraries <http://library.ucf.edu>

This Doctoral Dissertation (Open Access) is brought to you for free and open access by STARS. It has been accepted for inclusion in Electronic Theses and Dissertations, 2004-2019 by an authorized administrator of STARS. For more information, please contact [STARS@ucf.edu](mailto:STARS@ucf.edu).

---

### STARS Citation

Lickteig, James, "Threat Communication As it Relates to Perception of Victimization: A Study of Awareness of Concealed Weapon Permit Issuance" (2014). *Electronic Theses and Dissertations, 2004-2019*. 4855.

<https://stars.library.ucf.edu/etd/4855>

THREAT COMMUNICATION AS IT RELATES TO PERCEPTION OF  
VICTIMIZATION: A STUDY OF AWARENESS OF CONCEALED WEAPON PERMIT  
ISSUANCE

by

JAMES LICKTEIG  
B.S. Florida State University, 2000  
M.S. Florida State University, 2002

A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the college of Health and Public Affairs  
at the University of Central Florida  
Orlando, Florida

Fall Term  
2014

Major Professor: R. Cory Watkins

## **ABSTRACT**

Concealed weapon permit issuance is one of the most contentious topics debated in modern politics today. The primary point of disagreement within this debate hinges on whether these permits serve to increase violence by those who possess them, or whether they decrease crime through the deterrent effect of their presence in society. Using responses of residents of a large southeast correctional facility this study analyzed the reported inclination of criminals to commit direct contact crimes under several specific scenarios, based on their exposure to various levels of information relating to issuance of concealed weapon permits. By comparing the responses across groups this research sought to determine whether an individual deterrent effect exists based on available knowledge of issuance.

The results suggest that, overall, while no statistically significant difference was noted between the groups there was a trend in the means of those groups that had varying levels of knowledge of concealed weapon permits to report a greater perception of the threat involved in committing crimes under the scenarios presented than those with no such knowledge. This

indicates that there may be, to some degree, a deterrent effect found in information relating to such permit issuance.

## **ACKNOWLEDGMENTS**

There are several individuals who are deserving of recognition for their contributions to this research. First and foremost I wish to thank my dissertation committee, Dr. Cory Watkins, Dr. Jeffrey Rosky, Dr. Mark Winton, and Dr. James Beckman. I especially wish to express my sincerest gratitude for my committee chair, Dr. Cory Watkins. The amount of time he has devoted to providing counsel and invaluable insight for my research cannot be overstated. His insightful guidance made this possible.

I would like to extend my gratitude to the staff of the Orange County Jail who provided time and access for this research to be conducted. Their assistance in providing access to the respondents for this study was instrumental.

Finally, I wish to specifically thank Margaret Mlachak and everyone else in the office for the Doctoral Program in Public Affairs. Their assistance in navigating the labyrinth of regulations and requirements necessary for completion of this program were of monumental benefit to myself, and a multitude of others, within the department.

## TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGMENTS.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vii
CHAPTER 1: INTRODUCTION.....	1
Who Has Concealed Weapon Permits .....	3
History of Concealed Weapon Permits .....	4
Concealed Weapon Permits: The Modern Debate .....	6
Concealed Weapons Permits: Do They Deter Crime? .....	15
Threat Communication and its Link to Deterrence Theory .....	16
CHAPTER 2: LITERATURE REVIEW.....	20
Threat Communication and Criminal Inclination .....	35
The Parallel Response Model.....	35
Protection Motivation model.....	36
Substitution of Media Message for Personal Experience....	37
Worker Responses to Safety Programs.....	39
When the Level of Physical Consequences Increases, so Does the Level of Persuasion.....	39
Use of Public Service Announcements.....	40
Purposes of Research .....	44
CHAPTER 3: METHODOLOGY.....	48
Research Questions .....	48
Use of Research and Potential Benefits .....	51
Sample Design .....	53
Instrumentation .....	57
Variables and Measurement .....	58
Dependent Variables.....	58
Independent Variables—Demographics.....	64
Independent Variables—Knowledge Level.....	66
Analytical Techniques .....	67
Research Design .....	68
Human Subjects .....	71
Support of Facility .....	72
CHAPTER 4: DATA ANALYSIS.....	73
Statistical Analysis .....	73
Correlations.....	76
Independent Variable Analysis.....	77

Dependent Variable Analysis.....	89
CHAPTER 5: DISCUSSIONS AND CONCLUSIONS.....	116
Relationship to Deterrence Theory.....	118
Policy Implications.....	124
Limitations of Research.....	127
Conclusions and Future Research.....	136
APPENDIX A: TABLES.....	147
APPENDIX B: IRB LETTER.....	160
REFERENCES.....	161

## LIST OF TABLES

Table 1 Group Frequencies.....	78
Table 2 Demographic Variables.....	79
Table 3 Education Recoded.....	81
Table 4 Age Recoded.....	82
Table 5 Race Recoded.....	83
Table 6 Violent Crime History and Knowledge About Firearm Possession.....	85
Table 7 Gender History.....	88
Table 8 Purse Snatchings Response Frequencies.....	91
Table 9 Purse Snatchings Group Means.....	92
Table 10 Estimates of Fixed Effects for Dependent Variable Old_Lady.....	94
Table 11 Home Invasion Response Frequencies.....	95
Table 12 Home Invasion Group Means.....	97
Table 13 Estimates of Fixed Effects for Dependent Variable Home_Invasion.....	98
Table 14 Mugging Response Frequencies.....	99
Table 15 Mugging Group Means.....	101
Table 16 Estimates of Fixed Effects for Dependent Variable ATM_Robbery.....	102



Table 17	Robbery Response Frequencies.....	104
Table 18	Robbery Group Means.....	105
Table 19	Estimates of Fixed Effects for Dependent Variable Convenience_Store_Robbery.....	106
Table 20	Car Theft Response Frequencies.....	108
Table 21	Car Theft Group Means.....	109
Table 22	Estimates of Fixed Effects for Dependent Variable Car_Theft.....	111
Table 23	Rape Response Frequencies.....	112
Table 24	Rape Group Means.....	113
Table 25	Estimates of Fixed Effects for Dependent Variable Rape .....	115
Table 26	Research Questions.....	147
Table 27	List of Dependent Variables and Measurement Coding..	148
Table 28	List of Independent Variables and Measurement Coding (Demographics).....	151
Table 29	List of Independent Variables and Measurement Coding (History).....	152
Table 30	Test of Homogeneity of Variances.....	153
Table 31	Revised survey questions.....	154

## CHAPTER 1: INTRODUCTION

The prevalence of firearms in American society and culture is an intensely debated issue with many facets. On one hand, a firearm is a dangerous weapon capable of dealing great harm both intentionally and accidentally. On the other hand it is a constitutional right for individuals to possess such for sporting purposes, collecting and self-defense. This right was recently further solidified in both the *District of Columbia v. Heller*, 554 US 570 (2008) as well as *McDonald v. City of Chicago*, 561 US 3025 (2010), which asserted that it is a personal right of qualified individuals to possess firearms and limited the restriction of that right (Cook, 2013). However, as with most rights there are limitations to their absolute and unlimited exercise. For example, freedom of speech is a right that is limited to disallow speech that could lead to the harm of others, such as yelling "fire" in a crowded theatre. The right to keep and bear arms is similarly limited to exclude certain areas and limit possession to those of a required age who are generally of sound mind without disqualifying criminal histories. Additionally, for most civilian applications,

carrying a firearm on one's person often requires some form of licensing, such as a Concealed Weapon Permit (CWP).

The issuance of concealed weapon permits to private citizens for personal protection is a controversial topic. The argument has been made that the issuance of CWPs is a reaffirmation of the concept that all citizens have an inherent right to self-defense against criminal attacks. Based on the idea that a criminal action can occur in virtually any place at any time, when police, or other form of provided security, may not be present the common debate contends that "the last thing government ought to be doing is stripping citizens of the most effective means of defending themselves" (Snyder, 1997, p. 1).

In fact, it has been noted that criminals tend to specifically choose the time and location for their endeavors when and where police are not present. More precisely, they choose their victims such that they will have the perceived advantage in number, perceived strength, weapons, etc. It has also been noted that even in cases where the victim has enough forewarning of the crime to have time to call the police, officers can arrive on the scene within 5 minutes only approximately 28% of the time (Snyder, 1997). It is for these reasons that personal possession of a firearm for self-defense is noted to be a more effective method of criminal response since it tends to negate the advantages that criminals will

naturally have during the commission of their acts (Ghatak, 2001; Sherman et al., 1998).

For these reasons, as well as recent political apprehension and personal fears, there has been a surge in the legal purchase of firearms as well as applications for concealed weapons. This surge has been so great that the state of Florida alone has been inundated with enough applications to force the state to budget an additional \$3.9 million to hire temporary staff to help process the paperwork (Bousquet, 2009).

#### Who Has Concealed Weapon Permits

Data indicates that those who have concealed weapon permits are those who generally feel less confident about the ability of police to provide adequate protection (Kleck, 1997) and, thus, feel the need to provide personal protection. Oddly enough, it was noted that those who live in areas of high crime who have been recently burglarized or who feel less safe in their neighborhood are less likely to own a firearm, even though those who own one report feeling safer (Kleck, 1997). It has also been reported that permits are primarily issued to white, middle-aged suburban and rural males who are generally at the lowest risk for victimization (Cook, 2013).

The demographic regions associated with abnormally higher or lower rates of CWP holders are quite distinct. Higher rates

of permit holders tend to be located in areas with lower crime rates, which tend to be regions of lower population density, specifically rural environments, while urban regions with higher population densities and higher crime rates tend to have lower rates of CWP ownership (Vieira, 2013). This distribution is of specific importance as it is very common to relate regions of concealed weapon permit issuance to local crime rates.

### History of Concealed Weapon Permits

In order to fully comprehend the current debate regarding concealed weapon permits one must first have a firm understanding of the history. The primary legislation that led to the modern concept of a concealed weapon permitting system was the Sullivan Law enacted in New York in 1911. This law, which was modeled after firearm laws in Europe at the time, prohibited the ownership of handguns without a permit issued by the local police. One of the primary purposes for such laws was to restrict the ownership of firearms by those who were considered politically unpopular, such as immigrants, those of the Jewish faith, labor agitators, African Americans, and political dissidents (Snyder, 1997). However, it was not until much later, in the 1920s and 1930s, that concealed carry laws were enacted by many states (Vieira, 2013).

As a reaction to the Sullivan Law the National Rifle Association supported a modification of this law with the Uniform Firearm Act in 1930, which was also known as the Uniform Revolver Act (Snyder, 1997). Many states began adopting this policy during the 1920s; however, some states, such as Vermont, chose not to do so and, to this day, have "no laws prohibiting the carrying of concealed handguns as long as carriers have no intention of unjustly harming another person" (Vieira, 2013, p. 12).

The Uniform Firearm Act altered the basic concept of the Sullivan Law to make it illegal to carry a concealed weapon without a license. The new law required permitting for the carrying of a concealed weapon as opposed to the purchase and ownership of firearms (Snyder, 1997). This new law granted the discretionary authority to issue permits to judges, police chiefs, and county sheriffs. However, while this law did provide minimum requirements, the final decision on whether a permit should be issued finally resided in the hands of those with permitting authority (Vieira, 2013). The general requirement noted as the basis for determining whether a permit should be granted was whether the person "had 'good moral character' and satisfied some needs-based requirement, such as having 'good cause,' or demonstrating a 'need' to carry a handgun" (Vieira, 2013, p. 4). This discretionary basis for the issuance of

permits, which is commonly argued to be discriminatory, politically based, or both, was a major factor in the movement towards the shall-issue model.

The shall-issue model, which many states have adopted, as opposed to the may-issue model, stipulates that if a person meets the minimum requirements to obtain a concealed weapons permit and provides the appropriate application and requisite paperwork, the permit cannot be denied to that individual. This method eliminates the prior issues of potential bias in the issuance of permits; however, it raises questions regarding the fitness of some of the applicants.

#### Concealed Weapon Permits: The Modern Debate

Many individuals believed that the presence of concealed weapon permit holders would become a danger to society, and they attempted to gather data to support this assumption. One of the primary arguments is that increasing the number of people with permits would lead to an increase in the number of people carrying firearms, which could cause an increase in firearm-related fatalities. It has been stated that there is a positive relationship between firearm ownership and homicide. It has been further noted that there is a lagged change in weapon ownership and changes in homicide rates indicating that firearm ownership increased prior to the homicide increases. However, it is

further noted that this could simply be explained by individuals arming themselves as a response to a perceived future increase in crime (Duggan, 2001).

Conversely, studies have shown that there is no statistically significant relationship between increased concealed weapon permit issuance and aggravated assault or homicide rates (Vieira, 2013). It has also been noted that the change in permits issued will be different than the change in percentage of those overall carrying, as many choose to carry without a permit; in fact, there may be no difference in the actual number of individuals carrying weapons. For example, "survey data from the 1994 NSPOF (National Survey of Private Ownership of Firearms) suggests that 7.5% of American adults carried a firearm on their person or in a motor vehicle" (Ludwig, 2000, p. 390). In other words "permit holders may be people who carried guns illegally before the law went into effect" (Snyder, 1997, p. 14). Additional research also indicated that at least 17 million American adults annually carry a firearm for personal protection (Kleck, 1997).

An additional argument against the issuance of CWPs lies in the belief that as criminals are made aware of the presence of armed citizens there will be a greater incentive for criminals to acquire weapons as well (Ghatak, 2001). This incentive could lead to a virtual arms race between law-abiding citizens and



criminals, each trying to outgun the other. However, it has been noted that overall gun ownership "did not increase significantly in the states that passed [carry concealed weapons] legislation relative to other states" (Duggan, 2001, p. 1106).

Another theory is that criminals would simply shift their criminal inclinations, either by region or type of crime. As noted by Bronars and Lott (1998), if one area indicates an increase in concealed weapon permit issuance criminals may simply shift the region of their activities to one in which there is not an increase in issuance, thus mitigating their perceived risk. It was also noted by Ayres and Donohue (2002) that in the states that had not adopted shall-issue laws there were higher robbery rates than those with these laws. This observation lends further credence to this theory under which crime overall would not decrease, merely migrate to a different region, thus increasing crime elsewhere.

It was also noted that property crimes increase after passage of shall-issue laws (Ayres & Donohue, 2002). In other studies a similar occurrence was noticed regarding mandatory inclusion of steering column locks on cars. In England, the new locks were placed only on newer cars, and there was a noted subsequent rise in vehicular theft of older vehicles, which had no such locks. In Germany, however, all cars, both new and old, were outfitted with the new devices and there was an overall

decline in all vehicular theft (Clarke, 2012). These data lend further credence to the theories of criminal displacement in search of easier targets, following the logistical expectation that criminals would wish to avoid direct interaction with a potential armed victim. However, one must take into account the differing motivations for the commission of different crime types. For example, the point was made that a rapist would not likely switch to property crimes due to the perception that rape had too much risk associated with its commission (Ayres & Donohue, 2002).

In fact, the "Florida Sheriff's Association made extensive efforts to document problems arising from their state's shall-issue law. However, they were surprised by the virtual absence of problems" (Mustard, 2003, p. 1392). As of 1995, when hundreds of thousands of people had acquired CWPs, there had been no case of a person with a CWP who had engaged in a criminal homicide (Polsby, 1995).

Another concern among law enforcement officers was the potential for additional risk officers might face if a greater percentage of the populace was armed. This fear was alleviated by the fact that among shall-issue states there have been no known cases of a concealed weapon permit holder using a weapon against an officer of the law (Mustard, 2001). In fact, it has been noted that the presence of concealed weapon permit holders

may help reduce the risk of officers being killed and “after enactment of the right-to-carry laws, states exhibit a reduced likelihood of having a felonious police death rate and slightly lower rates of police deaths” (Mustard, 2001, p. 635).

With this absence of evidence of misuse by those who legally carry a firearm, many of the individuals who studied this program have come to the belief that “law-abiding citizens who have no mental health histories, who pay fees and give authorities personal information, rarely use their weapons for inappropriate purposes” (Mustard, 2003, pp. 1392-1393).

It should, however, be additionally noted that there is difference in opinion on CWP issuance based upon a distinction in types of law enforcement officers. Officers who spend the majority of their time at the street level and who would, theoretically, feel the most threatened by citizens legally carrying weapons tend to show the most support for this program, whilst those in higher positions, who would be more insulated from direct interaction with the same citizens, tend to express greater opposition to CWP issuance (Mustard, 2001).

Recently, debates regarding the issuance of concealed weapon permits have emerged into the forefront of media discussion. Public cases such as *State of Florida v. George Zimmerman* (2013) and *State of Florida v. Michael David Dunn* (2014) have been highly publicized on a national scale and

demonstrate the arguments, both for and against, the issuance of permits. Both of these cases involved the deadly use of a firearm by a permit holder against an unarmed individual. In the Zimmerman case it was determined that he indeed acted in self-defense; however, Dunn was found guilty. While the specifics of these cases differ, they both created public outcry for changes to be made to the law regarding CWP's in the State of Florida.

A prime example of this debate as it related to legal statute changes in the state of Florida was centered on arguments concerning HB-503. In this instance, the Florida Chamber of Commerce and the National Rifle Association (NRA) were waging a political war against one another over the passing of this bill. HB-503, now Florida Statute 790.251, forbids any private business, with certain exceptions, from banning legally possessed firearms left in personal vehicles in companies' respective parking lots.

The Florida Chamber of Commerce supported the idea that the property rights of businesses extended to their parking lots and, thus, superseded the property rights of the employees and patrons with regard to their personal vehicles. The Chamber's position was that a business had the right to enforce its own private gun control policies in order to protect its employees and customers. In contrast, the NRA supported the bill (Hammer, 2008) stating, "Corporate giants have been trampling

constitutional rights. Some are even attempting to coerce and intimidate gun owners into giving up constitutional rights as a condition of employment" (National Rifle Association of America, Institute for Legislative Action, 2007). A primary point often used in arguments that favor this bill focuses on personal transportation. When people are not allowed to possess private means of protection upon arrival at a destination, it would effectively require that they be without that protection while traveling to and from that location. In this example, the quality of a CWP is significantly diminished, potentially reducing its intended deterrent effect.

Other examples of the controversy regarding the legal possession of concealed weapons are demonstrated in the arguments offered by the organization Students for Concealed Carry on Campus (SCCC). This group favors allowing those who have concealed weapon permits to legally carry concealed weapons on college campuses. Currently, many states have laws that completely prohibit the presence of firearms on college campuses even for those who possess concealed weapon permits, with the exception of police and security officials. The exception to this relatively common policy is Utah, which prohibits state institutions from enacting this type of ban (Harnisch, 2008). Legal proposals to change these laws are often quite

controversial and emotional in their arguments and often meet with strong opposition.

In the aftermath of such tragedies as the Virginia Tech massacre, the SCCC claims that if concealed weapon permit holders had been allowed to have their weapons on campus this catastrophe could have been minimized. Many have made the argument that "easing gun restrictions could enhance both individual and collective security on campus and may deter violence" (Harnisch, 2008, p. 1). It has been noted by the FBI that between 2000 and 2012 there have been 17 mass shootings that were stopped by resisting victims (Blair, Martaindale & Nichols, n.d.). The SCCC further maintains that by colleges and universities prohibiting legal possession of weapons on campus they have created a perfect target area for the criminally inclined. Additionally, it has been argued that "preventing these individuals from carrying a concealed weapon reduces their ability to protect themselves from would-be attackers once off campus" (Harnisch, 2008, p. 4). This current prohibitive policy has provided potential criminals the knowledge that potential victims in such locations will unlikely be armed (SCCC, n.d.).

CWPs, where allowed, provide for those who meet the criteria, generally a set age, mental stability, and lack of criminal history, to carry concealed weapons on their person for personal defense. There are additional limitations on the

locations and circumstances in which permit CWP holders may carry a weapon. The general prohibitions include while intoxicated, under the influence of medications or drugs, in bars or areas prohibited by other local, state, or federal laws such as in public schools, courthouses, or other government buildings (Vieira, 2013).

This program was established to allow law-abiding citizens the legal right to keep the means of protecting themselves on their person during normal daily activities. While many are troubled by the potential ramifications of allowing the civilian population to routinely carry firearms out of concern for the welfare of the general populace, it has been noted that "there is no a priori reason to believe that firearms should be any less useful to civilians, at least those properly trained to use them, than to police officers" (Polsby, 1995, p. 209). While the difference in the lack of training between civilians and police has been expressed as a cause for concern, only 30 people are killed annually in cases of mistaken identity for a criminal while police have killed over 330 innocent people per year (Lott, 2010). This statistic indicates that civilian possession of CWPs could, potentially, be a safer and cheaper alternative to an increased policing force. It has also been noted that CWP holders have relatively low arrest rates, indicating a low risk of misusing firearms (Cook, 2013).

According to the Concealed Weapon or Firearm License Summary Report issued by the Florida Department of Agriculture and Consumer Services Division of Licensing, as of June 31, 2014, there have been 2,644,658 concealed weapon permits issued in the state of Florida (*Concealed*, n.d.). There are currently 1,269,021 active general CWPs, with an additional 8614 for retired Law Enforcement Officers, 606 for Judges and 5 for Consular Security Officials (*Number*, n.d.).

#### Concealed Weapons Permits: Do They Deter Crime?

Deterrence theory rests at the heart of the gun control and concealed weapons debate (Kleck, 1988; Lott & Mustard, 1997). This theory suggests that the presence of concealed weapon permits in the average population will act to reduce crime by increasing a criminal's fear of repercussion, as well as perception of the level of risk, resulting from the commission of a crime (Lott & Mustard, 1997). Unfortunately, the answer to this question varies, depending on the research cited. Some "analysis suggests that right-to-carry laws have statistically significant deterrent effects on crimes ... but it also indicates that in some states the effect of adopting a right-to-carry law may be an increase in crimes in some categories" (Plassmann & Tideman, 2001, pp. 773-774).



However, to increase a criminal's fear of repercussion, the criminal must be aware of the presence of CWPs and the correlating potential presence of armed victims. The more education regarding potential armed victims that criminals have, the greater their awareness will be. As awareness increases, the fear of encountering such a situation might be expected to increase as well (Wright & Rossi, 2008).

Research has demonstrated a link between education and criminal activity, which indicates that as education increases, inclination to commit crime decreases (Lochner & Moretti, 2004). This study continues to explore this relationship by analyzing how newly acquired knowledge of a potentially threatening nature affects the criminal decision-making process. This research effort analyzes a particular aspect of education, specifically learning about whether the prevalence of CWPs and the knowledge of their existence and frequency affect the decision to commit direct contact crimes among the criminally inclined.

#### Threat Communication and its Link to Deterrence Theory

An important aspect of deterrence theory is the communication of a specific deterrent-inducing fact. The expression of information designed to instigate the deterrent action is more commonly known as threat communication. For example, neighborhood watch signs are designed to deter

criminals from operating in specific areas by educating the potential criminals about the presence of a neighborhood watch. This advertisement is a method of communication regarding the increased threat of observation and possibly arrest to potential criminals. If neighborhood watch signs are not present, then a criminal may not know that there is an active neighborhood watch in the area. Following this logic, if the criminal is unaware of the presence of the neighborhood watch, then the watch does not communicate a threat and, consequently, cannot have the expected deterrent effect.

It is hypothesized in this study that as criminals' level of knowledge concerning the current issuance of CWPs increases, their perception of threat and subsequently their inclination to commit crimes decreases. In other words, as a criminal becomes aware of the likelihood of encountering a legally armed potential victim, the perception of the potential direct physical threat, too, would increase, and, thus, the criminal would likely be less inclined to choose to commit the crimes. Therefore, a study analyzing the educational process of a criminal gaining such awareness and the potential resulting change in inclination to commit crimes would be a valuable addition to the current research.

Studies have been conducted relating to how a specific event, such as increasing the number of CWPs, affects crime

rates (Lott & Mustard, 1997). Additionally, research has analyzed how criminals might think about the possibility of encountering an armed potential victim (Wright & Rossi, 2008). Consequently, the argument is made that increasing the communication of the threats of committing crimes would likely increase the perception of risk as "new information may become an ingredient in rational calculations of self-interest" (Weiss & Tschirhart, 1994, p. 88).

It is the aforementioned linkage between criminals' recently acquired awareness of the issuance of concealed weapon permits and their subsequent inclination to commit crimes that focused this research effort. By providing information to criminals regarding CWP issuance and evaluating their responses to scenario-formulated questions designed to measure criminal threat perception, one can illuminate an important piece of knowledge that has not recently been examined in the literature. That is, how much does the communication of threat knowledge influence criminal perceptions that could result in the deterrence of criminals from committing a crime when comparing the responses to those of a control group, who have not received the same information?

Extant research has analyzed the direct effects of concealed weapon issuance on crime rates (Black & Nagin, 1998; Bronars & Lott, 1998; Dezhbakhsh & Rubin, 1998; Lott & Mustard,

1997). However, research on *why* this occurs is much more limited. Specifically, this research explores the "why" question by examining how the educational process known as "threat communication" influences the criminal thought process.

Deterrence is often studied only on an aggregate level (Geerken & Gove, 1975) using longitudinal and cross-sectional methods (Lott & Mustard, 1997). This study is designed to benefit the theoretical research by expanding upon deterrence theory by using a personal-contact experimental approach methodology that is more commonly applied in threat communication studies. By analyzing the convergence of threat communication and deterrence theory, one can hope to gain a greater overall understanding of the functional usage of these theories by observing their integration.

## CHAPTER 2: LITERATURE REVIEW

While there are a number of reasons for private ownership of firearms (Kleck & Hogan, 1999, Lizotte & Bordua, 1980), the possession of such weapons for defensive purposes and its subsequent effect on crime is of considerable relevance to this research study and the research community in general. Studies often point to the 1950s during which reported gun ownership increased while at the same time crime decreased (Kleck, 1979). These types of studies began to suggest that there may be a relationship between legal, private firearm ownership and a lowered criminal inclination to commit crime.

Much of the research along these lines focused on when Florida began the shall-issue policy with CWPs and comparing the homicide rates between 1987 and 1992, noting a 21% decrease (McDowall, Loftin, & Wiersema, 1995). However, there are four primary problems with research of this type. First is the absence of FBI Uniform Crime Report data from 1988. Therefore, studies either discount this year or cite estimates. Second is the limited time scope of these studies, which increases the chance of unobserved external factors that could be an unintentional effect during that short time. Third, as the

entire state is viewed as a whole and firearm and non-firearm homicide are grouped together the differences in rural and urban crime rates as well as different types of homicide could mask meaningful results. Finally, in 1991 Florida began a policy requiring background checks for firearm purchases as well as instituting a waiting period for handguns for those without CWPs, which could also have had an impact on homicides (McDowall et al., 1995). It must be noted, however, that "it appears that not a single one of the homicides studied by McDowall, Loftin, and Wiersema was committed by someone who had obtained concealed carry permits under liberalized laws but would have been denied such permits under prior law" (Polsby, 1995, p. 214).

Survey data suggest that, nationally, in 1983 there were approximately "64000 rapes, robberies and assaults involving a victim using a gun for self defense" (Kleck, 1988, p. 9). Additionally, "the best course of action for most rape victims is to resist, preferably with a weapon" (Kleck & Sayles, 1990, p. 161), which provides justification for protection ownership, especially for women. These data support the premise that a criminal is likely to be deterred from following through with the commission of a crime once the criminal gains the knowledge that potential victims possess weapons. Therefore, it can be surmised that criminals learning about the possibility of

encountering armed potential victims may serve to decrease criminal activity.

Research suggests that private ownership of firearms has led to a decrease in the completion of criminal acts (Lott, 1998). Statistically, those who use a firearm in their resistance of a criminal act are more successful in stopping the crime and avoiding injury than those who resist while using another type of weapon (Sherman, et.al. 1998).

However, the number of annual defensive uses of firearms is quite varied, depending on the source cited. As Ghatak (2001) noted, annual figures for the use of guns in self-defense can vary over a wide range, from 80,000 (Cook, 1991) to over a million (Kleck & Gertz, 1995). Kleck and Gertz (1995) added that "as many as 400,000 people each year used guns in situations where the defenders claim that they 'almost certainly' saved a life by doing so" based on 15.7% of respondents in their survey (p. 180). It must be noted that only 24% of respondents who reported Defensive Gun Use (DGU) in the last year fired it, and only 16% actually aimed at the attacker. The remainder of respondents simply informed the attacker of their possession of a firearm, either through verbal or visual means.

Of course there are inherent issues with self-reported surveys of this nature. These types of surveys often have issues with coding of the data, misunderstanding of the questions, and

difficulty remembering the events in question (National Research Council, 2004). Telescoping is of particular concern with surveys of this nature as the respondent may be asked to report only on events within the last year and report on an incident which occurred over a year ago. "Surveys which include questions about DGUs are trying to estimate a rare event, in which even a small false-positive rate will lead to a relatively large overestimate" (Cook, Ludwig & Hemenway, 1997). An additional concern with surveys of this nature are respondents exaggerating the number or nature of events (Smith, 1997). However, Kleck and Gertz (1995) contend that the opposite is more likely true as the defensive use of the gun may entail an illegal action, such as the illicit possession of the weapon, which a respondent would not wish to admit. Other concerns lie with the statistics regarding the number of female responses indicating the use of a firearm defensively. It has been noted that approximately 14% of justifiable homicides are committed by women. "If women are 21% of gun owners and approximately 14% of those who lawfully kill someone with a gun, it seems improbable that they would make up 41-46% of all DGUs" (Smith, 1997).

The key focus in the present study, which differentiates it from prior research, is the direct communication of the threat of armed response to the offender. Since the concept of deterrence hinges on the making of a rational decision,



increased communication of a threat gives more information upon which to base a rational decision. More specifically, if this threat to criminals committing crimes is properly communicated, it could increase deterrence and, subsequently, possibly decrease criminals' desire to commit crimes.

This research is grounded in deterrence theory and how it pertains to the knowledge of threat by would-be offenders. This theory states that crime is a rational choice based on a person's evaluation of risk and reward (Cook, 1980). "Crime occurs when the expected rewards outweigh the anticipated risks, so increasing the risks, at least theoretically, will prevent most crimes in most circumstances" (Jacobs, 2010 p. 417). If a criminal sees a greater possible reward for committing a crime than detriment to being caught, then he or she will be more inclined to commit the crime. However, if the risk is assessed to be greater than the potential reward, then the criminal would be less inclined to commit the crime.

In this way the commission of criminal acts can be explained as a basic decision-making function using simple concepts of economic analysis (Levin & Milgrom, 2004). However, one must understand that the potential reward for the commission of a crime has a different value or utility for different individuals (Scott, 2000). A common analogy would be the usefulness of a glass of water to one person who is drowning

versus another person dying of thirst in the desert. To the former a glass of water would be of no use, whereas to the latter it is of immense value. Following this logic a starving individual would place a far greater value on the potential profit to be made from robbery than one in less dire straits. This increased value would thus cause the individual to be willing to accept greater risk for the same reward.

Another point to be made relating to rational choice theories would be the recognition that people are equally motivated by both theory and reality. Thus the threat of repercussions or the promise of reward motivates as much as the actual punishment or reward (Scott, 2000). This point was made by Snyder (1997, p. 14) in his statement:

It may be that, if they had known the truth about how few permit holders there were (generally, they do not exceed 5 percent of the state's population), crime rates would not have fallen as far as Lott and Mustard conclude that they did.

In this instance it was merely the belief in the threat which supposedly had its effect on crime as opposed to the actual reality of encountering armed victims.

A common belief about deterrence theory, often espoused on local broadcasts and through various other anecdotal sources, relates to the placement of additional uniformed police officers in higher crime areas. The mere visible presence of these uniformed officers is intended to increase deterrence, thus

reducing the likelihood of criminals committing crimes. Some empirical research, such as the oft-cited Kansas City Preventive Patrol Experiment (Kelling, Pate, Dieckman, & Brown, 1974), has noted otherwise. The research suggests that this is a contested issue. Other studies tend to disagree with these findings. The argument is that this type of research tends to "fail to take into account the obvious fact that cities hire more officers because their crime rates are high; in other words, the causal direction of the relationship may be reversed" (Wilson & Boland, 1978, p. 370). It has also been hypothesized that "the police may affect crime rates less by how many of them are on patrol than by what they do there" (Wilson & Boland, 1978, p. 370). When the police employ a more directed patrol behavior it can have a beneficial effect on crime rates.

Some studies seem to uphold the common belief that visible patrols do communicate a viable threat to criminal activity and have a viable deterrent effect. "Proactive and aggressive policing has strong effects on robbery arrest certainty, which in turn has an apparent deterrent effect on robbery rate" (Sampson & Cohen, 1988, p. 176). Other studies have also noted a decreased response time and increased capture rate, which should increase the deterrent effect when using a more strategic deployment of patrols (Coupe & Blake, 2005).

It has been stated that criminals often do not have high regard for potential legal consequences (Wright, Caspi, Moffitt, & Paternoster, 2004); perhaps they may be more greatly swayed to not commit crimes by considerations that are beyond the standard judicial system. Studies have shown that "offending decisions ... were influenced more by nonlegal considerations" than they were by standard police practices (Paternoster, 1989, p. 38). A "nonlegal consideration" could very well be something such as the likelihood of encountering an armed and resisting potential victim, i.e., one carrying a concealed weapon legally.

As noted by Wright and Rossi (2008), the concept of deterrence theory relating to firearm ownership has come into vogue, claiming that the potential victim's possession of firearms can actually deter a criminal from committing a crime. This concept differs from the visible presence of security measures such as private security, police presence, or open carry of firearms as these methods focus on a specific area, while concealed carry creates a greater public good because it eliminates the ability of a predator to determine who will have the ability to resist an attack (Polsby, 1995). Most studies of deterrence theory in the area of gun control or CWP issuance, however, are done with simple comparisons of firearm availability, or some variable designed to encompass this

concept, such as gun control laws and crime rates for a specific time frame.

Lott and Mustard (1997) developed one of the most popular, and controversial, studies delving into the link between concealed weapon issuance and criminal deterrence. This study applied a longitudinal method of examining data for U.S. counties from 1977 to 1992. The research suggested that the increased issuance of CWPs acted as a deterrent for violent crime. Additionally, a projected cost-benefit analysis was done to determine the potential savings if other states were to have adopted similar laws regarding concealed carry. The results indicated that if all states in 1992 had implemented similar laws, 1,592 fewer murders and 4,811 fewer rapes would have been committed, which would have theoretically resulted in a savings of \$8.3 billion, based on National Institute of Justice calculations of the cost of crimes (Lott & Mustard, 1997). In related analyses it was determined that between just Florida and Texas the passage of shall-issue laws reduced the annual cost of crime by over \$3 billion (Ayres & Donohue, 2002).

However, much of the data derived from the Lott and Mustard study (1997) has been questioned. One of the primary concerns with this study is that county level data were used in the study, while the intervention, the passage of shall-issue laws, is a state-based issue. County-level arrest information varies

widely, and in some small counties with normally low crime rates even a minor numerical change in arrests would be a large percentage change. Additionally many counties were dropped from the study due to lack of available data. These factors could have had a strong influence on the overall analysis (Ayres & Donohue, 2002).

Black and Nagin (1998) noted that removing Florida from the data set used by Lott and Mustard (1997) would eliminate the significance of the findings. Snyder (1997) reported that as Nagin argued at the National Press Club Forum, certain Florida-specific events that occurred prior to the study, such as the Mariel boat-lift and the dramatic increase of drug trafficking in South Florida around that time, led to a meteoric temporary increase in the crime rate. As local law enforcement began to bring crime rates resulting from these events under control, it reduced the crime rate dramatically. This natural spike, and its subsequent decrease, simply happened to coincide with the study, and these unique circumstances could potentially be the reason for Lott and Mustard's findings and not concealed carry laws as they had theorized (Snyder, 1997).

It was noted that there was a further variable observed during this time frame. Crack cocaine was emerging as a national problem, prevalent primarily in urban regions. It has been suggested that the states that tended to adopt shall-issue

permit laws were more likely to be "Republican, have high NRA membership, and have low crime rates" (Ayres & Donohue, 2002), which is generally not the typical demographic for crack cocaine use. Therefore, the differences in crime rates may be a purely demographic phenomenon based on the existence of a new drug. It was further noted by Black and Nagin (1998) that crime rates were on the decline during that time frame and continued to decline after the passage of shall-issue laws, which led to their belief that external factors, beyond concealed weapon permits, were in place and led to the reduction in the crime rates.

Lott (1998) rebutted these critics of his findings by providing additional data and confirmation by third parties who had examined his data as well as noting methodological flaws in Black and Nagin's (1998) criticisms. Specifically, Lott noted that excluding Florida would make only minor modifications to his findings but not significantly alter them. He additionally purported that the influence of the Mariel boat-lift on the Florida crime rate had subsided by the beginning of his study and, thus, had minimal impact on the findings (Snyder, 1997).

It was further noted by Mustard (in Donahue, 2003) that since their study "no empirical research has made a case for shall-issue laws increasing crime. Instead, the literature has disputed the magnitude of the decrease and whether the estimated

decreases are statistically significant" (p. 326). He additionally and unequivocally stated that even if one were to accept the strongest criticisms of their study there is still more evidence that shall-issue laws reduce crime rather than increase it.

These types of study methodologies are commonly used to show correlation between the presence of CWPs in an area and the crime rates. However, one additional method that may shed new light on criminal decision-making processes would be to place a greater focus on the inclinations of the individual criminal. This is the rationale for many studies using survey- and scenario-based research designs (Jacobs, 2010; Nagin & Paternoster, 1993; Wright & Rossi, 2008). If an increased knowledge of the process of criminal decision-making were gained, it would aid further research and greatly improve the ability of policymakers to understand how public information campaigns, as an educational process, could be used for the greatest benefit to reduce crime.

A study that focused more directly on criminal thought processes was performed by James Wright and Peter Rossi in 2008. This study explored "how and why criminals acquire, carry, and use firearms" (Wright & Rossi, 2008, p. 1) via a survey of criminals in 11 state prisons from 10 states. In this study, the researchers determined that most criminals think about the



possibility of armed resistance and often avoid crimes where there is the possibility of meeting with an armed potential victim. In fact, 57% of those surveyed were more concerned with encountering an armed victim than dealing with the police.

It was noted that two-fifths of the criminals who took part in the survey never thought about the possibility of being shot by an armed victim (Wright & Rossi, 2008). However, what is not examined here is the reason why these two-fifths never thought about the issue. As this is a large percentage of the offending population, a greater understanding of the thought process could likely be quite valuable. Is the lack of forethought due to a criminal indifference to the possibility or is it simply a function of the criminal's not possessing the knowledge that a potential victim might be armed? If the issue is that criminals are aware of the fact but simply disregard this knowledge, it would indicate a weakness in theories of deterrence. In this case, the criminals had the knowledge of potential armed victim response but chose to commit crimes nonetheless. This going forward of the commission of a crime would indicate that there is no forethought or rational choice occurring when the decision to commit crimes happens, which is the cornerstone of deterrence theory. If a criminal is aware of a deterring factor such as a potential armed victim and does not consider that information when making the determination to commit a crime, then no

deterrent would ever be of benefit to that person. Thus, in this instance, deterrence theory poses no specific deterrent effect.

Presumably, the greatest potential deterrent to criminal behavior would be the possibility of death occurring as a result of encountering an armed victim during the commission of a crime. Therefore, if the person considers that possibility and chooses to commit crime regardless of that risk, then the chance of any action or set of circumstances deterring the person from committing a crime is low. If this is true, then deterrence theory would not have any effect on these individuals and would be applicable only for 60% of those who are criminally inclined. However, if the issue is a lack of knowledge needed to make a proper decision regarding criminal action, then this research could indicate that increasing the criminal's level of knowledge of CWPs might decrease the criminal inclination for the two-fifths who were not previously deterred.

It was noted that the more knowledge that a criminal possessed about firearms, the greater the concern he or she had about encountering an armed potential victim. This would seem to indicate that threat communication has a direct linkage with deterrence.

Numbers from the Federal Bureau of Investigation (FBI) *Uniform Crime Report* indicate that there were 1,382,012 violent crimes nationwide in 2008 (2009). If it is indeed the case that

the lack of deterrence for the reported two-fifth of criminals (Wright & Rossi, 2008) was a result of lack of information, it could, potentially, mean that up to approximately 276,402 violent crimes could have potentially been deterred had proper threat communication means been implemented.

Additionally, using 1986 data from the Inter-university Consortium for Political and Social Research (ICPSR), Gary Kleck (1988) calculated that 43% of felons that ever reported committing a violent crime or burglary stated that for at least one point in their lives they had chosen not to commit a crime due to their belief that the victim was armed. This further implicates the relevancy of threat communication.

In order to increase criminals' knowledge of the situation or increase their belief that their potential victim is armed, and thus increase the possible deterrent effect, there must be a communication of the potential threat. This concept of communication influencing deterrence is specifically dealt with in rational choice theory. "Rational actors are forward-looking, purposeful, and analytic; they consciously and deliberately choose among alternatives based on expected outcomes. The outcomes that matter are not those that have occurred; indeed they need never occur. They need only be expected" (Macy & Flache, 1995, p. 82).

It is for this reason that threat communication is of such prime importance in the study of deterrence and must be examined in this context. Communicating the possibility of an immediate negative response to a criminal act increases a criminal's expectation to encounter such a situation and should decrease the likelihood of the criminal choosing to participate in such potentially deadly criminal behavior.

#### Threat Communication and Criminal Inclination

Threat communication is designed to alter people's behavior by making them understand the threat that their current actions pose to themselves. There are two models for threat communication as it relates to the present study: the parallel response model and the protection motivation model.

#### The Parallel Response Model

The first threat communication model relevant to this study is the parallel response model, which identifies two distinct processes that a person can take when presented with a threatening message. The two processes are the danger control process and the fear control process. The danger control process is a cognitive response of thinking about a potential threat and determining how to avoid or minimize it. For example, a criminal making the cognitive choice to not commit a crime based on a

belief that a potential victim might be armed would be demonstrating this method. The fear control process is the second or, "parallel" response within the model, where one would focus on the emotional response of fear and attempt to control that fear (Witte, 1992). An example of the second process would be the old adage "don't look down" when someone afraid of heights has to deal with being in an elevated environment. In this example, people are not acting to avoid the situation; they are simply attempting to control their personal fear so that the task can be continued. It is the first process, however, that is of the most relevance to this study. According to the danger control process, as the criminal's cognitive awareness of the threat of possibly encountering an armed victim increases, so should the level of fear. When the level of fear increases, it should increase the desire to minimize risk. Minimizing the risk following this method would be decreasing the likelihood of committing a crime where the victim would be encountered.

#### Protection Motivation model

The second model of relevance to this research is the protection motivation model, which predicts that people will be more likely to take the appropriate action when "they can be convinced of the threat's seriousness and their susceptibility to it" (Beck & Frankel, 1981, p. 210). For the purposes of

criminal deterrence, an example of this strategy could be providing sufficient knowledge of the threat; in this case, it is the likelihood of encountering a legally armed potential victim and offering an acceptable method to eliminate the threat, such as simply not committing the intended crime.

#### Substitution of Media Message for Personal Experience

In order to increase criminal cognitive awareness of the potential threat, an effective means of communication must be implemented. It has also been reported that in some instances people will substitute media messages for a lived experience as a method of creating fear. This effect has been specifically noted in the reaction of white women to criminal reports on television. Since white women are often shown as victims in certain television markets, they see themselves as the victims (Chiricos, Eschholz, & Gertz, 1997). This perceived identification with the victims in these reports allows women to alter their behavior in a way that helps them avoid dangerous situations.

It has been specifically noted that those who are criminally inclined will commit more crimes if they encounter more opportunities to do so, and when such individuals regularly encounter opportunities to commit crimes they will seek out opportunities to do so in the future (Clarke, 2012; Gelder,

Elffers, Reynald, & Nagin, 2014). Therefore, the inverse of this should also follow that if these individuals are regularly thwarted in the completion of their criminal endeavors they will be less likely to continue with criminal actions. Following this logic, a criminal could possibly be deterred from committing a crime if reports were made of armed resistance by victims where the criminal could identify with the situation. In this specific instance, the criminal meeting an armed and resisting potential victim could then become the "victim" in the encounter. Other criminals, upon hearing reports of this event, could then identify with the "victim" and take steps to avoid that situation, specifically, avoiding the commission of direct contact crimes.

This theory further implies that communication of information regarding criminal encounters and armed victim response could serve to deter other criminals from committing crimes. This implication also holds in cases where no statistically significant responses to certain interventions are found. Points have been made that this could be caused by a lack of media coverage of the project (Novak, Hartman, Holsinger, & Turner, 1999). In this instance, the lack of the threat communication led to the lack of the deterrent effect being seen.

## Worker Responses to Safety Programs

Studies on worker responses to safety programs have found that "a high level of threat perception relates to ... increased worker readiness to participate in safety programs" (Goldberg, Dar-El, & Rubin, 1991). This translates to the concept of criminal deterrence in the following manner: The greater the level of communication about the number of law-abiding citizens with concealed weapon permits, the greater the level of threat perception and, theoretically, the greater the potential criminal's likelihood to participate in "safety programs," or simply not commit the crime.

## When the Level of Physical Consequences Increases, so Does the Level of Persuasion

It has been noted that when the level of physical consequences increases, the level of persuasion also increases. This connection indicates that people are more likely to comply with appeals based on fear when specific instructions are given to reduce the threat (Sternthal & Craig, 1974). This finding is pertinent to the concept of deterrence theory, as there are likely few possible outcomes that could have greater physical consequences than a criminal's encounter with an armed and resisting potential victim. As the specific method to avoid this potential consequence would be to avoid the commission of direct contact crimes, the knowledge of CWP issuance could function as



a strong criminal deterrent factor. If the possibility of criminals encountering armed victims was advertised in a more public fashion, such as mass media announcements, it could increase the deterrent effect. While there have been several observed occurrences where crime levels have decreased following the media broadcast of such an event (Cook, 1980; Kleck, 1986, 1988), research into these occurrences is scarce.

#### Use of Public Service Announcements

If there is a change in the local gun control policies, much of the deterrent effect noted might depend on the communication of the event. With limited publicity regarding the new policy, there might be no discernable deterrent effect. It is for this reason that threat communication is so vital to the concept of criminal deterrence, be it a specific or general deterrent effect.

One of the prominent methods for threat communication is through use of the media. "Media threats are announced intentions to increase sanctioning certainty" (Sherman, 1990, p. 8). This increased certainty of sanctions is designed to decrease criminals' belief that they will be able to safely and successfully accomplish an intended crime.

Often local authorities will use the media in an attempt to "advertise" an increased effort by local law enforcement through

Public Service Announcements (PSAs), such as a "crack down on speeding" or the popular Click-It-Or-Ticket campaign (Cook, 1980; The Social Marketing Institute, 2009; Weiss & Tschirhart, 1994). In order for social institutions to distribute information, they can utilize the mass media (Surette & Richard, 1995) to increase the knowledge of the deterrence method, producing a more pronounced effect in the decrease of the particular targeted behavior.

There are a couple of benefits to the use of public service announcements that relate to this research. The first of these is the echo effect, which "portends a spillover from the coverage of publicized criminal cases into non-publicized ones" (Surette, 1999, p. 602). Second, there is a benefit in the use of public announcements noted in what is commonly considered a problem in studying their effectiveness. "Many people who have not been exposed to a campaign have heard the same messages from other sources" (Weiss & Tschirhart, 1994, p. 85). In other studies, it has been found that 29% of respondents in PSA studies reported that they have discussed the PSA (Stormann, 1999). While this makes it difficult to measure the effectiveness of a campaign, it is a benefit as the exposure of the information reaches beyond just the direct target audience.

An example of a successful media campaign can be seen in 1966 when incidents of rape were increasing in the United States

and specifically in the state of Florida. In response, the Orlando City Police Department began a gun training program for local civilian women. As a result, there was an 88% decrease in rape in the year following the implementation of the program (Kleck, 1986). Additionally, there was a substantial drop in the burglary rate for the same period, indicating a diffusion benefit of the deterrent effect extending into other areas where a criminal might find an armed female resisting any attack. This effort received several front page stories in the *Orlando Sentinel* (Kleck, 1988). The drop in the crime rates for the logically related crimes, such as burglary, is a perfect example of the echo effect.

However, it must be noted that this estimation of crime deterrence is based on a very limited window of time. The year before the training had an uncharacteristically high number of reported rapes. Based on the observed yearly fluctuations in this crime the argument has been made that the "decrease would be predictable from past behavior in the series, and it could not be attributable to the firearm training" (Mcdowall, Lizotte & Wiersema, 1991). Additionally, the number of observations involved in this case are too low to derive proper statistical power (Mcdowall, Lizotte & Wiersema, 1991).

Threat communication theory would maintain that it was the publicity of this event in the local newspaper that magnified

the deterrent effect by providing the information necessary for a criminal to make a rational decision. If there had been a lack of reporting of this issue, the criminals would likely not have been aware of it. The very definition of deterrence theory requires a rational decision-making process; thus, without this information, the possibility of a rational decision is decreased. Therefore, the criminals would probably not have been deterred and there would not have been such a large drop in the crime rate.

After the news release of the "subway vigilante" story of the man who shot four robbers on a New York City subway in 1984, there was a 43% decrease in subway robberies the following week. However, it is difficult to make an assertion of trends in crime based on such a short timeframe. There is also the notable case of Kennesaw, Georgia, in 1982 where in response to an Illinois law banning handgun ownership, the Kennesaw City Council passed an ordinance requiring the heads of households to keep at least one firearm in the home. Although, it has been noted that this ordinance was not enforced. In fact, after five years of this being in effect not a citation was issued for its violation (Mcdowall, Lizotte & Wiersema, 1991). In the five months that followed this event, the rate of robbery decreased by 89% (Kleck, 1988). However, this observation is only noted when comparing the single year before the event, 1981. If a longer

timeline is utilized for a comparison this effect greatly diminishes (Mcdowall, Lizotte & Wiersema, 1991). Both of these events were highly publicized. It is possible that the level of media attention that these events received was one of the influences on the subsequent decrease in crime rates through threat communication.

### Purposes of Research

This research was intended to explore the interrelationship between two otherwise unconnected theoretical bases: threat communication and deterrence. Specifically, the linkage between the communication of CWP information to criminals and the direct deterrent effect that this specifically focused education has on the inclination of those criminals to commit further direct contact crimes was explored. This study focused on the direct decision-making process of criminals, relating to their decision to commit crime.

This approach will help to build a more thorough understanding of the criminal decision-making process by examining the differences in criminal threat perception between test and control groups when levels of threat communication are varied. The test groups in this study received varying types and levels of information regarding the issuance of CWPs while the control group received no such information. The responses to the

survey are intended to ascertain criminal threat perception relating to the commission of direct contact crimes. Thus, the differences in responses across samples should demonstrate the effects that variation in threat communication levels have on criminal threat perception across different audiences.

This topic has been investigated before using criminal surveys (Wright & Rossi, 2008) to explore a criminal's likelihood to forgo committing a crime based on the knowledge that an intended victim might be armed. Previous research of this nature generally dealt only with criminals' existing knowledge of potential armed victims and inclination to commit crimes based upon that knowledge. Those studies did not measure how, or how much, recently gained information affected criminal threat perception.

"There is definitely an inverse relation between perceived risk of punishment and self-reported delinquency" (Jensen, Erickson, & Gibbs, 1978, p. 66). Therefore, the perception of risk involved in the commission of such a crime is a direct predecessor to the inclination to commit one. More specifically, a quantifiable measurement of criminals' reactions to *newly acquired* knowledge about concealed weapon permits has yet to be explored and would greatly benefit the understanding of this subject. This study works to fill these gaps in the current knowledge base.

This study strives to provide a foundation for using the research methods of threat communication in an analysis of deterrence. By employing threat communication methodologies to understand criminal deterrence, this study can provide a greater understanding of the interdependence of these two theories. Additionally, the study helps to provide a quantifiable measurement of to what extent, if any, provided information affects criminal inclination.

If a quantifiable measurement is made of the extent to which a criminal can, or cannot, be deterred from crime by the communication of varying levels of threat, then political and criminal justice action can be taken, to distribute types and levels of such information in order to reduce crime. For example, if research indicates that providing information about CWPs to criminals shows an increase in threat perception and thus, theoretically, a reduction in criminal inclination by a specific percentage, then the state would likely be able to determine how much benefit could be gained by investing in a PSA campaign to distribute this knowledge.

In order for any political action to be taken, the projected costs and benefits need to be known. It is for this reason that having a quantifiable measurement of the amount to which a criminal is deterred by education about CWPs is so desirable. The difference between a criminal being marginally

deterred versus the same criminal being highly deterred is of great importance in determining the value of a proposed PSA. This research attempts to aid in determining the potential benefits of this approach as well as furthering the understanding of the criminal decision-making process.



## **CHAPTER 3: METHODOLOGY**

### Research Questions

This research addresses five basic questions (see Table 26 in Appendix A). First, "Will a criminal's awareness of the state's laws concerning the issuance of concealed weapon permits influence perception of the threat involved in the commission of direct contact crimes?" Second, "Will a criminal's awareness of the number of law-abiding citizens within a given state legally carrying concealed weapons influence perception of the threat involved in the commission of direct contact crimes?" Third, "To what degree will their knowledge of the issuance of CWPs and their awareness of the number of law-abiding citizens within a given state with concealed weapon permits influence their perception of the threat involved in the commission of a direct contact crime?" The next two questions are obliquely related to the concealed weapon permit concept. As knowledge of concealed weapon permits increases, the presence of innocent third parties in the vicinity would, in addition to providing potential witnesses, also increase the potential that there would be an armed individual who might intervene. Therefore the fourth

research question is, "Will the proximity of innocent bystanders to the victim influence the perception of the threat involved in the commission of direct contact crimes?" Finally, "Will the perception that the victim is potentially armed influence the perception of the threat involved in the commission of direct contact crimes?"

By understanding how this information influences criminal perception of the threat related to committing different types of crime, it will be possible to see in what ways this information will be of the greatest use. By advancing the understanding of the criminal thought process through a theoretical framework that combines both threat communication and deterrence theory, we may get an improved understanding of specific and general deterrent effects among the offending population by focusing on perceived threat communication.

The following research hypotheses are addressed in order to examine the perceived threat perception of the knowledge of CWP issuance.

H<sub>1</sub>: As knowledge of CWP issuance policies increases, the level of threat perception related to the commission of direct contact crimes will increase.

H<sub>0</sub>: As knowledge of CWP issuance policies increases, there will be no change in threat perception related to the commission of direct contact crimes.

H<sub>2</sub>: When informed of the number of CWPs granted, the level of threat perception related to the commission of direct contact crimes will increase.

H<sub>0</sub>: When informed of the number of CWPs granted, there will be no change in threat perception related to the commission of direct contact crimes.

H<sub>3</sub>: As knowledge of CWP issuance policies increases AND when informed of the number of CWPs granted, the level of threat perception related to the commission of direct contact crimes will increase.

H<sub>0</sub>: As knowledge of CWP issuance policies increases AND when informed of the number of CWPs granted, there will be no change in threat perception related to the commission of direct contact crimes.

H<sub>4</sub>: When innocent bystanders are present the level of threat perception related to the commission of direct contact crimes will increase.

H<sub>0</sub>: When innocent bystanders are present there will be no change in threat perception related to the commission of direct contact crimes.

H<sub>5</sub>: When the perception is present that the victim is potentially armed the level of threat perception related to the commission of direct contact crimes will increase.

H<sub>0</sub>: When the perception is present that the victim is potentially armed there will be no change in threat perception related to the commission of direct contact crimes.

#### Use of Research and Potential Benefits

This research is similar in nature to the survey methods used by James Wright and Peter Rossi (2008) in their research on prisons in the U.S. Their method sought to explore criminals' actual reluctance to commit certain crimes based on their knowledge of, and experiences with, armed potential victims. The main difference of this study compared to Wright and Rossi's work is the inclusion of an intervention aspect. In this case, the intervention was differing levels, and types, of communication regarding CWP laws and issuance. By using differing levels and types of communication, the researcher can determine which, if any, has the greatest effect on perceived threat perception. This is an advancement of the current knowledge base and increases our understanding of the impact that threat communication can have on subsequent threat perception related to overall crime and across crime types.

This study may be used to understand the potential deterrent effect that the threat communication of CWPs has on crime reduction. A strong enough observed relationship between

education about CWPs and criminal inclination would benefit policymakers and state—and perhaps federal—officials. Results may indicate that it is desirable to make more public announcements regarding issuance of permits. This action, regardless of any actual policy changes, may contribute to a cost effective crime reduction remedy for crime. The advantage of potentially reducing crime with no policy changes and at virtually no cost is obvious. Also, by determining whether education regarding the number of CWPs, education about the laws concerning issuance, or a combination of the two is most effective at increasing criminal threat perception, the ideal course of education aimed at reducing direct contact crimes can be developed.

Additional possibilities for the potential use of the knowledge gained by this study can be found in the sections of the analysis that include data relating to socioeconomic status (SES) as well as other demographic factors. If it can be shown that certain segments of society are more reactive to certain types of threat communication and behavioral deterrence, then those agencies benefiting from such knowledge will be able to focus their attention on the places where their assistance will have the greatest effect. For example, if it is shown that threat communication has the greatest threat perception for a specific demographic, then it would be wise to have the greatest

number of advertisements in areas that are known to have the highest concentration of this demographic in their populations.

It has been estimated that \$6 billion in financial gain was attributable to a reduction in violent crime resulting from the allowance of concealed carry permits between the years of 1977 and 1992 (Lott & Mustard, 1997). Since crime is one of the most expensive problems for government to deal with, the possibility of a low cost, or no cost, method of further reducing crime and its associated cost is an exciting prospect. The potential for fiscal repercussions alone contributes to the value of this research endeavor.

#### Sample Design

The subjects for this study were 426 inmates incarcerated in the Orange County jail in central Florida. This jail was selected due to availability and accessibility agreements with the jail personnel. This study was geographically limited to the central Florida area. While this limitation can create problems with external validity, these problems will likely be minimal.

Inmates in Florida jails have a higher percentage Hispanic population than the country average; however, there is no reason to believe that the findings would be statistically different in other locations. Per discussions with the administration of the facility, it is believed that since Florida, and specifically,

central Florida, has a fairly transient population, indicated by the current jail population, the sample from this area is fairly indicative of inmates across the country. However, exact numbers of inmate populations relating to their home region was not available from the facility.

It is acknowledged that this restricted scope of study may be a limitation to the external validity of this research. Due to voluntary participation within the available population of the facility, the number of respondents has been limited to 426 based on the current population of the facility. Previous research indicates that this is a large number of responses from a single facility. Wright and Rossi (2008) reported survey responses ranging between 48 (Massachusetts) and 362 (Missouri). Additionally, this is approximately the same number of males selected in a similar scenario-based study used to determine criminal propensity levels among college students (Nagin & Paternoster, 1993). Out of necessity, the sample was drawn only from available inmates. Due to security and medical considerations, the entire prison population was not available. Every effort was made to provide all qualified inmates an equal chance of participation.

As many voluntary respondents as possible within the facility were given the survey and randomly provided with the various group instruments. This process was initiated under the

assumption that there would be a standard refusal rate and thus a set number could not be determined until after the survey was administered. This methodology was based on reported response rates in similar prison studies, which gave a response rate varying from 22% to 96%, depending on the prison (Wright & Rossi, 2008).

One potential benefit found here would address a drawback noted in research by Wright and Rossi (2008) regarding focusing their research on state prisons. A point was made that since first-time offenders are less likely to be imprisoned, they are underrepresented in the research (Wright & Rossi, 2008). Following on this thought, there is a possibility that those studied in prison research are inherently less affected by deterrence since those individuals are more likely repeat offenders. By focusing this research on the Orange County Jail rather than a state facility, it is believed that a greater understanding of the thought processes of those who may be less hardened towards criminal endeavors could be developed. The jail population is composed of more offenders who are early in their criminal careers than is the prison population. This fact, at least in theory, makes this study more able to be generalized to the non-criminal population when attempting to draw conclusions about deterring the average person from committing crimes.



Recruitment of subjects was accomplished via a personal announcement in their dormitories during allowed time frames. The statement indicated only that the purpose of the study is to determine their beliefs of crimes occurring under certain circumstances. Per the IRB requirements, after completion of the study, the respondents received full disclosure as to the nature of the study, as this information might have influenced their responses had it been provided prior to administration. As the study was conducted in the Orange County Jail, per their regulations, no forms of compensation for participation were allowed.

Due to the nature of this study—determining the likelihood of committing a crime—many inmates potentially may have been hesitant about answering certain questions due to possible concern of this affecting release from incarceration. Therefore, in order to assure reliable feedback, all efforts were made prior to administration of the survey to ensure confidentiality so that the subjects would feel more comfortable giving honest answers. This survey was therefore presented in groups based on available size of the respective dormitories. The subjects were instructed to fill out the survey and place it, folded, in a sealed box so it could not be determined who completed any one particular survey.

The random subject selection process allowed for a large percent of those available to be able to refuse to participate. By sampling the entire available population, the study had an acceptable safety margin to account for possible refusal while still ensuring that the minimum number of desired subjects would participate.

### Instrumentation

Data used in this research effort were collected using a scenario-based approach. Scenario-based research differs from traditional data collection methods in that the most common methods rely on reporting of prior actions, whereas scenario methods rely on the personal perceptions of the subjects by judging their likelihood to participate in specific actions (Nagin & Paternoster, 1993) As opposed to a more direct questioning method, which is more common, where the questions directly ask the individual their likelihood of committing various crimes, this method has distinct advantages. Primarily among these, as it relates to this study, is the fact that respondents are more likely to report honestly as opposed to biasing their responses in a way that they view the interviewer would find favorable (Alexander & Becker, 1978). Also noted is the fact that direct questioning regarding intention to offend may encourage respondents in a criminal environment to boast and

increase their expressed likelihood of committing criminal acts. However, in reality their actual likelihood of acting in such a manner in real life may be much lower (Wright et al., 2004).

For this research the various vignettes were intended to measure the subjects' intention to offend based on the criteria presented. Using vignettes, Nagin and Paternoster (1993) investigated the likelihood of college students committing various crimes under varying circumstances. Since the intention of this study was to gain a greater understanding of the criminal thought and decision making processes, scenarios form an ideal basis to elicit data.

## Variables and Measurement

### Dependent Variables

Each of the scenarios was designed to be extremely brief, simple, and easily understood in order to minimize reading comprehension problems among sample respondents. Due to limitations relating to the administration of the survey, data were not recorded in the few instances where the respondent did not understand English. Each selected scene covers one of the basic types of crime that is noted to have the greatest possible threat perception effect. Examples of the scenarios are as follows (see Table 27 in Appendix A):

1. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There are approximately 15 people within sight. What would be the likelihood of someone attempting to take her purse?
2. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There are approximately 15 people within sight. What would be the likelihood of someone attempting to take her purse?
3. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There is no one else within sight. What would be the likelihood of someone attempting to take her purse?
4. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There is no one else within sight. What would be the likelihood of someone attempting to take her purse?
5. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. What would be the likelihood of someone attempting to burglarize the house?

6. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. The house is in a rural area where people are known to keep firearms for sporting purposes. What would be the likelihood of someone attempting to burglarize the house?
7. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. There is no one nearby; however, there are 5-6 other people in sight. What would be the likelihood of someone attempting to rob him?
8. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one nearby; however, there are 5-6 other people in sight. What would be the likelihood of someone attempting to rob him?
9. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. There is no one else nearby. What would be the likelihood of someone attempting to rob him?
10. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one else nearby. What would be the likelihood of someone attempting to rob him?

11. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in line; however, there are 1-2 other people in the back of the store. What would be the likelihood of someone attempting to rob the store?
12. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in line; however, there are 1-2 other people in the back of the store. What would be the likelihood of someone attempting to rob the store?
13. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in the store. What would be the likelihood of someone attempting to rob the store?
14. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in the store. What would be the likelihood of someone attempting to rob the store?
15. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. What would be the likelihood of someone attempting to steal the car?

16. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away and it is noted that there is a bulge under the owner's jacket that looks like a gun. What would be the likelihood of someone attempting to steal the car?
17. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. There are 10 other people shopping at the stand nearby. What would be the likelihood of someone attempting to steal the car?
18. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away and it is noted that there is a bulge under the owner's jacket that looks like a gun. There are 10 other people shopping at the stand nearby. What would be the likelihood of someone attempting to steal the car?
19. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted city park that is filled with trees and bushes. What would be the likelihood of someone attempting to sexually assault her?

20. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted city park that is filled with trees and bushes. She appears to be walking with her hand in her purse as if she is holding something. What would be the likelihood of someone attempting to sexually assault her?

21. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted rural park that is filled with trees and bushes. What would be the likelihood of someone attempting to sexually assault her?

22. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted rural park that is filled with trees and bushes. She appears to be walking with her hand in her purse as if she is holding something. What would be the likelihood of someone attempting to sexually assault her?

It must be noted that each of these scenarios has certain aspects in common. According to the Justice Research and Statistics Association use of FBI crime data, the majority of personal contact crimes are committed at night (Justice Research and Statistics Association, n.d.). Therefore, each of the scenarios includes a reference to a time period later in the



day. This is done to make the situation as "attractive" as possible for someone contemplating the commission of a crime. Additionally, a human element is included in each scene. The number of people listed in each scenario is kept minimal, as a large crowd could potentially have a perceived threat of its own. However, a human element has been included to a small degree so that the subjects are able to judge the likelihood of one of the people possessing a CWP and how this might calculate in their decision-making process. The number of people listed in each scenario was chosen to provide a sufficient and varied background for determining whether there is a perceived threat effect for the study without creating a crowded environment. Additionally, it should be noted that the questions are asked in a third party method similar to the method used by Nagin and Paternoster (1993). By asking the question in the sense of "what would be the likelihood of someone doing this," as opposed to "what is the likelihood of you doing this," it is likely that the subjects will feel less threatened about answering the questions honestly.

#### Independent Variables—Demographics

With the inclusion of demographic questions on each survey, it can be shown which groups will be the most affected by a

threat-based communication intervention. Demographic inquiries will focus on the following (see Table 28 in Appendix A):

- Level of education
- Age range
- Race
- Ethnicity
- Gender
- Criminal history

Education, age, and race are given as ordinal categories with several potential selection options for the respondent to choose from. The education question has "Less than high school," "High school diploma/GED," "Some college," "Associates degree," "Bachelor's degree," "Graduate degree," and "Trade school degree" as potential selections. Age is given as a series of ranges: 18-25, 26-35, 36-45, 46-55, 56-65 and over 66. The race options are White, Black, Asian, Native American, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Multiple/Mixed, and Other. Ethnicity and Gender are simple dichotomous variables with options of Hispanic origin or Non-Hispanic origin and male or female, respectively. These are similar demographic questions used by Wright and Rossi in their prison survey research (2008).

## Independent Variables—Knowledge Level

Two further questions were included in the instrument. These questions are intended to ascertain the individuals' awareness of the extent to which legal concealed carry occurs. This information was intended be analyzed separately in order to determine how much influence prior awareness has on shaping prior criminal perception as compared to newly acquired information. These additional questions are as follows (see Table 29 in Appendix A):

- Has anyone you have known run into an armed victim before?
- What would you estimate is the percentage of people legally carrying firearms in Florida?

The question regarding encountering an armed victim is a simple dichotomous variable. The question about the estimated percentage of people legally carrying firearms is ordinal with 10 potential selections, each with an even ten percentage point range. Additionally, a question was added: "Have you ever been involved in a violent crime?" This question is also a simple dichotomous variable with either an affirmative or negative possible answer. The purpose of this question is to enable data analysis to determine whether this knowledge has a greater impact upon those criminals who have direct violent contact with

their victims than on those who focus more on crimes that do not involve violent victim contact.

These questions appeared in this order at the end of the instrument for the control group. However, there is a minor change in the order for the test groups. The questions dealing with prior knowledge of concealed weapon permits and knowledge of anyone encountering an armed potential victim were asked before the administration of the intervention for the test groups. Since these questions are intended to aid in measuring how the level of prior knowledge affects answers to the questions across test and control groups, they must be asked before the test groups provide answers to the offered scenarios. Since the control group did not receive the intervention, this was not a concern. Additionally, by placing it at the end of the instrument for the control group, it is not initially creating the thought of potential concealed weapon permit holders before the other questions are answered, thus attempting to minimize potential testing effects. This placement was intended to assist in obtaining the most accurate responses for the control group. All variables are shown in Tables 27 through 29 in Appendix A.

#### Analytical Techniques

The test was administered in a group setting within the facility dormitories, both to expedite the study and to add

anonymity for the subjects. For security reasons, the size of the groups was limited to the available volunteers in each location. Due to time, cost, and efficiency concerns, larger group sizes were preferable, as more tests can be administered at one time; however, the groups were based on the size of the common rooms of the facility. The subjects were instructed to not interact with each other during the study.

Each of these scenarios was presented in a written format, with the questions presented with the numbers 1-7 written below each question. Instructions were given to circle the appropriate number corresponding to the perceived likelihood of a person committing the crime described in each vignette. Inmates who had only foreign language skills were not represented in this study; however, discussions with jail personnel indicated that the percentage of inmates who did not speak English was minimal. However, the response rate among those of Hispanic ethnicity was representative of the overall available population.

### Research Design

The study was done as a post-test only control group design, using a randomized sample factorial method (Campbell & Stanley, 1963). The notation for this design is as follows:

$$\begin{array}{l} R \quad O_1 \\ R \quad X_1 \quad O_2 \\ R \quad X_2 \quad O_3 \end{array}$$

As can be seen in this notation, there was one control group and three separate test groups. For the control group, the scenarios were simply given with no advance steps taken. Their answers provided a baseline from which to assess the effect of the intervention upon the test groups. The intervention was administered to test groups prior to the scenario-based questions. The first intervention (X<sub>1</sub>) is a simple, brief explanation of the state regulations on the issuance of concealed weapon permits. This explanation included the requirements for obtaining a permit (i.e., no felony history, no mental incapacity, and cost). This explanation is included so that the subjects can make an individual judgment as to the difficulty of obtaining a CWP. The second intervention (X<sub>2</sub>) consisted of education regarding the total number of citizens and respective overall percentage of the current state population that has such permits. The percentage of people in the state with a permit was given to provide the subjects with the knowledge necessary in order to make a judgment of the likelihood of any of the people in the scenarios having such a permit. The third potential intervention (X<sub>3</sub>) was designed to be a combination of the first two, giving both an explanation of

the regulations as well as the number and percentage of the population with CWPs.

By using three separate test groups, the study could examine whether knowledge of the regulations as well as awareness of those already in possession of such permits is a greater perceived threat than the knowledge of either one alone. This knowledge can help determine which, if any, are the most effective educational methods to use in order to increase criminal threat perception and, thus, reduce criminal inclination.

The analysis of the test groups is intended to then show a combination of the results of treatment and history of the individual on criminal threat perception relating to direct contact crimes. The control group does not show any treatment effects. The average differences between the responses for the four groups should indicate the effects that the different levels and types of educational treatments have created.

It was assumed that due to random subject selection, the pretest on all groups would have been comparable; therefore, this step was eliminated. If a pretest were to have been given followed by the intervention and posttest, there was a high likelihood that the subjects would experience testing effects that might have altered their responses. Therefore, forgoing a pretest was viewed as the best method to use in order to

eliminate testing threat as well as other threats to internal validity. Additionally, due to the single point of data collection, the time was not sufficient to provide potential for history, maturation, or mortality threats.

The instrument for this study is a standard seven-point Likert scale. The scale had fixed end points, with level 1 being "extremely unlikely" and level 7 being "extremely likely." Levels 2 through 6 were numbered but unlabeled (see Appendix A). This lack of labelling allowed for individual interpretation of the mid-range levels. Additionally, using a Likert scale of this nature allows for a greater variance in the knowledge and certainty of the respondents compared to a simple dichotomous variable (Stormann, 1999).

#### Human Subjects

While the subjects were randomly selected for statistical purposes, care was still taken to obtain proper consent. The subjects were obviously able to decline to participate in the study. It was assumed, however, that due to the circumstances, a relatively small number would decline to participate in the study. Wright and Rossi's research (2008) indicated a refusal rate as low as 4%. The present study was intended to provide an entertaining break in the daily routine as well. All procedures



were subject to the UCF human subject review board (see Appendix B).

Confidentiality had to be certain in this study in order for participants to be able to answer truthfully. Therefore, each completed survey was placed by the subject in the slot of a locked box. In this way, the subjects were assured of the confidentiality of their replies.

#### Support of Facility

As this survey was conducted within a secure facility, the support of the facility was vital. From the beginning, permission had to be given to conduct the study, and the list of available inmates needed to be obtained from the jail officials. Additionally, the cooperation of the individual guards was a necessity so as not to influence the subjects in any of their actions.

Permission for the study was gained from the authorities at the Orange County jail, contingent upon documented study approval by the University of Central Florida.

## **CHAPTER 4: DATA ANALYSIS**

### Statistical Analysis

Prior to the full survey taking place at the Orange County Jail a pilot study was performed at the Volusia County Jail during March of 2012 in an attempt to assess the validity of the instrument. This facility was chosen as it was believed to be far enough from the primary research location so as to not provide communication between the samples and, thus, contaminate the study. This facility was also believed to be close enough to represent the demographic character of Orange County. At this time the survey appeared to be understood by the respondents with only minor suggestions for ease of use.

At the Orange County Jail the study was replicated in August of 2012 on a larger scale over the course of three days. It was performed in the common areas of each of the pods. The instrument was separated into four piles on a table in each of the pods, one for the control and one each of the test groups. The participants were instructed to self-select an instrument, read the intervention on the first page, in the cases of the test groups, and complete the survey. In each pod the order of

the piles was reorganized to avoid a common selection order. Upon completion of the instrument the respondents were instructed to place the survey in a box with a slit in the top to ensure anonymity.

The collected data fell into six specific crime types: purse snatchings, home invasion, mugging, robbery, car theft, and rape; thus, the data were analyzed within these groups. As the purpose of this research was to determine whether there is a difference in the means of responses between the control and test groups, ANOVA (Analysis of Variance) was the preferred method of data analysis.

ANOVA is a highly robust analytical technique for comparing the means of three or more groups, as long as its assumptions (independence, normality, and homogeneity) are not violated. A standard Levine test for homogeneity of variances was performed prior to ANOVA to ensure that the assumptions of ANOVA were not being violated and this was, in fact, the most appropriate analytical technique (Field, 2011). See Table 30 Test of Homogeneity of Variances.

Questions within each group were asked multiple times. Each question, for each group, was asked four times, with the exception of home invasion, which was asked only twice, with different variables included in each iteration. The primary differences in the questions are the number of bystanders

included in each scenario as well as the observation that the potential victim may be armed. The home invasion section did not include additional bystanders, as bystanders were not a reasonable inclusion for this scenario. Also, the scenario for rape does not specify additional individuals in the area as this could be problematic for the scenario; however, a differentiation was made as to vignette location, urban or rural as this was a distinction indicated as useful by the pilot study. It was hoped that this would be a distinction in the minds of the respondents. Since each respondent answered the same question multiple times with only minor alterations the Repeated Measures ANOVA was the most appropriate method of analysis for this study.

Next, a simple comparison of the means was performed on all data sets, both those evidencing statistical significance between the means and those that did not. The comparison of the means observes the direction of the difference to determine whether the intervention is having the effect of increasing or decreasing the perception of threat relating to the commission of crimes. This then helps to determine whether there is a prevailing trend in the responses if statistical significance is not reached. Given the exploratory nature of this research effort, such an approach was warranted.

For all analyses the Statistical Program for the Social Sciences (SPSS) was used. Each point on the survey as well as the demographic and other information was coded so that all possible correlations could be noted.

## Correlations

As multicollinearity increases, it becomes more difficult to determine the individual importance of a specific predictor (Bachman & Paternoster, 2009; Field, 2011). Therefore, prior to all other analysis of the data, a correlation matrix was referenced to determine whether multicollinearity needed to be accounted for. Upon running a correlation matrix, it was determined that while many of the variables indicated some degree of correlation, only two pairs of questions indicated a high correlation of .7 or greater (Bachman & Paternoster, 2009); however, they were both below the .8 maximum threshold identified by Field (2011). The questions that were highly correlated were questions 19 and 21 and questions 20 and 22. These pairs of questions were both virtually identical with the only difference between them being the words "rural" and "city," which was meant to determine whether location had any great effect on the responses. As many of the participants verbally indicated that they believed the same question to be asked both times, it is likely that the one word difference was not noted

when the question was answered. This would account for the high correlation between these two pairs of questions. By analyzing these multiple questions as a repeated measure in further analysis, we were able to offset the potential ramifications of multicollinearity.

#### Independent Variable Analysis

The final sample from the Orange County Jail consisted of a total of 426 respondents, excluding refusals and responses not capable of being coded, such as handwritten responses outside of the design parameters. The total population of the facility at the time of the study was 3117 giving an overall response rate of 13.7%. However, it must be noted that the available participants were limited by the facility to those who were not under medical observation, psychiatric evaluation, solitary confinement, or protective custody.

Table 1 explores the four samples and indicates equal distributions across groups, both tests and control, indicating that the sampling scheme functioned properly.

Table 1

Group Frequencies

Group	Frequency	Percent
Information regarding CWP issuance	105	24.6
Number of CWPs	105	24.6
Both Information and Number of CWPs	108	25.4
No Information	108	25.4
Total	426	100.0

The overall demographic variable responses can be seen in in Table 2.

Table 2

## Demographic Variables

Variable	Frequency	Percent	
Education	Less Than High School	78	18.3
	High School Diploma or GED	161	37.8
	Some College	90	21.1
	Associates Degree	22	5.2
	Bachelor's Degree	19	4.5
	Graduate School Degree	7	1.6
	Trade School Degree	28	6.6
	Total*	405	95.1
Age	18-24	103	24.2
	25-34	157	36.9
	35-44	70	16.4
	45-54	70	16.4
	55-64	17	4.0
	65+	4	0.9
	Total*	421	98.8
Race	Asian	10	2.3
	American Indian or Alaska Native	13	3.1
	Black or African American	152	35.7
	White or Caucasian	171	40.1
	Native Hawaiian or Other Pacific Islander	5	1.2
	Multiple/Mixed	15	3.5
	Other	34	8.0
Total*	400	93.9	
Ethnicity	Hispanic	75	17.6
	Non-Hispanic	276	64.8
	Total*	351	82.4
Gender	Male	273	64.1
	Female	147	34.5
	Total*	420	98.6

\*Totals less than 426 indicate respondent refusal to answer question

As can be seen here, the sample set is skewed, as expected, towards the lower levels of education, with only 17.9% of respondents having a college degree. This is a higher reported educational level than found in other criminal surveys (e.g.,



Wright & Rossi, 2008), where only 2.8% had attained a college degree. However, the educational disparity could still have an influence upon the participants' responses to the survey, as it could indicate differential levels of comprehension of the instrument. As the survey was performed in a group setting, it was noted that several of the respondents were requesting assistance with reading and filling out the survey from other participants, who may not have been in the same group and would have, in that case, received another intervention. When analysis of the data was performed it was determined that the higher levels of educational degrees, including Associates degrees, Trade School degrees, Bachelor's degrees and Graduate degrees, accounted for 76 cases and only 17.9% of the sample. Therefore, it was determined that these categories would be combined into the Some College category and be reclassified as Post HS Training/College. The new classification of the age variables can be seen in Table 3.

Table 3

Education Recoded

		Frequency	Percent
Education	Less Than High School	78	18.3
	High School Diploma or GED	161	37.8
	Post HS Training/College	166	39.0
	Total*	405	95.1

\*Totals less than 426 indicate respondent refusal to answer question

Age is another demographic factor that could have an effect upon participants' responses. This demographic breakdown is as expected, with 77.5% of the sample indicating that they were less than 45 years of age, which is consistent with the average ages of criminal offenders (Blonigen, 2010). However, here it is also noted that the upper boundaries of the reported categories were sparsely populated; thus, recoding of the variables was also necessary. Due to the fact that a very low percentage of respondents classified in the categories above 55 years old (a total of only 21 or 4.9%) the two highest age levels were merged into the 45-54 year old category, which was reclassified as 45+. This change aided the analysis by helping to avoid possible

reporting of outliers. The new classification of the age variables can be seen in Table 4.

Table 4

Age Recoded

		Frequency	Percent
Age	18-24	103	24.2
	25-34	157	36.9
	35-44	70	16.4
	45+	91	21.4
	Total*	421	98.8

\*Totals less than 426 indicate respondent refusal to answer question

The primary point to note within the race demographic variable is the number of missing responses, 26. This is 6.1% of the sample group refusing to answer this question, which is the second highest refusal rate, second only to ethnicity. A portion of this refusal is attributed to respondents' verbally indicating that they were unsure of the appropriate answer while there were multiple handwritten responses made in lieu of a selection (e.g., "human") that were not able to be coded based on the defined parameters of the instrument. It was additionally noted in this variable that several of the categories, including Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Multiple/Mixed, and Other only accounted

for 77 respondents or 18.1% of the total sample. Therefore this variable was also recategorized into only three classifications, as seen below in Table 5, for more accurate analysis.

Table 5

Race Recoded

		Frequency	Percent
Race	White or Caucasian	171	40.1
	Black or African American	152	35.7
	Other	77	18.1
	Total*	400	93.9

\*Totals less than 426 indicate respondent refusal to answer question

Data obtained from the Orange County Jail indicate that the population at the time of the study was approximately 50% for both black and white. However, due to the categorization methods employed by the facility additional categories are not available. This facility identifies this as a dichotomous variable and does not have a provision for additional options. This makes it difficult to identify the true representativeness of the sample.

As a follow-up question to race, the subjects' ethnicity was questioned. This is one of the most telling of the demographic variables. The available possible Hispanic participants were 15.2% of the overall facility population. This appears to indicate that with the 17.6% Hispanic respondents that this group was appropriately sampled. However, many of the respondents verbally indicated that they were unsure of the proper response to this question, which is shown by the 17.6% refusal rate. While this is not a concern for the overall study, it became problematic when later analyzing the data based on ethnicity, as this analysis of the population was not included. Due to the problematic nature of this variable, both in its refusal rate and the expressed lack of comprehension of its meaning among the respondents this variable was not used in further analysis.

Gender is perhaps one of the most insightful demographics collected. The actual percentage of the female population at the Orange County Jail, as reported by the facility, is approximately 11.73%. As the sample was 34.5% female, the response rate among the available female population was substantially higher than that of the available male population. This overrepresentation of the female population had to be considered when analyzing the data.

There are three additional questions in the demographic section of the instrument, provided in Table 6, which were designed to gain a further understanding of how the respondents' history would affect their responses to the survey.

Table 6

Violent Crime History and Knowledge About Firearm Possession

		Frequency	Percent
Have you ever been involved in a violent crime?	Yes	190	44.6
	No	232	54.5
Has anyone you personally know encountered an armed victim before?	Yes	218	51.2
	No	201	47.2
What would you estimate is the percentage of people legally carrying firearms?*	Less than 1%	2	1.9
	1-3%	3	2.8
	3-5%	7	6.5
	5-10%	18	16.7
	10-25%	24	22.2
	25-50%	28	25.9
	50-100%	20	18.5
	Total*	102	94.4

\*Totals less than 426 indicate respondent refusal to answer question

\*\*This question was provided only to the Control Group, which had 108 total respondents

The first of these, "Have you ever been involved in a violent crime," was intended to identify those within the sample who were already inclined towards direct contact crimes. As can be seen here, 44.6% of the respondents reported that they had been involved in a violent crime. The 54.5% who indicated that they had never been involved in violent crime were most likely currently incarcerated for drug or other non-violent offences.

These individuals would presumably be the least likely to indicate an increased deterrence affect based on information, as they were not individuals who were likely inclined towards violent crimes to begin with. However, it was also noted verbally by a large portion of the respondents that this question was interpreted to indicate if they had ever been the *victim* of a violent crime and not the perpetrator of one, thus invalidating the usefulness of this question in further analysis.

The second history question in this section was whether anyone the respondent knew had encountered an armed victim before. The answer to this question, potentially, greatly affected deterrence related to concealed weapon permit information, as they would already have knowledge of this topic. However, anecdotal evidence gained at the time of the survey determined that many of the respondents who reported an affirmative response to this question encountered another armed criminal and not a victim who was permitted and legally carrying a weapon for self-defense. Therefore, as this question was expressly misinterpreted by the respondents to this study it was not used in further analysis.

The final question, which was provided only to the control group at the end of the survey, was what the participants would estimate was the percentage of people legally carrying firearms.

This question would help determine the baseline belief for the Control Group to determine if the average criminal estimate is greater than or less than the actual number of CWP holders. In order to obtain accurate percentages for this table, the calculation was limited to the control group. As can be seen, 83.3% of the respondents believed that greater than 5% of the population was legally carrying a firearm, while the actual percentage in Orange County is only a little more than 3.5%. This belief could lessen the impact of the treatment, indicating that criminals tend to believe more people are carrying weapons than the actual percentage of weapons carriers.

Due to the differential sampling between male and female respondents, the history questions must be examined separately in order to see whether there is a differentiating effect between these demographics. Table 7 indicates the separate mean responses for males and females within the sample.



Table 7

Gender History

	Male			Female		
	N	Mean	SD	N	Mean	SD
Have you ever been involved in a violent crime?	273	1.58	0.495	147	1.5	0.502
Has anyone you personally know encountered an armed victim before?	270	1.48	0.501	145	1.48	0.501
What would you estimate is the percentage of people legally carrying firearms?	51	4.94	1.567	49	5.37	1.253

As can be seen here, while encountering an armed victim remains the same between the genders, the other two questions offer differences. Females in the sample tended to indicate that they believed a greater number of individuals are legally carrying firearms. As this particular question was given only to the control group after the assessment, this indicates that the control group among females would have less potentially threat perception knowledge gained from the intervention. This could indicate that there could be a lesser perception of threat found when analyzing mean differences between groups for females. For this reason, further analysis is warranted based on this demographic. Additionally, females verbally indicated that they often viewed the violent crime question as being the victim of

violent crime, as opposed to perpetrating one. This difference in viewpoints could strongly affect the outcomes of the responses to the questions in the instrument.

#### Dependent Variable Analysis

The first step in comparing the means would be a standard Levine test for homogeneity of variances to ensure that the assumptions of ANOVA have not been violated (see Table 30 in Appendix A). As none of the variances are below the .05 significance level, this indicates that the variances are not significantly different; thus, a repeated measures ANOVA is the best option for analyzing the difference between the means in these groups.

There are 22 unique and separate dependent variables in this analysis that represent different criminal scenarios. The following crime categorization scheme was observed for this analysis. Six categories of questions were observed independently: purse snatchings, home invasion, mugging, convenience store robbery, car theft, and rape.

**Purse snatchings.** Four questions measured criminal threat perception with regard to purse snatchings. These questions were intended to provide varying circumstances that would provide opportunity for a purse snatching. The differences between these questions identify a different number of innocent bystanders to

see whether there is a concern relating to possible intervention by a potential armed witness and whether the potential victim appears to be armed. The questions and their responses can be seen in Table 8.

Table 8

## Purse Snatchings Response Frequencies

		Frequency	Percent
	Very unlikely	62	14.6
1. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There are approximately 15 people within sight. What would be the likelihood of someone attempting to take her purse?	2	49	11.5
	3	72	16.9
	4	75	17.6
	5	78	18.3
	6	35	8.2
	Very likely	46	10.8
	Total*	417	97.9
	Very unlikely	115	27
2. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There are approximately 15 people within sight. What would be the likelihood of someone attempting to take her purse?	2	72	16.9
	3	59	13.8
	4	66	15.5
	5	63	14.8
	6	25	5.9
	Very likely	18	4.2
	Total*	418	98.1
	Very unlikely	76	17.8
3. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There is no one else within sight. What would be the likelihood of someone attempting to take her purse?	2	35	8.2
	3	29	6.8
	4	39	9.2
	5	57	13.4
	6	66	15.5
	Very likely	115	27
	Total*	417	97.9
	Very unlikely	108	25.4
4. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There is no one else within sight. What would be the likelihood of someone attempting to take her purse?	2	42	9.9
	3	53	12.4
	4	59	13.8
	5	66	15.5
	6	46	10.8
	Very likely	43	10.1
	Total*	417	97.9

\*Totals less than 426 indicate respondent refusal to answer question

Before deeper analysis is performed, the mean responses for all of the groups is desired in order to gain an understanding of the variables present. The means indicate the directionality of the change to determine whether the change is, in fact, a positive one which increased the criminal threat perception and did not decrease it. This will also show, for all other responses, the directionality of any potential changes, even if not statistically significant. See Table 9.

Table 9

Purse Snatchings Group Means

		People No Weapon	People Weapon	No People No Weapon	No People Weapon	Average
No Information	<i>N</i>	106	106	107	107	
	Mea	3.9	3.13	4.79	4.03	3.96
	SD	1.882	1.696	2.197	2.112	
Information regarding CWP issuance	<i>N</i>	103	104	102	102	
	Mea	3.79	3.09	4.46	3.49	3.71
	SD	1.918	1.921	2.294	1.943	
Number of CWPs	<i>N</i>	103	105	105	105	
	Mea	3.91	3.05	4.22	3.28	3.61
	SD	1.821	1.852	2.333	2.073	
Both Information and Number of CWPs	<i>N</i>	103	105	105	105	
	Mea	3.91	3.05	4.22	3.28	3.61
	SD	1.821	1.852	2.333	2.073	
All test groups	<i>N</i>	311	312	310	310	
	Mea	3.81	3.07	4.39	3.43	3.68
	SD	1.861	1.844	2.263	2.016	

This direct means comparison, while not statistically significant, does show an average trend for the test groups to indicate a higher level of threat perception regarding these crimes than the control. As hypothesized, test groups 2 and 3 indicated that with increased levels of knowledge, subjects were less likely to perpetrate a purse snatching. These results were replicated across all potential demographic groups where there was a trend in the means for the test groups to be lower than the control.

However, further analysis within this group is necessary. Since all respondents received the same questions and each question in this scenario was repeated four times, varying the perception that the victim may be armed and the number of observers in the area, this set of questions can be viewed as a repeated measure test. Therefore, a repeated measure test was performed as seen in Table 10.

Table 10

Estimates of Fixed Effects for Dependent Variable Old\_Lady

Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	4.48	.33	413.61	13.55	.000
Information regarding CWP issuance	-.26	.19	370.82	-1.35	.178
Number of CWPs	-.35	.20	370.70	-1.75	.080
Both Information and Number of CWPs	-.20	.20	370.17	-1.03	.305
No Information	0 <sup>a</sup>	0			
Male	-.41	.15	370.70	-2.79	.006
Female	0 <sup>a</sup>	0			
Gun	-.82	.07	378.22	-11.10	.000
People	-.54	.11	377.51	-4.74	.000
Age_Recoded	.0047	.06	370.23	.074	.941
Education_Recoded	.12	.09	371.30	1.30	.193
Race_recoded	.09	.09	371.83	1.02	.308

<sup>a</sup> This parameter is set to zero because it is redundant.

As can be seen here none of the groups indicate significance at the .05 significance levels when using repeated measures; however, significance is found with the gender classification as well as among those questions that implied the potential presence of a weapon and among those that related to the presence of additional observers. This finding seems to indicate that while the different levels of information for the groups does not reach significant levels, respondents' perceptions of the surroundings in the scenario may have an effect upon their perceived criminal threat perception.

Additionally, while other demographic variables do not statistically impact the responses, gender appears to do so.

**Home invasion.** Two questions measured criminal threat perception regarding home invasion crimes. The difference between these questions deals with the locale of scenario and the likelihood of firearms being present in the home. The responses to these questions can be seen in Table 11.

Table 11

Home Invasion Response Frequencies

		Freq	Percent	
5. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. What would be the likelihood of someone attempting to burglarize the house?	Very unlikely	31	7.3	
	2	42	9.9	
	3	49	11.5	
	4	76	17.8	
	5	105	24.6	
	6	56	13.1	
	Very likely	56	13.1	
	Total*	415	97.4	
	6. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. The house in a rural area where people are known to keep firearms for sporting purposes. What would be the likelihood of someone attempting to burglarize the house?	Very unlikely	76	17.8
		2	86	20.2
3		60	14.1	
4		59	13.8	
5		62	14.6	
6		32	7.5	
Very likely		35	8.2	
Total*		410	96.2	

\*Totals less than 426 indicate respondent refusal to answer question



A look at the percentage distribution of the responses shows a distinct difference between the two questions. The majority of respondents in the first question indicated that the home would likely be broken into; however, the second question, which specified that the home was in a rural environment where homeowners kept firearms for sporting purposes, the opposite was true, indicating that there is generally higher threat perception with regard to burglarizing homes in a rural location.

Next, a group means analysis is insightful, as it can show whether there is a difference in the means of the groups, and if the change is positive or negative (see Table 12). As can be seen here, again, the average means of the test groups, while not statistically significant, are lower than those of the control group. When analyzing all of the demographic subsets, the same direction noted before presented itself. It was again observed that the means of the test group were lower than those of the control groups. Specifically, as hypothesized ( $H_2$  &  $H_3$ ), test groups 2 and 3 evidenced a lower mean, indicating that as knowledge increased, the perceived perception of threat was magnified. This trend is understandable, as the study pertained to the effects of knowledge of CWPs and, thus, would have minimal impact upon threat perception. These are home invasion-related questions, and this type of information is believed less

likely to evidence a difference in means than those pertaining to a direct individual personal contact.

Table 12

Home Invasion Group Means

		No Weapon	Weapon	Average
No Information	<i>n</i>	106	105	
	Mean	4.43	3.51	3.97
	SD	1.735	1.851	
Information regarding CWP issuance	<i>N</i>	101	102	
	Mean	4.43	3.48	3.95
	SD	1.824	1.928	
Number of CWPs	<i>N</i>	105	102	
	Mean	4.28	3.25	3.77
	SD	1.724	1.881	
Both Information and Number of CWPs	<i>N</i>	105	102	
	Mean	4.28	3.25	3.77
	SD	1.724	1.881	
All test groups	<i>N</i>	309	305	
	Mean	4.37	3.42	3.89
	SD	1.758	1.909	

When a Repeated Measures analysis is performed (see Table 13) it is once again observed that although the test groups do not achieve statistical significance, significance is noted with the constructs pertaining to the supposed presence of a weapon. In this scenario there is not the given option for additional bystanders present; thus, there is no possibility for this to be

noted as significant. Gender is again noted as the only demographic variable of statistical significance.

Table 13

Estimates of Fixed Effects for Dependent Variable Home\_Invasion

Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	4.43	.37	377.31	11.94	.000
Information regarding CWP issuance	.06	.22	367.67	.27	.785
Number of CWPs	-.13	.23	366.90	-.58	.563
Both Information and Number of CWPs	.11	.23	367.41	.47	.642
No Information	0 <sup>a</sup>	0			
Male	-.62	.17	367.18	-3.67	.000
Female	0 <sup>a</sup>	0			
Age_Recoded	.03	.07	367.33	.36	.719
Education_Recoded	.06	.11	368.11	.53	.596
Race_recoded	.11	.11	367.06	1.02	.309
Gun	-1.00	.10	372.66	-9.98	.000

<sup>a</sup> This parameter is set to zero because it is redundant.

**Mugging.** There are four questions in this section pertaining to the likelihood of a mugging to occur on a target known to have cash on hand. Each of these situations provides an ideal climate for a mugging where the potential victim is seen withdrawing cash so that he is known to be a viable target. The two differing variables are the number of bystanders and whether the potential victim is perceived to possibly be armed. The

overall responses to these questions can be seen in Table 14 below.

Table 14

Mugging Response Frequencies

		Frequency	Percent
7. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. There is no one nearby; however, there are 5-6 other people in sight. What would be the likelihood of someone attempting to rob him?	Very unlikely	34	8.0
	2	59	13.8
	3	61	14.3
	4	61	14.3
	5	92	21.6
	6	55	12.9
	Very likely	50	11.7
	Total*	412	96.7
8. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one nearby; however, there are 5-6 other people in sight. What would be the likelihood of someone attempting to rob him?	Very unlikely	117	27.5
	2	84	19.7
	3	67	15.7
	4	57	13.4
	5	45	10.6
	6	26	6.1
	Very likely	15	3.5
	Total*	411	96.5
9. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. There is no one else nearby. What would be the likelihood of someone attempting to rob him?	Very unlikely	73	17.1
	2	37	8.7
	3	39	9.2
	4	39	9.2
	5	45	10.6
	6	65	15.3
	Very likely	110	25.8
	Total*	408	95.8
10. It is dusk near an ATM. A middle-aged man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one else nearby. What would be the likelihood of someone attempting to rob him?	Very unlikely	117	27.5
	2	83	19.5
	3	52	12.2
	4	54	12.7
	5	53	12.4
	6	27	6.3
	Very likely	24	5.6
	Total*	410	96.2

\*Totals less than 426 indicate respondent refusal to answer question

For question 7, the responses are fairly evenly distributed, whereas for question 10, which is the same except for additional people in the vicinity, there are more responses in the less likely categories. Question 9 has the largest reported frequency for "very likely," with the inverse true for questions 8 and 10. The main difference between these questions is the belief that the potential victim may be armed. As questions 8 and 10 both indicate, with the perception that the potential victim may be armed it is expected that the highest levels of threat perception would be found with these scenarios.

Next, a group means analysis provides important insight into the directional relationship between the control group and the test groups. This can be seen in Table 15.

Table 15

## Mugging Group Means

		People No Weapon	People Weapon	No People No Weapon	No People Weapon	Average
No Information	<i>n</i>	104	103	102	103	
	Mean	4.15	3.06	4.51	3.3	3.76
	SD	1.778	1.798	2.197	2.019	
Information regarding CWP issuance	<i>N</i>	103	103	103	102	
	Mean	4.17	2.97	4.48	3	3.66
	SD	1.817	1.807	2.283	1.84	
Number of CWPs	<i>N</i>	103	102	101	102	
	Mean	4.19	2.78	4.18	2.81	3.49
	SD	1.879	1.744	2.355	1.876	
Both Information and Number of CWPs	<i>N</i>	103	102	101	102	
	Mean	4.19	2.78	4.18	2.81	3.49
	SD	1.879	1.744	2.355	1.876	
All test groups	<i>N</i>	308	308	306	307	
	Mean	4.18	2.87	4.4	2.96	3.6
	SD	1.829	1.739	2.274	1.824	

The average means of the test groups here are also below that of the control group, even though the .05 significance level is not reached. Specifically, test groups 2 and 3 indicate a lower mean than test group 1, which speaks specifically to the viability of H<sub>2</sub> and H<sub>3</sub>. Therefore, before further analysis is performed for muggings, a relationship appears to be present. Additionally, anecdotal evidence from both handwritten non-codeable notes in the margins of the returned instruments and verbal remarks from respondents leads to the belief that the particular scenario might have deeper ramifications than are

visible on the surface. Several respondents expressed the opinion that as no one was around and the subject was at an ATM, they would be able to approach the subject from behind without his knowledge and accost him. In this case, there would be no possibility of deterrence based on armed response, and the belief that he might be armed actually acted as an incentive, as this would be one more valuable item to steal in the process.

Again, as this can be viewed as measuring the same question among the different groups differing only in the number of observers and the perception of whether the victim is armed; thus, a repeated measure test was performed. See Table 16.

Table 16

Estimates of Fixed Effects for Dependent Variable ATM\_Robbery

Parameter	Est.	Std. Error	df	t	Sig.
Intercept	4.38	.35	399.08	12.68	.000
Information regarding CWP issuance	-.13	.20	367.49	-.66	.512
Number of CWPs	-.28	.21	368.25	-1.37	.172
Both Information and Number of CWPs	-.07	.21	368.03	-.32	.749
No Information	0 <sup>a</sup>	0			
Male	-.31	.15	368.00	-2.02	.044
Female	0 <sup>a</sup>	0			
Age_Recoded	-.04	.07	368.14	-.61	.540
Education_Recoded	.12	.10	367.96	1.19	.235
Race_Recoded	.12	.10	367.97	1.26	.209
Gun	-1.38	.08	374.28	-17.53	.000
Person	-.19	.08	374.48	-2.39	.017

<sup>a</sup> This parameter is set to zero because it is redundant.

Again, Gender is the sole demographic variable to demonstrate significance at the .05 level. Also, while no statistical significance is noted within the test groups, the variables for presence of additional people and the perception of the victim being armed follow the established trend and do indicate significance.

**Robbery.** There are four questions in this section related to the likelihood of an armed robbery occurring in a small convenience store. Each of these scenarios was designed to provide an ideal climate for a crime to occur with variances in the number of people present and whether the clerk was believed to be armed. The responses to these questions can be seen in Table 17.



Table 17

## Robbery Response Frequencies

		Frequency	Percent
	Very unlikely	38	8.9
11. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in line; however, there are 1-2 other people in the back of the store. What would be the likelihood of someone attempting to rob the store?	2	52	12.2
	3	53	12.4
	4	81	19.0
	5	72	16.9
	6	65	15.3
	Very likely	49	11.5
	Total*	410	96.2
	Very unlikely	116	27.2
12. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in line; however, there are 1-2 other people in the back of the store. What would be the likelihood of someone attempting to rob the store?	2	94	22.1
	3	51	12.0
	4	53	12.4
	5	48	11.3
	6	20	4.7
	Very likely	28	6.6
	Total*	410	96.2
	Very unlikely	61	14.3
13. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in the store. What would be the likelihood of someone attempting to rob the store?	2	34	8.0
	3	40	9.4
	4	46	10.8
	5	50	11.7
	6	71	16.7
	Very likely	103	24.2
	Total*	405	95.1
	Very unlikely	99	23.2
14. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in the store. What would be the likelihood of someone attempting to rob the store?	2	74	17.4
	3	64	15.0
	4	56	13.1
	5	53	12.4
	6	30	7.0
	Very likely	30	7.0
	Total*	406	95.3

\*Totals less than 426 indicate respondent refusal to answer question

As can be seen here with questions 12 and 14, the largest number of responses tended to cluster around responses of 1 and 2 on the Likert scale, indicating a low likelihood of the perceived crime happening.

When reviewing the average means of the responses, it appears that the respondents that were provided either second or third interventions (levels of CWP knowledge) were more likely to express a higher level of threat perception regarding committing robbery than the control group that was exposed to no treatment as shown in Table 18.

Table 18

Robbery Group Means

		People No Weapon	People Weapon	No People No Weapon	No People Weapon	Average
No Information	<i>n</i>	103	103	103	104	
	Mean	4.16	3.04	4.75	3.56	3.87
	SD	1.764	1.852	2.099	1.975	
Information regarding CWP issuance	<i>N</i>	102	101	100	100	
	Mean	4.36	3.3	4.47	3.3	3.86
	SD	1.882	1.895	2.176	1.925	
Number of CWPs	<i>N</i>	102	102	101	101	
	Mean	4.15	2.77	4.37	3	3.57
	SD	1.837	1.872	2.217	1.892	
Both Information and Number of CWPs	<i>N</i>	102	102	101	101	
	Mean	4.15	2.77	4.37	3	3.57
	SD	1.837	1.872	2.217	1.892	
All test groups	<i>N</i>	307	307	302	302	
	Mean	4.2	2.97	4.44	3.14	3.69
	SD	1.847	1.879	2.172	1.866	

When analyzing the results of a repeated measures test for the questions relating to the robbery of the convenience store the prior noted trend continues. Again there is no observed significance for any of the test groups; however, the gender demographic and the constructs for the perception of the presence of a weapon and the observation of others in the vicinity all are well below the .05 significance threshold. See Table 19.

Table 19

Estimates of Fixed Effects for Dependent Variable  
Convenience\_Store\_Robbery

Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	4.39	.36	394.04	12.10	.000
Information regarding CWP issuance	-.004	.22	366.17	-.02	.985
Number of CWPs	-.29	.22	365.13	-1.32	.188
Both Information and Number of CWPs	-.18	.22	365.22	-.84	.399
No Information	0 <sup>a</sup>	0			
Male	-.36	.16	365.82	-2.22	.027
Female	0 <sup>a</sup>	0			
Age_Recoded	.02	.07	366.75	.30	.763
Education_Recoded	.09	.10	367.52	.91	.363
Race_recoded	.13	.10	365.44	1.29	.199
Gun	-1.30	.08	372.48	-15.56	.000
People	-.24	.08	369.38	-3.10	.002

<sup>a</sup> This parameter is set to zero because it is redundant.

**Car theft.** The next four questions in this study were designed to measure level of threat perception with regard to car theft with variances in the situation. The variances in the scenario included the number of bystanders and whether the potential victim was likely to be armed. The responses to the questions are seen in Table 20.

Table 20

## Car Theft Response Frequencies

		Frequency	Percent
	Very unlikely	37	8.7
	2	51	12.0
	3	55	12.9
	4	62	14.6
	5	64	15.0
	6	60	14.1
	Very likely	73	17.1
	Total*	402	94.4
15. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. What would be the likelihood of someone attempting to steal the car?	Very unlikely	98	23.0
	2	93	21.8
	3	55	12.9
	4	58	13.6
	5	47	11.0
	6	30	7.0
	Very likely	25	5.9
	Total*	406	95.3
17. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. There are 10 other people shopping at the stand nearby. What would be the likelihood of someone attempting to steal the car?	Very unlikely	64	15.0
	2	70	16.4
	3	51	12.0
	4	63	14.8
	5	59	13.8
	6	56	13.1
	Very likely	42	9.9
	Total*	405	95.1
18. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away and it is noted that there is a bulge under the owner's jacket that looks like a gun. There are 10 other people shopping at the stand nearby. What would be the likelihood of someone attempting to steal the car?	Very unlikely	114	26.8
	2	87	20.4
	3	60	14.1
	4	54	12.7
	5	37	8.7
	6	30	7.0
	Very likely	23	5.4
	Total*	405	95.1

\*Totals less than 426 indicate respondent refusal to answer question.

As can again be seen here with the responses to questions 16 and 18, it appears that the responses among the less likely categories are much higher than in questions 15 and 17. This is a further indication that when a potential victim appears to be armed, it seems to create a higher level of threat perception.

The means did not follow the same trend as the other previous categories of crime examined. This is seen in Table 21.

Table 21

Car Theft Group Means

		No People No Weapon	No People Weapon	People No Weapon	People Weapon	Average
No Information	<i>n</i>	101	103	103	103	
	Mean	4.31	3.05	3.81	3.03	3.55
	SD	1.979	1.833	1.99	1.834	
Information regarding CWP issuance	<i>N</i>	99	99	100	100	
	Mean	4.41	3.13	3.95	3.07	3.64
	SD	1.959	1.899	1.966	1.919	
Number of CWPs	<i>N</i>	102	102	102	102	
	Mean	4.3	3.19	3.72	2.87	3.52
	SD	2.024	1.943	1.937	1.838	
Both Information and Number of CWPs	<i>N</i>	102	102	102	102	
	Mean	4.3	3.19	3.72	2.87	3.52
	SD	2.024	1.943	1.937	1.838	
All test groups	<i>N</i>	301	303	302	302	
	Mean	4.35	3.16	3.78	2.97	3.56
	SD	1.929	1.865	1.951	1.859	

Anecdotal evidence gained at the time of data collection sheds some light on this occurrence. Several respondents

expressed a belief that the person in question would be too far away to effectively react to the car being stolen. The initial rationale for this question being a car theft with the owner nearby, as opposed to a carjacking with the owner in the vehicle, was to alleviate the physical nature of having to pull a resisting person from his or her vehicle. This would make the crime more appealing, especially if the potential criminal was slight of stature and would wish to avoid the physical confrontation required to remove people from their vehicle. However, it appears that in an effort to avoid forcing a physical confrontation between the owner and the criminal, a situation was created that was too appealing, and the threat perception nature of the intervention was mitigated in several of the groups.

To further explore this scenario a repeated measures analysis was performed. See

Table 22.

Table 22

## Estimates of Fixed Effects for Dependent Variable Car\_Theft

Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	3.63	.38	377.38	9.51	.000
Information regarding CWP issuance	.07	.23	361.70	.32	.753
Number of CWPs	-.07	.23	361.32	-.30	.763
Both Information and Number of CWPs	.10	.23	362.12	.41	.680
No Information	0 <sup>a</sup>	0			
Male	-.33	.17	361.60	-1.92	.056
Female	0 <sup>a</sup>	0			
Age_Recoded	.05	.08	361.42	.72	.474
Education_Recoded	.07	.11	361.62	.65	.515
Race_recoded	.31	.11	360.96	2.86	.004
Gun	-1.04	.07	366.96	-14.15	.000
People	-.35	.07	366.06	-5.27	.000

<sup>a</sup> This parameter is set to zero because it is redundant.

This again shows no statistical significance among the test groups. However the prevailing trend for Gender and the constructs for perceived weapon presence and the presence of additional people continue to show significance.

**Rape.** The final four questions in this study involve the likelihood of rape. The differences in these questions are with regard to the location, being either a city or rural park, and whether the potential victim is perceived as likely to be armed. The responses to these questions can be seen in Table 23.



Table 23

## Rape Response Frequencies

		Frequency	Percent
	Very unlikely	34	8.0
19. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted city park that is filled with trees and bushes. What would be the likelihood of someone attempting to sexually assault her?	2	48	11.3
	3	51	12.0
	4	53	12.4
	5	67	15.7
	6	58	13.6
	Very likely	86	20.2
	Total	397	93.2
	Very unlikely	66	15.5
20. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted city park that is filled with trees and bushes. She appears to be walking with her hand in her purse as if she is holding something. What would be the likelihood of someone attempting to sexually assault her?	2	73	17.1
	3	59	13.8
	4	77	18.1
	5	55	12.9
	6	33	7.7
	Very likely	31	7.3
	Total	394	92.5
	Very unlikely	35	8.2
21. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted rural park that is filled with trees and bushes. What would be the likelihood of someone attempting to sexually assault her?	2	46	10.8
	3	56	13.1
	4	54	12.7
	5	67	15.7
	6	56	13.1
	Very likely	80	18.8
	Total	394	92.5
	Very unlikely	69	16.2
22. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted rural park that is filled with trees and bushes. She appears to be walking with her hand in her purse as if she is holding something. What would be the likelihood of someone attempting to sexually assault her?	2	78	18.3
	3	52	12.2
	4	72	16.9
	5	53	12.4
	6	35	8.2
	Very likely	36	8.5
	Total	395	92.7

\*Totals less than 426 indicate respondent refusal to answer question.

Next, a review of the average means of the groups indicate whether the prior noted trend continued. This can be seen in Table 24.

Table 24  
Rape Group Means

		Urban No Weapon	Urban Weapon	Rural No Weapon	Rural Weapon	Average
No Information	<i>N</i>	101	100	100	100	
	Mean	4.5	3.73	4.45	3.66	4.08
	SD	1.942	1.927	1.977	1.876	
Information regarding CWP issuance	<i>N</i>	97	96	96	97	
	Mean	4.52	3.49	4.5	3.58	4.02
	SD	2.016	1.869	1.952	1.898	
Number of CWPs	<i>N</i>	99	98	98	97	
	Mean	4.62	3.38	4.45	3.3	3.94
	SD	2.009	1.738	1.959	1.866	
Both Information and Number of CWPs	<i>N</i>	100	100	100	101	
	Mean	4.31	3.48	4.29	3.59	3.92
	SD	1.911	1.801	1.94	1.95	
All test groups	<i>N</i>	296	294	294	295	
	Mean	4.48	3.45	4.41	3.49	3.96
	SD	1.976	1.798	1.946	1.904	

Here it is again shown that, while not statistically significant, there is still a trend for the average means of the test groups to be lower than that of the control group. However, with question 19, it was noted that there were increases in the means for test groups 1 and 2. Question 20 showed the same with test group 1. This finding would suggest that criminal threat

perception actually decreased when criminals were provided with information regarding CWPs in cases of rape where the woman appears to be unarmed or unprepared. It should be noted that while the average for all test groups was lower than that of the control group, the average was lowest with test group 3. This seems to support the 3rd hypothesis (as knowledge of CWP issuance policies increases AND when informed of the number of CWPs granted, the level of threat perception related to the commission of direct contact crimes will increase), even though it does not reach the .05 level of statistical significance.

Continuing the exploration using a repeated measure analysis, the trend of no significant findings among the test groups continued with statistical significance found for Gender and the construct for whether a weapon was perceived to be present. See Table 25.

Table 25

## Estimates of Fixed Effects for Dependent Variable Rape

Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	5.23	.40	367.82	13.17	.000
Information regarding CWP issuance	-.13	.24	355.93	-.55	.581
Number of CWPs	-.17	.24	356.94	-.71	.481
Both Information and Number of CWPs	-.11	.24	355.97	-.45	.650
No Information	0 <sup>a</sup>	0			
Male	-.70	.18	356.09	-3.91	.000
Female	0 <sup>a</sup>	0			
Age_Recoded	.001	.08	356.33	.01	.989
Education_Recoded	-.11	.11	355.69	-.99	.322
Race_recoded	-.01	.11	355.45	-.10	.921
Gun	-.94	.08	362.67	-11.50	.000
Rural	-.019	.05	360.89	-.36	.721

<sup>a</sup> This parameter is set to zero because it is redundant.

In this instance it is worth noting that the presence of other people was not an available option for this scenario; therefore, a construct including other people is not available. However, there was a secondary variable found among these scenarios which was the difference between a rural or urban park. No statistical significance was found with this construct in this instance. It must be noted that many of the respondents verbally expressed a lack of distinction between the two concepts, which explains the lack of significance noted.

## CHAPTER 5: DISCUSSIONS AND CONCLUSIONS

The heart of this research is grounded in concepts of deterrence theory, which states that as the swiftness, certainty, and celerity of the punishment of a crime increases, the likelihood for an individual to commit crimes will decrease (Wilcox, 2010). The mere perception of both certainty and severity of punishment are inversely related to reports of intentions to commit criminal acts (Pogarsky, 2002). This study applies this concept to potential criminals' knowledge of concealed weapon permits being available to potential victims. According to deterrence theory logic, an individual possessing a CWP resisting the commission of a crime would provide the greatest possible speed and severity of response to the commission of a direct contact crime. By increasing the certainty of the response, by providing information relating to the policy of CWP issuance, the perception of threat relating to the commission of direct contact crimes should increase. Therefore, the deterrent effect should increase; thus, the inclination to commit these crimes should decrease.

The relationship between CWPs and crime, specifically, is a hotly debated topic; however, much of the research here also

focuses on aggregate crime data, and causation is not typically demonstrated (Lott & Mustard, 1997). Measuring the deterrent effect of any policy is inherently difficult for a multitude of reasons; two of these reasons are of direct relevance to this study. First is the fact that while specific deterrence is a model for individual behavior, most crime data are aggregated. This makes it difficult, if not impossible, for crime data to be interpreted as being the result of specific deterrence. Second is the fact that it is difficult to differentiate between correlation and causation in this matter (Wilson & Petersilia, 2004). While it is possible that crime may have decreased following a specific event, it is impossible to attribute the decrease in crime to the event, since the possibility of an external variable cannot be ruled out. In order to fully understand how any events affect specific criminal deterrence, information must be gained on an individual criminal level.

To resolve these noted issues with existing deterrence theory research, this study used a vignette-based approach, similar to research conducted by Nagin and Paternoster (1993), to expand upon the research by Wright and Rossi (2008) in an attempt to understand the individual criminal thought process. The Wright and Rossi (2008) research simply provides dichotomous answers to questions pertaining to whether criminals would commit certain crimes and whether they thought about certain

circumstances beforehand. The present research attempts to build the current knowledge base by expanding this dichotomous response into a seven-point scale to rate the level of threat perception expressed by the respondents based on various levels of provided knowledge of CWP issuance. This breakdown could provide a greater understanding of the *degree* to which an individual may be deterred from committing a direct contact crime. By understanding the degree to which threat perception exists one may determine the benefit that may be derived from public information campaigns designed to reduce criminal inclination.

The hypotheses for this research stated that as the knowledge relating to CWPs increases among three varying levels, the criminal threat perception relating to the commission of direct contact crimes will increase.

This chapter reviews the findings of the research, the policy implications, the limitations noted within the study, and potential directions for future research.

#### Relationship to Threat Perception

There was no statistically significant difference noted between the control and the test groups, with only a few noted exceptions, which are expected statistically. Using Fisher's criterion, there is an anticipated 5% chance of false positives

(Field, 2011), which is relatively accurate for the findings in this study when specific analysis was conducted limiting the analysis to only specific demographic variables to the exclusion of all other data. These few analyses were specifically limited and found only in rare instances, within the expectation of false positive findings. Therefore, we are unable to reject the first three null hypotheses at this time. However, there was a prevailing trend for the means of the test groups to be lower than those of the control group, albeit not breaching the standard .05 significance level. Due to the exploratory nature of this data these results are of value in that they contribute to the necessity of continuing exploration and future research in this field.

It should be noted that across all crime types, the average difference in the means between the control group and test groups 2 and 3, which received information regarding the number of permits issued and the number of permits issued and information regarding permit issuance requirements, respectively, was substantially larger than the difference between the control and test group 1, which received information only regarding permit issuance requirements. This indicates that, while we were unable to reject any of the null hypotheses, H<sub>2</sub> demonstrated a greater general potential for future research. It appears that no great threat perception effect was created by



the presence of simple information regarding the issuance of CWPs. Yet, information that includes numbers that indicate the prevalence of these permits in the hypothetical situational environments provided shows greater promise.

The largest difference in the means was almost universally found with those respondents receiving information regarding the number of CWPs issued. As the intervention in test group 3 included the information from test group 2 (number of permits issued), it would make sense that there would be comparable results. However, as test group 3 often indicated a lesser degree of threat perception regarding the commission of crimes than test group 2, there are two potential interpretations for this phenomenon. The first is that the addition of information regarding CWP issuance (test group 1) to the number of permits issued (test group 2) for the intervention in test group 3 created an information overload for the respondents, and the data were not fully assimilated into the decision-making thought process. The other possibility is that something in the information from test group 1 detracts from, or dilutes, the effect observed in test group 2, which would explain the lesser impact of test group 3. Future researchers may wish to explore the differences in the details of the information presented between these groups to determine the extent of this phenomenon. By understanding exactly how the wording of the intervention

methods affect criminal threat perception, a more ideal message can be drafted for use in public information campaigns for crime reduction purposes.

An additional minor point of interest is found within the demographics, when the data were filtered to exclude all respondents not in a particular category, which approached the .05 threshold for significance among the various crime categories. There were three specific demographics (high school or less education, and both black and other in the race demographic) which were encountered the majority of the time, indicating that these groups tend to respond to the treatment greater than others. Lower levels of education demonstrated the greatest perception of threat in the cases of rape, mugging, and purse snatching when provided with the intervention. It has been noted previously that those with lower levels of education are more likely to commit crimes (Lochner & Moretti, 2004). Therefore, these findings make sense: When education is increased, even within the limited scope of the information related to the intervention in this study, the threat perception towards the commission of crime increases. As more information is gained regarding this interaction and these groups, a public information campaign could potentially target these groups to increase criminal threat perception in these instances.

Public information campaigns are most effective when properly focused on the desired target audience (Weiss & Tschirhart, 1994). This information is specifically viable in the cases of the lower education demographics. If information regarding the number of concealed weapon permits in existence could be included within the curriculum for public education at the high school, or lower, levels, the threat perception relating to committing these crimes could be increased for this demographic.

However, when this analysis was performed it limited the size of the sample to the point where the viability of such results become highly questionable. Therefore, while this is an interesting side note of this research it is not a substantial finding on its own. This research indicates a need for additional study along these demographic lines to further clarify the ideal audiences who would experience the greatest crime reduction benefit.

Conversely, the fourth and fifth hypotheses both indicated statistical significance. When the presence of additional bystanders were indicated this demonstrated an increased threat perception relating to the crime. This can be interpreted in two distinct ways. One interpretation of this could indicate that the presence of additional potential witnesses would increase the likelihood of apprehension; thus, the risk of committing the

crime could begin to outweigh the potential reward. The other explanation for this occurrence, which is more relevant to this study, would be that with the knowledge of CWPs the additional individuals in the area present an increased chance that one of them will possess a weapon and potentially provide resistance to the crime. While the result of increased threat perception is the same in either instance, it is the reasoning behind this action that is of value here. This is where further research would be most beneficial.

The fifth hypothesis, which dealt with the perception that the intended victim may be armed, also demonstrated statistical significance. This was noted throughout the study as, notably, the greatest estimated change identified for all of the potential hypotheses. In fact, this change was between 3 and 6 times as great as other factors analyzed. This has certain implications which warrant further attention. While this is, potentially, the strongest threat that a criminal could perceive, it is also one of the most immediate. This could, possibly, indicate that the immediately perceived visible threat has a far greater effect on the criminal thought process than information provided in advance of an action.

While it is understandable that the perception that a victim may be armed increases threat perception with regard to committing a crime, there exist greater ramifications within the

context of this study. Many of the respondents in this study had mentioned that many criminals are themselves armed. Thus the perception of this armed victim could have differing implications between the test and control groups. It is possible that those in the control group, with no knowledge of concealed weapon permits, would perceive the intended armed victim as another criminal due to the fact that he or she was armed. However, those respondents who received the information relating to CWPs may perceive that the intended victim is, by definition, an educated law-abiding citizen. This could, potentially, alter their responses as they may be making their decision to commit, or not commit, a crime based on their perception of the victim's law-abiding status. Another criminal could potentially be expected to be less likely to report a crime for fear that doing so would implicate him or her in a crime for illegally carrying a weapon. However, subjects could also have the belief that a criminal would be more likely than the law-abiding individual to use the weapon. This additional aspect of the equation deserves much further research.

### Policy Implications

The policy implications of these findings, as related to knowledge of CWP issuance, are uncertain because of the lack of statistical significance evidenced. However, the prevailing

trend in the means for the test groups to be lower than that of the control group indicates that further research in this field could be beneficial. Specifically, the note that those who were informed of the number of CWPs issued consistently demonstrated the lowest means of the groups indicates that further research should be directed here. If future research supports claims made here and the findings of this exploratory research endeavor, then public information campaigns, specifically focusing on the number of CWPs, could prove highly beneficial to society as a cost effective method of crime reduction.

However, it was also noted that the constructs which specifically focused on the bystanders in the area as well as the perception of whether the intended victim was armed showed a strong significance within this study. This significance could imply multiple factors that could have vast ramifications for future policy. While public policy to increase bystanders in crime areas is not a viable alternative, further study could uncover useful approaches. The most intriguing point to note is that when the perception that the intended victim may be armed existed, the likelihood that the crime would be committed decreased. While this is an example of specific, as opposed to general, deterrence, which is one of the prime arguments in favor of concealed weapon permit issuance, this specific piece

of information still has strong significance as it relates to potential public policy.

Two arguments can be made here for separate policies which could prove beneficial. The first is that if public knowledge of concealed weapon permits were to increase, the perception that an intended victim may be armed could increase, causing a degree of specific—if possibly unwarranted—deterrence. For example, take the case of a gentleman walking down the street who has a noted bulge under his jacket. While this bulge could be anything, such as a harmless package in his inside jacket pocket, if knowledge of CWPs is increased the perception that it may be a weapon could also increase. Thus, the likelihood of a crime being committed against this individual would decrease even if a weapon were not present. This could be argued as a shift in the type of deterrence from specific to general, for this instance, based solely on the existence of this knowledge. The second argument would be beyond the scope of the concealed weapon debate. Many have argued for the adoption of open carry laws, in addition to concealed weapon permits. This research seems to support the assumption that if the victim was perceived to be armed, the likelihood of a crime being committed against this victim may be lower than if the victim were observed to be unarmed. Therefore, based on this assumption, the adoption of open carry laws could definitively demonstrate whether a victim

was armed, thus averting the potential crime. While this is a specific deterrent, it likely would not detract from the potential general deterrence of CWP issuance noted in the prior scenario as long as the information about CWPs was made known as well.

#### Limitations of Research

The primary limitation of this research is a history threat to internal validity. This issue is notably not uncommon in field research due to external situations (Gliner & Morgan, 2000) At the time that the instrument was administered, the publicity regarding the Trayvon Martin and George Zimmerman case was at a peak. This was a case that involved an individual with a CWP shooting another individual during an altercation. This was an exceedingly public event which took place in the area in which the study was performed. As such, it was the most popular story on the news for several months. The news is one of the primary television programs that the residents of the research facility watch on a daily basis. Information regarding this case was actually on the television in several of the dormitories while the test was being administered. Therefore, it is reasonable to assume that information regarding the prevalence of CWPs was fairly common among the sample.



With this information being so publicized, it likely negated the validity of the control group, as they would have been presented with much of the same information regarding CWPs as the test groups. As was noted previously, 83.3% of the respondents reported that they believed more than 5% of the population possessed a CWP. This could offer an explanation for the lack of statistical significance in the difference between the test groups and the control group. However, each of the test groups received more specific information, either requirements for obtaining a CWP, the number of permits that have been issued, or information on both requirements and numbers. This additional information could then be used in the decision-making process, which might account for the trend in the means for the test groups having been lower than that of the control group, which did not receive this additional information.

However, it needs to be noted that only the control group was asked about their belief regarding the prevalence of CWPs as the test groups all received this information in the form of the instrument. Therefore, we are unable to compare the level of this knowledge between the groups. It is possible that the control group believed this number to be higher than the test groups. If this is the case than potentially the intervention itself, which is intended to educate the participants about the presence of CWPs, actually informed the respondents that they

are less prevalent than some believed. The lack of comparability between these groups in this manor is a distinct vulnerability of this study.

The pilot study conducted at the Volusia County Jail, which provided some valuable insight into the vignette instrument's strengths and the likely operation of the sampling and testing process, was also limited by flaws when relating the instrument to the Orange County facility. Primarily among these was the lack of female representation which was not available at Volusia. This is a very distinct difference from the Orange County study. Additionally, at Volusia there was no expressed inability to interpret or read the survey instrument. This creates a series of false assumptions relating to the Orange County facility which caused difficulties later in the study.

This research was conducted entirely within a single facility located in Central Florida with only 426 total respondents. It was believed that this population and sample size were indicative of the general criminal population. However, a larger sample size, drawn from facilities from other regions, which may have been less exposed to regional news of this nature, may have evidenced a stronger response to the instrument.

Another noted weakness in this research endeavor was a decided lack of power in the research. A primary component of

this issue stems from the sample size. A larger sample may, potentially, have increased the power of the analysis (Gliner & Morgan, 2000). Also, due to the small sample size the individual groups within the sample do not have enough participants to allow for viable testing of interaction between the groups on any justifiable statistical basis. A larger sample would likely increase the size of the groups which would allow for further analysis to determine further interactions.

A potential issue of concern was noted with the unit of measurement employed by the instrument. A seven point Likert scale was utilized to measure the responses of the participants to the various vignettes with 1 being the least likely and 7 being the most likely. On a scale of this nature 4 is the natural center. While it is not labeled as such it would seem to indicate a realm of lack of opinion, or neither likely or unlikely. What is of specific concern is that the mean responses for all of the groups, with only a few minor variances tended to hover around the area of 3.5-4. This seems to indicate a distinct lack of variance between the groups. However, with the mean responses so close to the neutral area it further indicates that much of the data could be interpreted as merely a neutral finding. This could indicate a true neutral response, which could be indicative of the participants indicating that they do not know the proper response, or this could be simply a method

of providing a non-answer (Fowler, 2009). While this is in itself a point of interest it is difficult to judge if this is a true response stemming from lack of variation or simply a lack of true direction in the responses overall. When all other concerns are addressed for future research this issue may tend to show stronger variance.

Additionally, due to the preliminary nature of this research, there was a noted issue with the wording of the questions. The first of these occurred in the demographic questions. When the respondents were asked whether they had ever encountered an armed victim, many participants verbally indicated that they encountered another armed criminal. While it is difficult to ascertain an actual number of criminals possessing firearms, anecdotal evidence gained at the time of the study indicated that it was a large number. As the purpose of this research was to determine the relationship of criminal threat perception as it relates to inclination to information regarding law-abiding citizens with CWPs, the thought of other armed criminals could potentially skew the responses. This misinterpretation of the meaning of the question could have led the control group to indicate a lower inclination to commit crimes based on this factor. In this instance, it could have resulted in a lesser difference in the means between the test and control groups.

The other issue was potentially a case where in attempting to provide ideal circumstances for a crime to occur, the targets became too tempting. In the case of the car theft scenario, it was expressed by several respondents that the owner of the vehicle was too far away and they would be able to steal the vehicle before the owner would be aware of it happening. This possibility reduces the concern that a criminal may have regarding a potentially armed victim, thus negating a measurement of threat perception. Likewise, the robbery scenario at the ATM had respondents expressing similar sentiments, as they would be approaching the unaware victim from behind and, thus, the victim would be caught unaware and with the speed in which the crime could occur the potential presence of a weapon would not be a factor as the victim would not have the time to use it.

This is not an unexpected finding. It was noted by Lott and Mustard (1997, p. 64) that as CWPs issuance increased, there were occasionally "increases in property crimes involving stealth and where the probability of contact between criminal and victim is minimal." By providing a situation where it was believed that minimal contact with the victim would be encountered, the theoretical concept of threat perception related to the prevalence CWPs would be negated. Any future research would need to compensate for these issues.

Further issues that limited this research draws attention to the sampling methodology employed herein. The first of these was the different response rates of males and females. It was noted by several of the Correctional Officers that the likely reason for the higher female response rate was due to the fact that the researcher was male. If a female researcher had been present it is probable that the male response rate would have been higher. Unfortunately, due to facility requirements having additional researchers present was not feasible. Due to the fact that females tended to express a higher perception of threat this differential response rate could have vast impact upon the findings.

Additionally, as the survey was only provided in an English written format those within the population who had difficulties reading, or who only spoke a foreign language, were unintentionally excluded from the study. While the self-identified Hispanic respondents in this study comprise a similar percentage as the facility it cannot be determined what effect this may have had upon the responses.

Due to the wording of the vignettes the actual responses were a measurement of criminal threat perception and not inclination to commit direct contact crimes. It has been identified that there is a distinct and direct link between the two concepts (Jensen et al., 1978). Therefore, criminal threat

perception relating to the commission of direct contact crimes is useful only as a predictor variable for criminal inclination. It has also been demonstrated that the use of vignettes is often useful in obtaining more honest responses than direct questioning (Nagin & Paternoster, 1993; Wright et al., 2004). However, future research should endeavor to provide a more direct method of ascertaining a direct measure of criminal inclination.

It was further noted that there was an unacceptable level of ambiguity in the wording of the vignettes. This was found primordially in two aspects of each question. The first of these was related to the number of people present in each scenario and the clarification of their roles. While the intention of the survey was to note third party presence as potential additional actors who may possess a CWP it was noted that this presence may have been misinterpreted. As the presence of these people was not expressly identified it could be interpreted as these individuals being potential criminals and, thus, the larger presence could be taken as an increase in the likelihood of a crime occurring. The second issue with the question wording was the fact that it was not specified that the scenario was judged on the likelihood of someone inclined towards committing that specific type of crime being the perpetrator. By not having this

clearly defined set of roles within the scenario it is difficult to ascertain in what way the participants were responding.

Related to the wording is the fact that all of the questions were provided in the same order to all of the participants. There is the potential that the order of the questions led the respondent to their answer. Therefore their understanding of one question may have unintentionally influenced their response to the next. This effect is primarily noted in telephone and personal interviews where the questions are only provided in one order and generally not as much a concern in self-administered survey conditions where the participant has the ability to look at future questions before they provide any responses. (Schwarz, & Hippler, 1995) However, due to the exploratory nature of this research any question of this potential drawback should be noted.

Finally, due to concerns regarding respondent privacy, information regarding the specific criminal backgrounds of the respondents was not obtained. Due to the fact that this was a study involving a protected class of participants (inmates) and the study involved deception (participants were not informed about the purpose of the study until after it was completed, as this could have affected some of the responses) the facility requested that we not collect any personally identifiable information. Unfortunately this included specific information



regarding criminal background. Therefore, it is difficult to determine the proclivities of the respondents in this study. There is a likelihood of under-, or over-, reporting of threat perception within this study, since it is unknown whether the participants were naturally inclined towards the crime types given in the vignettes. If an individual were not inclined to commit a specific type of crime before the intervention is administered there is no possibility that an intervention would be able to lower any inclination. Therefore we are unable to determine what actual effect, if any, the intervention may have had as a result of varying criminal background predictors. Any future research would be well advised to account for this phenomenon to determine whether a particular group with a specific natural inclination was affected by information of this nature.

#### Conclusions and Future Research

This study extends the research of Wright and Rossi (2008) by examining the varying levels of knowledge pertaining to concealed weapon permits as it relates to threat perception. While results across study groups did not allow for the rejection of the null hypothesis of no difference between the control group and three unique experimental groups, the comparison of means indicated a trend in agreement with the

hypothesis that as knowledge regarding the number of CWPs increased the threat perception relating to the commission of direct contact crimes would increase. Couple the observed trend in the means with the fact that there was an identified history threat and the fact that the sample was limited in size and scope (i.e., coming from only the available inmates from one facility), there is a very real possibility that the actual effect of the intervention was not observed to its full extent. In order to gain a firmer understanding of the potential for the relationship between the knowledge of CWP issuance and the level of threat perception as it relates to inclination to commit direct contact crimes, further research is warranted.

It must be noted that this research, being exploratory in nature, strove to examine the interaction effects relating to the perception of legal possession of a concealed weapon as well as time, surroundings, perception of the victim, and location. However, the limited sample size as noted in the research literature (Blalock, 1972) hindered the ability to perform these examinations with a desired level of power. A larger sample size in future research should, hopefully, provide greater variance in the responses and make these analyses viable. The multiple scenarios each indicated specific circumstances under which the potential crime could occur, such as time of day, remoteness of environment, and number of bystanders. Greater exploration of

these relationships could lead to a more refined instrument, which may provide further insight into the criminal decision-making process. Future research should review the present research with an environmental criminological lens to further explore this phenomenon.

Future research should focus on rectifying the issues brought to light by this study. First, and foremost, the instrument needs to be more clearly defined. As can be seen in Appendix Table 31 the revised vignettes offer a more conceptually clear set of questions designed to remove the ambiguity. The roles of the people have been more clearly defined. All of the 3<sup>rd</sup> parties listed in each vignette have been reclassified as innocent bystanders. This ensures that the respondent understands that these people listed in each vignette are not potential criminals. However, focus should be made on the fact that these individuals are innocent bystanders and attempt to avoid mentioning possible additional factors. If the individuals were, for instance, listed as potential witnesses this would introduce an additional factor into the calculation which may further increase the scope of the research. This could lead the respondent to be focusing on the possibility of criminal prosecution and not the threat of a resisting victim, or a bystander coming to the victim's aid. Additionally, the potential criminal in each scenario has been defined as a

criminal with a history of perpetrating that specific type of crime.

Some of the questions themselves should additionally be modified in an attempt to reduce ambiguity. It was noted that the scenario regarding rape was misunderstood with regards to the setting of an urban versus rural park. As the concept of this scenario most frequently involves an isolated location, in order to provide the optimum environment for this crime to occur, focusing on the urban or rural location only serves to confuse the respondent. Therefore, it would be better to simplify the question and limit the specifics of the location to only "large deserted park" and remove the urban or rural references.

Future research should continue to place the scenarios in the evening as the research dictates that the majority of crimes occur at this time (Justice Research and Statistics Association, n.d.) and, thus, this creates an ideal setting for the crime to occur. However, it has been noted that the wording of the question relating to home invasion was not appropriate. In pilot studies with the Volusia County Jail it was indicated that the word "burglary" was more understood by the respondents than the phrase "invade the home". This wording has since been noted to be an incorrect representation of the criminal act in question. In order for the concept of encountering a potentially armed

victim to be in the mental calculation of the respondent the presence of the occupants of the dwelling must be stipulated. This presence, with the inclusion of violent intent, alters the nature of the crime by definition. Therefore, while the word burglary may have been more understood by the participants in the pilot study, for the sake of accuracy, it should be reworded to home invasion to more accurately grasp the intended nature of the vignette and the concept of interest to this research.

It is also necessary to obtain proper criminal background information on the respondents to determine if the types of crimes being committed in the vignettes are something with which they may be deterred from. Only if an individual were inclined towards a specific type of crime could they potentially be deterred from committing such in the future. If one were not inclined towards a specific criminal act any reporting of lesser levels of inclination would simply be a natural disinclination and not a measure of reduced likelihood of committing the crime of interest. In this manner one could hope to be able to obtain a better measure of deterrence than simple threat perception. In addition to basic criminal history the questions regarding personal background should also be reworded to provide better clarity. Violent criminal background would be better rephrased as "Have you ever been the perpetrator of a violent crime?" In this manner it would be obvious that the purpose of the question

is to determine criminal history and not potential victimization. This should help determine the history of the respondent in an effort to understand if violent crime is something which they are inclined towards. By understanding their prior inclination, only then, can one determine the potential of their possibility for deterrence. Also, when determining if the participants had encountered an armed victim in their prior criminal endeavors this question should also be rephrased. "While committing a crime have you ever encountered an innocent victim who was legally carrying a weapon at the time?" By rephrasing this question in this manner it eliminates the possible interpretation of a respondent construing this question as a criminal act being perpetrated against another criminal or someone carrying a weapon illegally. While, admittedly, this is a triple barreled question the purpose of such is to determine the history effect of the individual respondent. Ideally, the goal of this question is to be utilized as a variable, in addition to the independent variables of if innocent bystanders are in the vicinity and if the perception exists that a weapon is present. The only purpose of this question is to determine those who have a history of criminal encounters with legally resisting victims. Unfortunately, one cannot ask if a respondent has encountered an individual with a concealed weapon permit as, unless they relieved the individual

of their wallet and discovered such, they would have no way of ascertaining if this was the case. Thus, the closest way this can be ascertained may well be this indirect method. If a respondent has never committed a direct contact crime this would then be answered as a negative. Additionally, if the individual only committed crimes against other criminals this would also be a negative response. While it is understandably difficult to ascertain if the victim in this scenario was carrying a weapon legally it can be left to the respondent to determine the relevance of that stipulation. If the potential victim reacts to the criminal encounter by resisting with an illegal weapon (i.e. a sawed-off shotgun) this would logically also be a negative response. It is the nexus of these three positive responses which is of interest for this research. By gaining an understanding of those individuals in the sample who have come into contact with a legally resisting victim in their prior criminal endeavors this will potentially aid in the analysis of how experience encountering concealed weapon permit holders affect their analysis of risk. By providing a "Not Applicable" answer in addition to the "Yes" and "No" options this could account for those individuals who have not been in this particular situation.

An alternative solution to this particular issue of determining prior experience would be to split this question

into three separate questions. This method would, in addition to gaining the information related to the particular prior experience noted above would, additionally, acquire further information about the respondent's criminal history from their personal perspective. This would entail splitting the question into three individual questions with the second two questions contingent upon the answer of the first. For example, the first question would be "Have you ever committed a direct contact crime against an innocent or non-criminal victim?" This would determine the first portion of the original question. There would then be two subsequent questions which would relate to this question. For each of the next two questions an answer of "not applicable" should be made available for those cases where the response to the first question is a negative. The second question would state "If you answered yes to the question above was the intended victim armed with a weapon?" The third question would then follow "If you answered yes to the question above do you believe the intended victim was legally carrying the weapon?" While this method may be longer it may be more easily understood by the participants and will provide more potential data. These questions should be asked at the end of the instrument, in all groups, to avoid influencing the responses.

The new instrument should be available in multiple languages and formats. By having the instrument available in



multiple available languages this should help reduce the exclusion of potential participants who may have difficulty reading and writing in English. Also, by including version of a multimedia method as well as the written format, when necessary, this aids in negating the exclusion of those who have difficulties with literacy.

There should also be greater effort put into randomization to avoid selection bias. Instead of simply providing the questionnaires and having the respondents self-select which test or control group they complete a better method would ensure that the surveys are randomized in the order that they are provided. This will ensure that a certain group of respondents does not self-select to all complete one version. In addition to randomizing the groups it is advisable to randomize the order of the questions on each survey. This will aid in ensuring that prior questions have less possible effect on future responses.

Timing of the study should also be a consideration. When the sample population is provided the instrument in a large group setting, such as the common areas of the facility, there are observed respondents sharing information and "helping" each other complete the surveys. While providing the instrument in multiple languages and formats should, hopefully, mitigate the need for assistance there is still the issue with social desirability which is inherent in survey research. (Cook, Ludwig

& Hemenway, 1997; Smith, 1997; Kleck and Gertz, 1995) By providing the instrument in their individual cells in the evening as opposed to in the common areas it may, hopefully, reduce their interaction with other individuals while they are completing the survey. By allowing the respondents a modicum of privacy it is hoped that this factor could also be limited. In addition, as this would take place in their cells and not in the common areas it may assist in mitigating the male/female differential response rate as the participants would not need to come out and interact with the researcher.

Additionally, the size and scope of the survey should be expanded. By limiting the survey to only one jail it limits the potential pool of respondents. If future research were to expand to a greater number of facilities, and ideally, to multiple states the validity of the research would be greatly increased. The greater sample size would greatly increase the power of the study. This would also, through the various demographic differences of the locations, increase the diversity of the study which would allow for further analysis of the different categories of respondents within the study. This would also increase external validity as the participants would be better representative of a larger region of the country.

One final note on future research. A secondary interview conducted after the conclusion of the survey would be of great

importance. This would help to gain insight into the further workings of the minds of those who participated. While much anecdotal evidence was noted in this study, due to time constraints and limitations of the facility, the majority of this was not able to be documented. It may be beneficial to provide a couple of lines after each question and encouraging the participants to include any personal notes that they may have about the question. By utilizing either focus groups or performing personal interviews the respondent's greater understanding of the meaning of the questions and the purposes for their answers may be accomplished. This documentation of qualitative data would have been quite beneficial in further refining the study methodology and designing future research.

This research has identified an area of research which deserves further analysis. Being exploratory in nature many points were identified, both positive and negative, which may be of assistance in guiding future exploration of this topic. Future analysis along these lines and noting the issues identified here could well aid in understanding the criminal decision making process and, thus, provide insight on how to reduce criminal inclination.

## APPENDIX A: TABLES

Table 26

### Research Questions

- 
1. Will a criminal's awareness of the state's laws concerning the issuance of concealed weapon permits influence perception of the threat involved in the commission of direct contact crimes?
- 
2. Will a criminal's awareness of the number of law abiding citizens within a given state legally carrying concealed weapons influence perception of the threat involved in the commission of direct contact crimes?
- 
3. To what degree will their knowledge of the issuance of CWPs and their awareness of the number of law abiding citizens within a given state with concealed weapon permits influence their perception of the threat involved in the commission of a direct contact crime?
- 
4. Will the proximity of innocent bystanders to the victim influence the perception of the threat involved in the commission of direct contact crimes?
- 
5. Will the perception that the victim is potentially armed influence the perception of the threat involved in the commission of direct contact crimes?
-

Table 27

## List of Dependent Variables and Measurement Coding

Variable - Dependent	Type	Measurement code
1. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There are approximately 15 people within sight. What would be the likelihood of someone attempting to take her purse?	Ordinal	1-7
2. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There are approximately 15 people within sight. What would be the likelihood of someone attempting to take her purse?	Ordinal	1-7
3. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There is no one else within sight. What would be the likelihood of someone attempting to take her purse?	Ordinal	1-7
4. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There is no one else within sight. What would be the likelihood of someone attempting to take her purse?	Ordinal	1-7
5. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. What would be the likelihood of someone attempting to burglarize the house?	Ordinal	1-7
6. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. The house is in a rural area where people are known to keep firearms for sporting purposes. What would be the likelihood of someone attempting to burglarize the house?	Ordinal	1-7
7. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. There is no one nearby; however, there are 5-6 other people in sight. What would be the likelihood of someone attempting to rob him?	Ordinal	1-7
8. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one nearby; however, there are 5-6 other people in sight. What would be the likelihood of someone attempting to rob him?	Ordinal	1-7

Variable - Dependent	Type	Measurement code
9. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. There is no one else nearby. What would be the likelihood of someone attempting to rob him?	Ordinal	1-7
10. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one else nearby. What would be the likelihood of someone attempting to rob him?	Ordinal	1-7
11. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in line; however, there are 1-2 other people in the back of the store. What would be the likelihood of someone attempting to rob the store?	Ordinal	1-7
12. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in line; however, there are 1-2 other people in the back of the store. What would be the likelihood of someone attempting to rob the store?	Ordinal	1-7
13. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in the store. What would be the likelihood of someone attempting to rob the store?	Ordinal	1-7
14. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in the store. What would be the likelihood of someone attempting to rob the store?	Ordinal	1-7
15. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. What would be the likelihood of someone attempting to steal the car?	Ordinal	1-7
16. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away and it is noted that there is a bulge under the owner's jacket that looks like a gun. What would be the likelihood of someone attempting to steal the car?	Ordinal	1-7
17. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. There are 10 other people shopping at the stand nearby. What would be the likelihood of someone attempting to steal the car?	Ordinal	1-7

Variable - Dependent	Type	Measurement code
18. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away and it is noted that there is a bulge under the owner's jacket that looks like a gun. There are 10 other people shopping at the stand nearby. What would be the likelihood of someone attempting to steal the car?	Ordinal	1-7
19. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted city park that is filled with trees and bushes. What would be the likelihood of someone attempting to sexually assault her?	Ordinal	1-7
20. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted city park that is filled with trees and bushes. She appears to be walking with her hand in her purse as if she is holding something. What would be the likelihood of someone attempting to sexually assault her?	Ordinal	1-7
21. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted rural park that is filled with trees and bushes. What would be the likelihood of someone attempting to sexually assault her?	Ordinal	1-7
22. It is evening and an attractive female wearing revealing clothing is walking by herself along a pathway in a large deserted rural park that is filled with trees and bushes. She appears to be walking with her hand in her purse as if she is holding something. What would be the likelihood of someone attempting to sexually assault her?	Ordinal	1-7

Table 28

## List of Independent Variables and Measurement Coding

(Demographics)

Variable - Independent Demographic	Type	Measurement code
Level of education	Ordinal	1 = Less than high school 2 = High school diploma/GED 3 = Some college 4 = Associates degree 5 = Bachelor's degree 6 = Graduate degree 7 = Trade school degree
Age level	Ordinal	1 = 18-25 2 = 26-35 3 = 36-45 4 = 46-55 5 = 56-65 6 = 66+
Race	Ordinal	1 = White 2 = Black 3 = Asian 4 = Native American 5 = Other
Ethnicity	Nominal	1 = Hispanic origin 2 = Non-Hispanic origin
Gender	Nominal	1 = Male 2 = Female



Table 29

## List of Independent Variables and Measurement Coding (History)

Variable - Independent Knowledge level	Type	Measurement code
Has anyone you personally know encountered an armed victim before?	Nominal	1 = Yes 2 = No
What would you estimate is the percentage of people legally carrying firearms?	Ordinal	1 = 1-10% 2 = 11-20% 3 = 21-30% 4 = 31-40% 5 = 41-50% 6 = 51-60% 7 = 61-70% 8 = 71-80% 9 = 81-90% 10 = 91-100%
Have you ever been involved in a violent crime?	Nominal	1 = Yes 2 = No

Table 30

## Test of Homogeneity of Variances

	Levine Statistic	<i>df1</i>	<i>df2</i>	Sig.
Question 1	.102	3	413	.959
Question 2	1.127	3	414	.338
Question 3	1.027	3	413	.380
Question 4	.485	3	413	.693
Question 5	.207	3	411	.891
Question 6	.213	3	406	.887
Question 7	.241	3	408	.868
Question 8	.234	3	407	.873
Question 9	.533	3	404	.660
Question 10	1.962	3	406	.119
Question 11	.494	3	406	.686
Question 12	.096	3	406	.962
Question 13	.345	3	401	.793
Question 14	.616	3	402	.605
Question 15	.660	3	398	.577
Question 16	.625	3	402	.599
Question 17	.019	3	401	.996
Question 18	.333	3	401	.802
Question 19	.097	3	393	.961
Question 20	.548	3	390	.650
Question 21	.088	3	390	.967
Question 22	.354	3	391	.787

Table 31

Revised instrument

The purpose of this study is gain an understanding of the likelihood that individuals would commit crimes under different circumstances. Therefore, your participation is requested to complete a brief survey that looks at how likely people are to commit crimes in certain situations. Your participation is completely voluntary. All information collected for this survey is completely anonymous. Your input is greatly appreciated and important for future research.

If you have any concerns regarding this study you can contact the Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (C) (407) 823-2901.

**Demographic information:**

**Level of education: (circle one)**

Less than high school      High school diploma or GED      Some college      Associates degree

Bachelor's degree      Graduate school degree      Trade school degree

**Age level: (circle one)**

18-24      25-34      35-44      45-54      55-64      65+

**Race: (circle one)**

Asian      American Indian or Alaska Native      Black or African American

White or Caucasian      Native Hawaiian or Other Pacific Islander      Multiple/Mixed      Other

**Ethnicity: (circle one)**

Hispanic      Non-Hispanic

**Gender: (circle one)**

Male      Female

Below are several scenarios describing a variety of situations. Please circle the appropriate response.

1. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There are approximately 15 innocent bystanders within sight. What would be the likelihood of an offender with a history of purse snatching offences attempting to take her purse?

Very Unlikely  
1                    2                    3                    4                    5                    6                    7                    Very Likely

2. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There are approximately 15 innocent bystanders within sight. What would be the likelihood of an offender with a history of purse snatching offences attempting to take her purse?

Very Unlikely  
1                    2                    3                    4                    5                    6                    7                    Very Likely

3. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse. There is no one else within sight. What would be the likelihood of an offender with a history of purse snatching offences attempting to take her purse?

Very Unlikely  
1                    2                    3                    4                    5                    6                    7                    Very Likely

4. The situation is a semi-deserted alley in the evening. An older lady is slowly walking down the alley carrying a large purse which looks like it might contain a gun. There is no one else within sight. What would be the likelihood of an offender with a history of purse snatching offences attempting to take her purse?

Very Unlikely  
1                    2                    3                    4                    5                    6                    7                    Very Likely

5. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. What would be the likelihood of a home invasion occurring by someone with a history of home invasion offences?

Very Unlikely  
1                    2                    3                    4                    5                    6                    7                    Very Likely

6. It is nighttime and all of the occupants of an expensive house are asleep. There appears to be little in the way of security for the house. The house is in a rural area where people are known to keep firearms for sporting purposes. What would be the likelihood of a home invasion occurring by someone with a history of home invasion offences?

Very Unlikely  
 1                    2                    3                    4                    5                    6                    7  
 Very Likely

7. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. There is no one nearby; however, there are 5-6 innocent bystanders in sight. What would be the likelihood of an offender with a history of robbery offences attempting to rob him?

Very Unlikely  
 1                    2                    3                    4                    5                    6                    7  
 Very Likely

8. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one nearby; however, there are 5-6 innocent bystanders in sight. What would be the likelihood of an offender with a history of robbery offences attempting to rob him?

Very Unlikely  
 1                    2                    3                    4                    5                    6                    7  
 Very Likely

9. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. There is no one else nearby. What would be the likelihood of an offender with a history of robbery offences attempting to rob him?

Very Unlikely  
 1                    2                    3                    4                    5                    6                    7  
 Very Likely

10. It is dusk near an ATM. A middle age man is withdrawing a large amount of cash. The man appears to have a bulge under his clothing which looks like a gun. There is no one else nearby. What would be the likelihood of an offender with a history of robbery offences attempting to rob him?

Very Unlikely  
 1                    2                    3                    4                    5                    6                    7  
 Very Likely

11. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in line; however, there are 1-2 innocent bystanders in the back of the store. What would be the likelihood of an offender with a history of convenience store robbery offences attempting to rob the store?

Very Unlikely  
1            2            3            4            5            6            7  
Very Likely

12. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in line; however, there are 1-2 innocent bystanders in the back of the store. What would be the likelihood of an offender with a history of convenience store robbery offences attempting to rob the store?

Very Unlikely  
1            2            3            4            5            6            7  
Very Likely

13. It is evening at a small convenience store. The clerk is a small foreign man. There is no one in the store. What would be the likelihood of an offender with a history of convenience store robbery offences attempting to rob the store?

Very Unlikely  
1            2            3            4            5            6            7  
Very Likely

14. It is evening at a small convenience store. The clerk is a small foreign man. It is well known that the clerk keeps a weapon under the counter. There is no one in the store. What would be the likelihood of an offender with a history of convenience store robbery offences attempting to rob the store?

Very Unlikely  
1            2            3            4            5            6            7  
Very Likely

15. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. What would be the likelihood of an offender with a history of car theft offences attempting to steal the car?

Very Unlikely  
1            2            3            4            5            6            7  
Very Likely

16. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away and it is noted that there is a bulge under the owner's jacket that looks like a gun. What would be the likelihood of an offender with a history of car theft offences attempting to steal the car?

Very Unlikely  
1                      2                      3                      4                      5                      6                      Very Likely  
7

17. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away. There are 10 innocent bystanders shopping at the stand nearby. What would be the likelihood of an offender with a history of car theft offences attempting to steal the car?

Very Unlikely  
1                      2                      3                      4                      5                      6                      Very Likely  
7

18. It is early evening and the owner of a nice car has parked it on the side of the road as he shops at a roadside stand. The car is left running as the owner is 15 feet away and it is noted that there is a bulge under the owner's jacket that looks like a gun. There are 10 innocent bystanders shopping at the stand nearby. What would be the likelihood of an offender with a history of car theft offences attempting to steal the car?

Very Unlikely  
1                      2                      3                      4                      5                      6                      Very Likely  
7

19. It is evening and an attractive female wearing revealing clothing is jogging by herself along a pathway in a large deserted park that is filled with trees and bushes. What would be the likelihood of an offender with a history of rape offences attempting to sexually assault her?

Very Unlikely  
1                      2                      3                      4                      5                      6                      Very Likely  
7

20. It is evening and an attractive female wearing revealing clothing is jogging by herself along a pathway in a large deserted park that is filled with trees and bushes. She appears to be walking with her hand in her purse as if she is holding something. What would be the likelihood of an offender with a history of rape offences attempting to sexually assault her?

Very Unlikely  
1                      2                      3                      4                      5                      6                      Very Likely  
7

**What would you estimate is the percentage of people legally carrying firearms? (circle one)**

Less than 1%   1-3%   3-5%   5-10%   10-25%   25-50%   50-100%

**Has anyone you personally know encountered an armed victim before? (circle one)**

Yes                      No

**Have you ever committed a direct contact crime against an innocent or non-criminal victim?**

Yes                      No

**If you answered yes to the question above was the intended victim armed with a weapon?**

Yes                      No                      Not Applicable

**If you answered yes to the question above do you believe the intended victim was legally carrying the weapon?**

Yes                      No                      Not Applicable



## APPENDIX B: IRB LETTER



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Approval of Human Research

From: UCF Institutional Review Board #1  
FWA00000351, IRB00001138  
To: James Lickteig  
Date: July 27, 2012

Dear Researcher:

On 7/27/2012, the IRB approved the following human participant research until 7/26/2013 inclusive:

Type of Review: UCF Initial Review Submission Form  
Project Title: Threat Communication as it Relates to Criminal Deterrence: A  
Study of Criminal Awareness of Concealed Weapon Permit  
Issuance  
Investigator: James Lickteig  
IRB Number: SBE-12-08571  
Funding Agency:  
Grant Title:  
Research ID: N/A

The Continuing Review Application must be submitted 30 days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

If continuing review approval is not granted before the expiration date of 7/26/2013, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in IRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 07/27/2012 03:38:42 PM EDT

A handwritten signature in black ink that reads 'Joanne Muratori'.

IRB Coordinator

## REFERENCES

- Alexander, C., & Becker, H. (1978). The use of vignettes in survey research. *Public Opinion Quarterly*, 42(1), 93-104.
- Ayres, I., & Donohue, J. J. (2002). *Shooting down the more guns, less crime hypothesis*. Stanford Law & Econ. Working Paper 247; Stanford Public Law Research Paper 44; Yale Public Law Research Paper 28; Yale Law & Econ. Research Paper 272. Retrieved from <http://ssrn.com/abstract=343781>
- Bachman, R., & Paternoster, R. (2009). *Statistical method for criminology and criminal justice* (3rd ed.). New York, NY: McGraw-Hill.
- Beck, K. H., & Frankel, A. (1981). A conceptualization of threat communications and protective health behavior. *Social Psychology Quarterly*, 44(3), 204-217.
- Black, D. A., & Nagin, D. S. (1998). Do right-to-carry laws deter violent crime? *The Journal of Legal Studies*, 27(1), 209-219.
- Blair, J. P., Martaindale, M. H., & Nichols, T. (n.d.). Active shooter events from 2000 to 2012. *FBI*. Retrieved from <http://leb.fbi.gov/2014/january/active-shooter-events-from-2000-to-2012>

- Blalock, H. (1972). *Social statistics* (2d ed.). New York: McGraw-Hill.
- Blonigen, D. M. (2010). Explaining the relationship between age and crime: Contributions from the developmental literature on personality. *Clinical Psychology Review, 30*, 89-100.  
doi:10.1016/j.cpr.2009.10.001
- Bousquet, S. (2009, February 18). Economy blamed for increase in concealed weapon permits in Florida. *Tampa Bay Times*. Retrieved from <http://www.tampabay.com/news/politics/state/economy-blamed-for-increase-in-concealed-weapon-permits-in-florida/976999>
- Bronars, S. G., & Lott, J. R., Jr. (1998). Criminal deterrence, geographic spillovers, and the right to carry concealed handguns. *American Economic Review, 88*, 475-479.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Stamford, CT: Cengage Learning.
- Chiricos, T., Eschholz, S., & Gertz, M. (1997). Crime, news and fear of crime: Toward an identification of audience effects. *Social Problems, 44*(3), 342-357.  
doi:10.1525/sp.1997.44.3.03x0119o
- Clarke, R. (2012). Opportunity makes the thief. Really? And so what? *Crime Science, 1*(3), 1-9.

- Cook, P. J. (1980). Research in criminal deterrence: Laying the groundwork for the second decade. *Crime and Justice*, 2, 211-268. Retrieved from <http://www.jstor.org/stable/1147415>
- Cook, P. J. (2013). The great American gun war: Notes from four decades in the trenches. *Crime and Justice*, 42(1), 19-73.
- Cook, P., Ludwig, J., & Hemenway, D. (1997). The gun debate's new mythical number: How many defensive uses per year? *Journal of Policy Analysis and Management*, 16(3), 463-469. doi: 10.1002/(SICI)1520-6688
- Coupe, R. T., & Blake, L. (2005). The effects of patrol workloads and response strength on arrests at burglary emergencies. *Journal of Criminal Justice*, 33(3), 239-255. doi:10.1016/j.jcrimjus.2005.02.004
- Dezhbakhsh, H., & Rubin, P. H. (1998). Lives saved or lives lost? The effects of concealed-handgun laws on crime. *American Economic Review*, 88, 468-474.
- Donohue, J. J. (2003). The impact of concealed-carry laws. in J. Ludwig & P. Cook (Eds.), *Evaluating gun policy: Effects on crime and violence* (pp. 287-344). Washington, DC: The Brookings Institution.
- Duggan, M. (2001) More guns, more crime. *Journal of Political Economy*, 109(5), 1086-1114.

Federal Bureau of Investigation. (FBI). (2009). *Uniform crime report*. Retrieved from [http://www2.fbi.gov/ucr/cius2008/offenses/violent\\_crime/index.html](http://www2.fbi.gov/ucr/cius2008/offenses/violent_crime/index.html)

Field, A. (2011). *Discovering statistics using SPSS* (3rd ed.). London, UK: Sage.

Florida Department of Agriculture and Consumer Services Division of Licensing. (n.d.). *Concealed weapon or firearm license summary report*. Retrieved July 3, 2014, from [http://www.freshfromflorida.com/content/download/7499/118851/cw\\_monthly.pdf](http://www.freshfromflorida.com/content/download/7499/118851/cw_monthly.pdf)

Florida Department of Agriculture and Consumer Services Division of Licensing. (n.d.). *Number of licensees by type*. Retrieved July 3, 2014, from [http://www.freshfromflorida.com/content/download/7471/118627/Number\\_of\\_Licensees\\_By\\_Type.pdf](http://www.freshfromflorida.com/content/download/7471/118627/Number_of_Licensees_By_Type.pdf)

Fowler, F. (2009). *Survey research methods* (4th ed.). Los Angeles (i.e. Thousand Oaks, Calif.): SAGE Publications.

Geerken, M. R., & Gove, W. R. (1975). Deterrence: Some theoretical considerations. *Law & Society Review*, 9(3), 497-513. Retrieved from <http://www.jstor.org/stable/3053169>

Gelder, J., Elffers, H., Reynald, D., & Nagin, D. (Eds.). (2014). *Affect and cognition in criminal decision making*. New York, NY: Routledge.

- Ghatak, M. (2001). *Gun control and the self-defense argument*.  
Unpublished manuscript, Department of Economics, University  
of Chicago. Retrieved from [http://econ.lse.ac.uk/staff  
/mghatak/gun.pdf](http://econ.lse.ac.uk/staff/mghatak/gun.pdf)
- Gliner, J., & Morgan, G. (2000). *Research methods in applied  
settings: An integrated approach to design and analysis*.  
Mahwah, NJ: Erlbaum.
- Goldberg, A. I., Dar-El, E. M., & Rubin, A. E. (1991). Threat  
perception and the readiness to participate in safety  
programs. *Journal of Organizational Behavior*, 12(2), 109-  
122. doi:10.1002/job.4030120204
- Hammer, M. P. (2008). Our right-to-carry is under attack!  
Retrieved from  
<http://www.nraila.org/Legislation/Read.aspx?id=3880>
- Harnisch, T. L. (2008). *Concealed weapons on state college  
campuses: In pursuit of individual liberty and collective  
security 2*. Retrieved from  
<http://www.aascu.org/WorkArea/DownloadAsset.aspx?id=4545>
- Jacobs, B. (2010). Deterrence and deterrability. *Criminology*,  
48(2), 417-441.
- Jensen, G., Erickson, M., & Gibbs, J. (1978). Perceived risk of  
punishment and self-reported delinquency. *Social Forces*,  
57(1), 57-78.

Justice Research and Statistics Association. (n.d.).

Standardizing the display of IBR data: Time and date variables. Retrieved from [http://www.jrsainfo.org/ibrcc/using-data/data\\_quality/data\\_elements/time\\_date/time\\_FBI.shtml](http://www.jrsainfo.org/ibrcc/using-data/data_quality/data_elements/time_date/time_FBI.shtml)

Kelling, G., T. Pate, D. Dieckman, & C. Brown. (1974). *The Kansas City preventive patrol experiment: A summary report*. Retrieved from <http://www.policefoundation.org/content/kansas-city-preventive-patrol-experiment-0>

Kleck, G. (1979). Capital punishment, gun ownership, and homicide. *American Journal of Sociology*, 84(4), 882-910. Retrieved from <http://www.press.uchicago.edu/ucp/journals/journal/ajs.html>

Kleck, G. (1986). Policy lessons from recent gun control research. *Law and Contemporary Problems*, 49, 35-62. Retrieved from <http://lcp.law.duke.edu/>

Kleck, G. (1988). Crime control through the private use of armed force. *Social Problems*, 35(1), 1-21. doi:10.2307/800663

Kleck, G. (1997). *Targeting guns: Firearms and their control*. New York, NY: Aldine Transaction.

- Kleck, G., & Gertz, M. (1995). Armed resistance to crime: The prevalence and nature of self-defense with a gun. *Journal of Criminal Law and Criminology*, 86(1), 150-187. Retrieved from <http://scholarlycommons.law.northwestern.edu/jclc/vol86/iss1/8>
- Kleck, G., & Hogan, M. (1999). National case-control study of homicide offending and gun ownership. *Social Problems*, 46(2), 275-293. doi:10.2307/3097256
- Kleck, G., & Sayles, S. (1990). Rape and resistance. *Social Problems*, 37(2), 149-162. doi:10.2307/800645
- Levin, J., & Milgrom, P. (2004). *Introduction to choice theory*. Unpublished manuscript, Department of Economics, Stanford University. Retrieved from <http://web.stanford.edu/~jldlevin/Econ%20202/Choice%20Theory.pdf>
- Lizotte, A. J., & Bordua, D. J. (1980). Firearms ownership for sport and protection: Two divergent models. *American Sociological Review*, 45(2), 229-244. Retrieved from <http://www.jstor.org/stable/2095123>
- Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self-reports. *American Economic Review*, 94(1), 155-189. doi:10.1257/000282804322970751
- Lott, J. R., Jr. (1998). The concealed-handgun debate. *Journal of Legal Studies*, 27(1), 221-243. doi: 10.1086/468020



- Lott , J. R., Jr., (2010). *More guns, less crime: Understanding crime and gun control laws* (3rd ed.). Chicago, IL: University Of Chicago Press.
- Lott, J. R., Jr., & Mustard, D. B. (1997). Crime, deterrence, and right-to-carry concealed handguns. *The Journal of Legal Studies*, 26(1), 1-68. doi: 10.1086/467988
- Ludwig, J. (2000). Gun self-defense and deterrence. *Crime and Justice*, 27, 363-417.
- Macy, M. W., & Flache, A. (1995). Beyond rationality in models of choice. *Annual Review of Sociology*, 21, 73-91. Retrieved from <http://www.jstor.org/stable/2083404>
- McDowall, D., Lizotte, A., & Wiersema, B. (1991) General Deterrence through Civilian Gun Ownership: An Evaluation of the Quasi-Experimental Evidence. *Criminology*, 29(4) 541-559. doi:10.1111/j.1745-9125.1991.tb01079.x
- McDowall, D., Loftin, C., & Wiersema, B. (1995). Easing concealed firearms laws: Effects on homicide in three states. *The Journal of Criminal Law and Criminology*, 86(1), 193-206.
- Mustard, D. B. (2001). The impact of gun laws on police deaths. *Journal of Law and Economics*, 44(2), 635-657.
- Mustard, D. B. (2003). Culture affects our beliefs about firearms, but data are also important. *University of Pennsylvania Law Review*, 151(4), 1387-1394.

- Nagin, D. S., & Paternoster, R. (1993). Enduring individual differences and rational choice theories of crime. *Law & Society Review*, 27(3), 467-496. doi: 10.2307/3054102
- National Research Council. (2004). *Firearms and violence: A critical review*. Washington, DC: The National Academies Press.
- National Rifle Association of America, Institute for Legislative Action (NRA-ILA). (2007). The "Individual personal private property protection" legislation to be heard tomorrow morning, Wednesday, April 18!" Retrieved from <http://www.nraila.org/Legislation/Read.aspx?id=2886>
- Novak, K. J., Hartman, J. L., Holsinger, A. M., & Turner, M. G. (1999). The effects of aggressive policing of disorder on serious crime. *Policing*, 22(2), 171-190. doi:10.1108/13639519910271229
- Paternoster, R. (1989). Decisions to participate in and desist from four types of common delinquency: Deterrence and the rational choice perspective. *Law & Society Review*, 23(1), 7-40. doi:10.2307/3053879
- Plassmann, F., & Tideman, T. N. (2001). Does the right to carry concealed handguns deter countable crimes? Only a count analysis can say. *Journal of Law and Economics*, 44(S2), 77-798.

- Pogarsky, G. (2002). Identifying "deterable" offenders: Implications for research on deterrence. *Justice Quarterly*, 19(3), 431-452.
- Polsby, D. D. (1995). Firearms costs, firearms benefits and the limits of knowledge. *The Journal of Criminal Law and Criminology*, 86(1), 207-220.
- Sampson, R. J., & Cohen, J. (1988). Deterrent effects of the police on crime: A replication and theoretical extension. *Law & Society Review*, 22(1), 163-189. doi: 10.2307/3053565
- Schwarz, N., & Hippler, H. (1995). Subsequent Questions May Influence Answers to Preceding Questions in Mail Surveys. *Public Opinion Quarterly*, 59(1), 93-97. doi: 10.1086/269460
- Scott, J. (2000). Rational choice theory. In G. Browning, A. Halcli, & F. Webster (Eds.), *Understanding contemporary society: Theories of the present* (pp. 126-139). London, UK: Sage. doi: <http://dx.doi.org/10.4135/9781446218310.n9>
- Sherman, L. W. (1990). Police crackdowns: Initial and residual deterrence. *Crime and Justice*, 12, 1-48. Retrieved from <http://www.jstor.org/stable/1147437>
- Sherman, L. W., Gottfredson, D. C., MacKenzie, D. L., Eck, J., Reuter, P., & Bushway, S. D. (1998). Preventing crime: What works, what doesn't, what's promising. National Institute of Justice, Research in Brief. Retrieved from <https://www.ncjrs.gov/pdffiles/171676.PDF>

- Smith, T. (1997). A Call for a Truce in the DGU War. *The Journal of Criminal Law and Criminology*, 87(4), 1462-1469. doi: 10.2307/1144022
- Snyder, J. R. (1997). *Fighting back: Crime, self-defense, and the right to carry a handgun*. Washington, D.C.: Cato Institute.
- Social Marketing Institute. (2009). *Success stories: Click it or ticket*. Retrieved from <http://www.social-marketing.org/success/cs-clickit.html>
- Sternthal, B., & Craig, C. S. (1974). Fear appeals: Revisited and revised. *Journal of Consumer Research*, 1(3), 22-34. Retrieved from <http://www.jstor.org/stable/2488776>
- Stormann, C. R. (1999). *Educating the public about the police: The Lima PSA project* (Doctoral dissertation, University of Cincinnati). Retrieved from [http://cech.uc.edu/content/dam/cech/programs/criminaljustice/docs/phd\\_dissertations/1999/Storman.pdf](http://cech.uc.edu/content/dam/cech/programs/criminaljustice/docs/phd_dissertations/1999/Storman.pdf)
- Students for Concealed Carry on Campus (SCCC). (n.d.). *About us*. Retrieved from <http://concealedcampus.org/>
- Surette, R. (1999). Media echoes: Systemic effects of news coverage. *Justice Quarterly*, 16, 601-631. doi:10.1080/07418829900094281

- Surette, R., & Richard, A. (1995). Public information officers: A descriptive study of crime news gatekeepers. *Journal of Criminal Justice*, 23(4), 325-336.  
doi:10.1016/0047-2352(95)00023-J
- Vieira, J. S. (2013). *The effects of California's concealed carry weapons laws on certain violent crime rates* (Master's thesis, California State University). Retrieved from <http://scholarworks.csustan.edu/bitstream/handle/011235813/273/VieiraJ.spring2013thesis.pdf?sequence=1>
- Weiss, J. A., & Tschirhart, M. (1994). Public information campaigns as policy instruments. *Journal of Policy Analysis and Management*, 13(1), 82-119. doi:10.2307/3325092
- Wilcox, P. (2010). *Encyclopedia of criminological theory* (1st ed.). Irvine, CA: Sage.
- Wilson, J. Q., & Boland, B. (1978). The effect of the police on crime. *Law & Society Review*, 12(3), 367-390.  
doi:10.2307/3053285
- Wilson, J. Q., & Petersilia, J. (2004). *Crime: Public policies for crime control*. Oakland, CA: Institute for Contemporary Studies.
- Witte, K. (1992). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs*, 59(4), 329-349. doi:10.1080/03637759209376276

Wright, B., Caspi, A., Moffitt, T., & Paternoster, R. (2004).

Does the perceived risk of punishment deter criminally prone individuals? Rational choice, self-control, and crime. *Journal of Research in Crime and Delinquency*, 41(180), 180-213.

Wright, J., & Rossi, P. (2008). *Armed and considered dangerous:*

*A survey of felons and their firearms* (2nd ed.). New Brunswick, NJ: Transaction.